Proven Performance Yingli

Photovoltaic (PV) solar energy is expected to be the world's largest source of electricity in the future. To enhance the long-term reliability of PV modules, a thorough understanding of failure mechanisms is of vital importance. In addition, it is important to address the potential downsides to this technology. These include the hazardous chemicals needed for manufacturing solar cells, especially for thin-film technologies, and the large number of PV modules disposed of at the end of their lifecycles. This book discusses the reliability and environmental aspects of PV modules.

This book reviews the current status of semiconductor materials for conversion of sunlight to electricity, and highlights advances in both basic science and manufacturing. Photovoltaic (PV) solar electric technology will be a significant contributor to world energy supplies when reliable, efficient PV power products are manufactured in large volumes at low cost. Expert chapters cover the full range of semiconductor materials for solar-to-electricity conversion, from crystalline silicon and amorphous silicon to cadmium telluride, copper indium gallium sulfide selenides, dye sensitized solar cells, organic solar cells, and environmentally friendly copper zinc tin sulfide selenides. The latest methods for synthesis and characterization of solar cell materials are described, together with techniques for measuring solar cell efficiency. Semiconductor Materials for Solar Photovoltaic Cells presents the current state of the art as well as key details about future strategies to increase the efficiency and reduce costs, with particular focus on how to reduce the gap between laboratory scale efficiency and commercial module efficiency. This book will aid materials scientists and engineers in identifying research priorities to fulfill energy needs, and will also enable researchers to understand novel semiconductor materials that are emerging in the solar market. This integrated approach also gives science and engineering students a sense of the excitement and relevance of materials science in the development of novel semiconductor materials. · Provides a comprehensive introduction to solar PV cell materials · Reviews current and future status of solar cells with respect to cost and efficiency · Covers the full range of solar cell materials, from silicon and thin films to dye sensitized and organic solar cells · Offers an in-depth account of the semiconductor material strategies and directions for further research · Features detailed tables on the world leaders in efficiency demonstrations · Edited by scientists with experience in both research and industry

Global Marketing Management, 8th Edition combines academic rigor, contemporary relevance, and student-friendly readability to review how marketing managers can succeed in the increasingly competitive international business environment. This in-depth yet accessible textbook helps students understand state-of-the-art global marketing practices and recognize how marketing managers work across business functions to achieve overall corporate goals. The author provides relevant historical background and offers logical explanations of current trends based on information from marketing executives and academic researchers around the world. Designed for students majoring in business, this thoroughly updated eighth edition both describes today's multilateral realities and explores the future of marketing in a global context. Building upon four main themes, the text discusses marketing management in light of the drastic changes the global economy has undergone, the explosive growth of information technology and e-commerce, the economic and political forces of globalization, and the various consequences of corporate action such as environmental pollution, substandard food safely, and unsafe work environments. Each chapter contains review and discussion questions to encourage classroom participation and strengthen student learning.

"A testament to the synergy of two evolving fields. From the study of staged performances to examinations of the performing body in everyday life, this book demonstrates the enormous profitability of moving beyond disability as metaphor. . . . It's a lesson that many of our cultural institutions desperately need to learn." -Martin F. Norden, University of Massachusetts-Amherst This groundbreaking collection imagines disabled bodies as "bodies in commotion"-bodies that dance across artistic and discursive boundaries, challenging our understanding of both disability and performance. In the book's essays, leading critics and artists explore topics that range from theater and dance to multi-media performance art, agit-prop, American Sign Language theater, and wheelchair sports. Bodies in Commotion is the first collection to consider the mutually interpretive qualities of these two emerging fields, producing a dynamic new resource for artists, activists, and scholars.

ICPR 2018 International Workshops, CVAUI, IWCF, and MIPPSNA, Beijing, China, August 20-24, 2018, Revised Selected Papers
Machine Learning Used in Biomedical Computing and Intelligence Healthcare, Volume I
Membrane and Cytoskeleton Mechanics
Semiconductor Materials for Solar Photovoltaic Cells
End-Of-life Management
10th EAI International Conference, MobiCASE 2019, Hangzhou, China, June 14⊟15, 2019, Proceedings
Information Systems Design and Intelligent Applications

Provides practical guidance on the latest quality assurance and accelerated stress test methods for improved long-term performance prediction of PV modules This book has been written from a historical perspective to guide readers through how the PV industry learned what the failure and degradation modes of PV modules were, how accelerated tests were developed to cause the same failures and degradations in the laboratory, and then how these tests were used as tools to guide the design and fabrication of reliable and long-life modules. Photovoltaic Module Reliability starts with a brief history of photovoltaics, discussing some of the different types of materials and devices used for commercial solar cells. It then goes on to offer chapters on: Module Failure Modes; Development of Accelerated Stress Tests; Qualification Testing; and Failure Analysis Tools. Next, it examines the use of quality management systems to manufacture PV modules. Subsequent chapters cover the PVQAT Effort; the Conformity Assessment and IECRE; and Predicting PV Module Service Life. The book finishes with a look at what the future holds for PV. A comprehensive treatment of current photovoltaic (PV) technology reliability and necessary improvement to become a significant part of the electric utility supply system Well documented with experimental and practical cases throughout, enhancing relevance to both scientific community and industry Timely contribution to the harmonization of methodological aspects of PV reliability evaluation with test procedures implemented to certify PV module quality Written by a leading international authority in PV module reliability Photovoltaic Module Reliability is an excellent book for anyone interested in PV module reliability, including those working directly on PV module and system reliability and preparing to purchase modules for deployment.

This book constitutes the thoroughly refereed post-conference proceedings of the 10th International Conference on Mobile Computing, Applications, and Services, MobiCASE 2019, held in Hangzhou, China, in June 2019. The 17 full papers were carefully reviewed and selected from

48 submissions. The papers are organized in topical sections on mobile application with data analysis, mobile application with AI, edge computing, energy optimization and application E-Logistics serves as the nerve system for the whole supply chain and enables smooth information flow within and between organizations. This new and updated edition provides the latest and most comprehensive coverage on digitalization in logistics and supply chain. It covers all transport modes and the role of ICT in supporting an integrated freight and supply chain network. E-Logistics provides a cross-academic and industry perspective with leading academics and practitioners as contributing authors. A variety of successful e-logistics business approaches are discussed covering a range of commercial sectors and transport modes. Subsequent chapters address in depth support systems for B2C and B2B e-commerce and e-fulfilment, warehouse management, RFID, electronic marketplaces, global supply network visibility and service chain automation. Industry case studies are used to support the discussion. The new edition also covers emerging technologies such as AI, machine learning and autonomous vehicles, Internet of Things, Robotics, drone and last mile deliveries. Traditionally, scientific fields have defined boundaries, and scientists work on research problems within those boundaries. However, from time to time those boundaries get shifted or blurred to evolve new fields. For instance, the original goal of computer vision was to understand a single image of a scene, by identifying objects, their structure, and spatial arrangements. This has been referred to as image understanding. Recently, computer vision has gradually been making the transition away from understanding single images to analyzing image sequences, or video Video understanding deals with understanding of video understanding. sequences, e.g., recognition of gestures, activities, facial expressions, etc. The main shift in the classic paradigm has been from the recognition of static objects in the scene to motion-based recognition of actions and events. Video understanding has overlapping research problems with other fields, therefore blurring the fixed boundaries. Computer graphics, image processing, and video databases have obvi ous overlap with computer vision. The main goal of computer graphics is to generate and animate realistic looking images, and videos. Re searchers in computer graphics are increasingly employing techniques from computer vision to generate the synthetic imagery. A good exam pIe of this is image-based rendering and modeling techniques, in which geometry, appearance, and lighting is derived from real images using computer vision techniques. Here the shift is from synthesis to analy sis followed by synthesis. Image processing has always overlapped with computer vision because they both inherently work directly with images.

How Innovative Hotels are Transforming the Industry
Na-ion Batteries
Photovoltaics for Commercial and Utilities Power Generation
A Fuzzy Qualitative Approach
Volume 1
For Movie Content Extraction, Indexing and Representation
A Pattern Analysis Approach

This is the first book to connect the concepts of active learning and deep learning, and to delineate theory and practice through collaboration between scholars in higher education from three countries (Japan, the United States, and Sweden) as well as different subject areas (education, psychology, learning science, teacher training, dentistry, and business).It is only since the beginning of the twenty-first century that active learning has become key to the shift from teaching to learning in Japanese higher education. However, "active learning" in Japan, as in many other countries, is just an umbrella term for teaching methods that promote students' active participation, such as group work, discussions, presentations, and so on.What is needed for students is not just active learning but deep active learning. Deep learning focuses on content and quality of learning whereas active learning, especially in Japan, focuses on methods of learning. Deep active learning is placed at the intersection of active learning and deep learning, referring to learning that engages students with the world as an object of learning while interacting with others, and helps the students connect what they are learning with their previous knowledge and experiences as well as their future lives.What curricula, pedagogies, assessments and learning environments facilitate such deep active learning? This book attempts to respond to that question by linking theory with practice.
This book investigates how the Blockchain Technology (BCT) for Supply Chain Finance (SCF) programs allows businesses to come together in partnerships and accelerate cash flows throughout the supply chain. BCT promises to change the way individuals and corporations exchange value and information over the Internet, and is perfectly positioned to enable new levels of collaboration among the supply chain actors. The book reveals new opportunities stemming from the application of BCT to SCF financing solutions, particularly reverse factoring – or approved payables financing. To do so, it first identifies the principal barriers and pain points in delivering financing solutions. Then, a possible blockchain-driven supply chain model is defined. Using this framework,

the book subsequently discusses relevant use cases for the technology, which could open up new opportunities in the SCF space. It demonstrates that blockchain and distributed ledgers technologies could deliver substantial benefits for all parties involved in SCF transactions, promising to expedite the processes and lower the overall costs of financing programs. Industry giants such as IBM, Maersk, China-based Dianrong and FnConn (a Foxconn subsidiary) are currently working to digitize the global, cross-border supply chain using blockchain technology, and will likely soon create blockchain platforms for supply chain finance. These solutions aim to reduce complexity and make data sharing more secure, accurate and efficient. This book offers a highly topical resource for stakeholders across the entire supply chain, helping them prepare for the upcoming technological revolution.

This book introduces readers to the latest exciting advances in human motion sensing and recognition, from the theoretical development of fuzzy approaches to their applications. The topics covered include human motion recognition in 2D and 3D, hand motion analysis with contact sensors, and vision-based view-invariant motion recognition, especially from the perspective of Fuzzy Qualitative techniques. With the rapid development of technologies in microelectronics, computers, networks, and robotics over the last decade, increasing attention has been focused on human motion sensing and recognition in many emerging and active disciplines where human motions need to be automatically tracked, analyzed or understood, such as smart surveillance, intelligent human-computer interaction, robot motion learning, and interactive gaming. Current challenges mainly stem from the dynamic environment, data multi-modality, uncertain sensory information, and real-time issues. These techniques are shown to effectively address the above challenges by bridging the gap between symbolic cognitive functions and numerical sensing & control tasks in intelligent systems. The book not only serves as a valuable reference source for researchers and professionals in the fields of computer vision and robotics, but will also benefit practitioners and graduates/postgraduates seeking advanced information on fuzzy techniques and their applications in motion analysis.

Photovoltaics for Commercial and Utilities Power Generation is an in-depth review of the solar industry development, and present day state-of-the-art. It emphasizes current and future applications of photovoltaic equipment in the commercial and utility energy sectors, highlighting its use in large scale power generating plants operating in the U.S. deserts. The book reviews all key aspects of the photovoltaic technologies from a theoretical point of view, looking closely at their design parameters, materials, manufacturing, quality and performance. It also covers the practical applications, focusing on large scale photovoltaics as a major alternative energy source. The author examines the advantages and disadvantages of each of today's solar technologies and projects them into the future in search of optimized niche markets and maximum utilization. Key technical issues related to: manufacturing and test procedures, product quality and safety, field performance, environmental impact, and other issues are thoroughly analyzed. Lack of standardized manufacturing processes and operating procedures, fluctuating political and regulatory policies, and the different financing, legal and marketing aspects of the solar industry are amidst the topics discussed in detail as well. Photovoltaics for Commercial and Utilities Power Generation provides a 360 degree view of today's solar energy products and the related manufacturing and operating procedures. It exposes the issues plaguing the solar industry, with the ultimate goal of finding the best solutions as needed to bring photovoltaic technologies to acceptable level of efficient, reliable and cost-effective operation in large scale power generation plants. Large scale PV power generation is one of the keys to meeting the energy and environmental demands of the 21st century. This book identifies the major issues and suggests solutions to the obstacles hindering the large scale deployment of photovoltaics in the U.S. and abroad.

Maoist Economics and the Revolutionary Road to Communism
The Case of Reverse Securitisation
The Value Line Investment Survey

Kinetics of Catalytic Reactions
E-Logistics
Nanotechnology and Development

This book comprehensively covers corrosion and corrosion protection in China in the areas including infrastructure, transportation, energy, water environment, as well as manufacturing and public utilities. Furthermore, it presents a major consulting project of Chinese Academy of Engineering, which was the largest corrosion investigation project in Chinese history, including the corresponding methods, processes and corrosion protection strategies, and provides valuable information for numerous industries. Sharing essential insights into corrosion prediction

and decision-making, this book will help to decrease costs and extend the service life of equipment and facilities; accordingly, it will benefit scientists and engineers working on corrosion research and protection, as well as economists and government employees.

"A good read for anyone who wants to understand what actually determines whether a developing economy will succeed" (Bill Gates, "Top 5 Books of the Year"). An Economist Best Book of the Year from a reporter who has spent two decades in the region, and who The Financial Times said "should be named chief myth-buster for Asian business." In How Asia Works, Joe Studwell distills his extensive research into the economies of nine countries—Japan, South Korea, Taiwan, Indonesia, Malaysia, Thailand, the Philippines, Vietnam, and China—into an accessible, readable narrative that debunks Western misconceptions, shows what really happened in Asia and why, and for once makes clear why some countries have boomed while others have languished. Studwell's in-depth analysis focuses on three main areas: land policy, manufacturing, and finance. Land reform has been essential to the success of Asian economies, giving a kick-start to development by utilizing a large workforce and providing capital for growth. With manufacturing, industrial development alone is not sufficient, Studwell argues. Instead, countries need "export discipline," a government that forces companies to compete on the global scale. And in finance, effective regulation is essential for fostering, and sustaining growth. To explore all of these subjects, Studwell journeys far and wide, drawing on fascinating examples from a Philippine sugar baron's stifling of reform to the explosive growth at a Korean steel mill. "Provocative . . . How Asia Works is a striking and enlightening book . . . A lively mix of scholarship, reporting and polemic." —The Economist

This book examines solar technologies, describes their properties, and evaluates the technological potential of each. It also reviews the logistics of deploying solar energy as a viable and sustainable way to solve urgent energy, environmental, and socio-economic problems. Topics discussed include solar power generation, today's solar technologies, solar thermal, silicon PV, thin PV, 3-D solar cells, nano-PV, organic solar cells, solar successes and failures, solar power fields, finance and regulations, solar markets and solar energy and the environment.

This book constitutes the proceedings of the Sino-foreign-interchange Workshop on Intelligence Science and Intelligent Data Engineering, IScIDE 2011, held in Xi'an, China, in October 2011. The 97 papers presented were carefully peer-reviewed and selected from 389 submissions. The IScIDE papers in this volume are organized in topical sections on machine learning and computational intelligence; pattern recognition; computer vision and image processing; graphics and computer visualization; knowledge discovering, data mining, web mining; multimedia processing and application.

Knowledge Graphs

Green Logistics

The Cost of Corrosion in China

Intelligent Science and Intelligent Data Engineering

Solar Technologies for the 21st Century

Harnessing Solar Power in Humanitarian and Development Contexts

Improving the Environmental Sustainability of Logistics

Nanotechnology is a generic platform with potential applications in many sectors. It promises to be a motor of economic growth with inclusive development through innovation related to materials, foods, medicines, and so on. This book identifies the nature and magnitude of the nanotechnology divide between high-income countries and the rest of the world. It also studies the determinants of the evolution and functioning of state policy and technology clusters in developed regions like the USA and the EU in order to identify the strategies that can or cannot be replicated elsewhere. Tracing the trajectories in nanotechnology being carved out by four emerging countries: China, India, Brazil and Mexico, it identifies common as well as country-specific factors that influence the rates of return to public and private investment related to nanotechnology in emerging countries. The book also makes policy recommendations to bridge the nanotechnology divide while promoting economic growth and inclusive development.

This book provides a comprehensive and accessible introduction to knowledge graphs, which have recently garnered notable attention from both industry and academia. Knowledge graphs are founded on the principle of applying a graph-based abstraction to data, and are now broadly deployed in scenarios that require integrating and extracting value from multiple, diverse sources of data at large scale. The book defines knowledge graphs and provides a high-level overview of how they are used. It presents and contrasts popular graph models that are commonly used to represent data as graphs, and the languages by which they can be queried before describing how the resulting data graph can be enhanced with notions of schema, identity, and context. The book discusses how ontologies and rules can be used to encode knowledge as well as how inductive techniques—based on statistics, graph analytics, machine learning, etc.—can be used to encode and extract knowledge. It covers techniques for the creation, enrichment, assessment, and refinement of knowledge graphs and surveys recent open and enterprise knowledge graphs and the industries or applications within which they have been most widely adopted. The book closes by discussing the current limitations and future directions along which knowledge graphs are likely to evolve. This book is aimed at students, researchers, and practitioners who wish to learn more about knowledge graphs and how they facilitate extracting value from diverse data at large scale. To make the book accessible for newcomers, running examples and graphical notation are used throughout. Formal definitions and extensive references are also provided for those who opt to delve more deeply into specific topics.

This book covers both the fundamental and applied aspects of advanced Na-ion batteries (NIB) which have proven to be a potential challenger to Li-ion batteries. Both the chemistry and design of positive and negative electrode materials are examined. In NIB, the electrolyte is also a crucial part of the batteries and the recent research, showing a possible alternative to classical electrolytes – with the development of ionic liquid-based electrolytes – is also explored. Cycling performance in NIB is also strongly associated with the quality of the electrode-electrolyte interface, where electrolyte degradation takes place; thus, Na-ion Batteries details the recent achievements in furthering knowledge of this interface. Finally, as the ultimate goal is commercialization of this new electrical storage technology, the last chapters are dedicated to the industrial point of view, given by two startup companies, who developed two different NIB chemistries for complementary applications and markets.

With increasing energy prices and the drive to reduce CO_2 emissions, food industries are challenged to find new technologies in order to reduce energy consumption, to meet legal requirements on emissions, product/process safety and control, and for

cost reduction and increased quality as well as functionality. Extraction is one of the promising innovation themes that could contribute to sustainable growth in the chemical and food industries. For example, existing extraction technologies have considerable technological and scientific bottlenecks to overcome, such as often requiring up to 50% of investments in a new plant and more than 70% of total process energy used in food, fine chemicals and pharmaceutical industries. These shortcomings have led to the consideration of the use of new "green" techniques in extraction, which typically use less solvent and energy, such as microwave extraction. Extraction under extreme or non-classical conditions is currently a dynamically developing area in applied research and industry. Using microwaves, extraction and distillation can now be completed in minutes instead of hours with high reproducibility, reducing the consumption of solvent, simplifying manipulation and work-up, giving higher purity of the final product, eliminating post-treatment of waste water and consuming only a fraction of the energy normally needed for a conventional extraction method. Several classes of compounds such as essential oils, aromas, anti-oxidants, pigments, colours, fats and oils, carbohydrates, and other bioactive compounds have been extracted efficiently from a variety of matrices (mainly animal tissues, food, and plant materials). The advantages of using microwave energy, which is a non-contact heat source, includes more effective heating, faster energy transfer, reduced thermal gradients, selective heating, reduced equipment size, faster response to process heating control, faster start-up, increased production, and elimination of process steps. This book will present a complete picture of the current knowledge on microwave-assisted extraction (MAE) of bioactive compounds from food and natural products. It will provide the necessary theoretical background and details about extraction by microwaves, including information on the technique, the mechanism, protocols, industrial applications, safety precautions, and environmental impacts.

Theory and Practice

China and the International Order

Second Sino-foreign-interchange Workshop, IScIDE 2011, Xi'an, China, October 23-25, 2011, Revised Selected Papers

Reliability and Ecological Aspects of Photovoltaic Modules

Bodies in Commotion

Plant Based "Green Chemistry 2.0"

Proceedings of Fourth International Conference INDIA 2017

This book provides practical information on obtaining and using a wide variety of plant based reagents for different sectors, addressing the needs and challenges in a single resource. The chapters complement each other seamlessly and present contributions from reputed international researchers and renowned professionals from industry, covering the latest efforts i field. The book serves as the starting point for future collaborations in the new area "Plant Based Green Chemistry" between research, industry, and education, covering large ecologic and economic applications: perfume, cosmetic, pharmaceutical, food ingredients, nutraceuticals, biofuels, or fine chemicals industries. This book is aimed at professionals from industries, academicians engaged in plant based green chemistry, researchers and graduate level students, but will also be useful to foo technologists and students and researchers involved in natural products chemistry.

This ground-breaking research represents the most complete collection yet on how the hospitality industry is addressing sustainability and ethical issues. Covering supply chain management, innovative sustainability initiatives, CSR programmes, biologically-respectful tourism and Value Creation, Sustainability in Hospitality: How Innovative Hotels are Transforming the Industry presents valuable global viewpoints on embedding sustainability into all aspects of the hospitality industry, and the i this could have on transforming the sector into an advocate for more sustainable, eco-conscious tourism.The chapters in thi edited collection span organizational governance, human rights and labour practices, environment and climate change, fair operating practices, stakeholder engagement, CSR and strategic management. The global reach of the collection brings case studies from China, the US, the UK, Mexico and Italy, while company case studies include Fairmont Luxury Hotels and Sextantio.Sustainability in Hospitality: How Innovative Hotels are Transforming the Industry will be an essential read for acade researching the development of ethically-conscious and sustainable hospitality, and for hotel managers and group CEOs who to know how sustainability and CSR can be embedded in their day-to-day operations.

Video Content Analysis Using Multimodal Information For Movie Content Extraction, Indexing and Representation is on conter based multimedia analysis, indexing, representation and applications with a focus on feature films. Presented are the state-o techniques in video content analysis domain, as well as many novel ideas and algorithms for movie content analysis based on use of multimodal information. The authors employ multiple media cues such as audio, visual and face information to bridge t gap between low-level audiovisual features and high-level video semantics. Based on sophisticated audio and visual content processing such as video segmentation and audio classification, the original video is re-represented in the form of a set of semantic video scenes or events, where an event is further classified as a 2-speaker dialog, a multiple-speaker dialog, or a hy event. Moreover, desired speakers are simultaneously identified from the video stream based on either a supervised or an adaptive speaker identification scheme. All this information is then integrated together to build the video's ToC (table of cont well as the index table. Finally, a video abstraction system, which can generate either a scene-based summary or an event-ba skim, is presented by exploiting the knowledge of both video semantics and video production rules. This monograph will be of great interest to research scientists and graduate level students working in the area of content-based multimedia analysis, indexing, representation and applications as well s its related fields.

Photovoltaics for Commercial and Utilities Power GenerationCRC Press

Washington Appellate Reports

Solar Pumping for Water Supply

How Asia Works

Pattern Recognition and Information Forensics

Proceedings of the 21st International Symposium on Advancement of Construction Management and Real Estate

Sustainability in Hospitality

Toward Greater Depth in University Education

Solar power for pumping groundwater has a vast potential for improving the sustainability

of water supply schemes. However a lack of knowledge is holding back their adoption. This book bridges this gap to equip engineers and technicians with the knowledge for design, implementation and operation of sustainable solar powered water schemes.

As economic power diffuses across more countries and China becomes more dependent on the world economy, Chinese leaders are being forced to abandon their largely passive approach to global governance. This report analyzes China's interests and behavior to evaluate both the recent history of its interactions with the postwar international order and possible future trajectories. It also draws implications from that analysis for future U.S. policy.

This book constitutes the refereed post-conference proceedings of 3 workshops, held at the 24th International Conference on Pattern Recognition, Beijing, China, in August 2018: the Third International Workshop on Computer Vision for Analysis of Underwater Imagery, CVAUI 2018, the 7th International Workshop on Computational Forensics, IWCF 2018, and the International Workshop on Multimedia Information Processing for Personality and Social Networks Analysis, MIPPSNA 2018.The 16 full papers presented in this book were carefully reviewed and selected from 23 submissions. CVAUI Workshop: The analysis of underwater imagery imposes a series of unique challenges, which need to be tackled by the computer vision community in collaboration with biologists and ocean scientists. IWCF Workshop: With the advent of high-end technology, fraudulent efforts are on rise in many areas of our daily life, may it be fake paper documents, forgery in the digital domain or copyright infringement. In solving the related criminal cases use of pattern recognition (PR) principles is also gaining an important place because of their ability in successfully assisting the forensic experts to solve many of such cases. MIPPSNA Workshop: Its goal is to compile the latest research advances on the analysis of multimodal information for facing problems that are not visually obvious, this is, problems for which the sole visual analysis is insufficient to provide a satisfactory solution.

The book is a collection of high-quality peer-reviewed research papers presented at International Conference on Information System Design and Intelligent Applications (INDIA 2017) held at Duy Tan University, Da Nang, Vietnam during 15-17 June 2017. The book covers a wide range of topics of computer science and information technology discipline ranging from image processing, database application, data mining, grid and cloud computing, bioinformatics and many others. The various intelligent tools like swarm intelligence, artificial intelligence, evolutionary algorithms, bio-inspired algorithms have been well applied in different domains for solving various challenging problems.

Photovoltaic Module Reliability

Managing Digital Supply Chains for Competitive Advantage

Zero Net Energy Case Study Homes

Agriculture Bulletin

Video Mining

The Shanghai Textbook

Human Motion Sensing and Recognition

The transport, storage and handling of goods impose a heavy burden on the environment. As concern for the environment rises, companies must take more account of the external costs of logistics associated mainly with climate change, air pollution, noise, vibration and accidents. Leading the way in current thinking on environmental logistics, Green Logistics provides a unique insight on the environmental impacts of logistics and the actions that companies and governments can take to deal with them. It is written by a group of leading researchers in the field and provides a comprehensive view of the subject for students, managers and policy-makers. Fully updated and revised, the 3rd Edition of Green Logistics takes a more global perspective than previous editions. It introduces new contributors and international case studies that illustrate the impact of green logistics in practice. There is a new chapter on the links between green logistics and corporate social responsibility (CSR) and a series of postscripts examining the likely effects of new developments, such as 3D printing and distribution by drone, on the environmental footprint of logistics. Other key topics examined in the book include: carbon auditing of supply chains; transferring freight to greener transport modes; reducing the environmental impact of warehousing; improving the energy efficiency of freight transport; making city logistics more environmentally sustainable; reverse logistics for the management of waste; role of government in promoting sustainable logistics Ideal for use on related courses, the 3rd Edition of Green Logistics includes indispensable online supporting materials, including graphics, tables and chapter summaries, as well as technical information and guidelines for teachers and lecturers.

The book is endorsed by the Chartered Institute of Logistics and Transport (CILT). Solar photovoltaic (PV) deployment has grown at unprecedented rates since the early 2000s. As the global PV market increases, so will the volume of decommissioned PV panels, and large amounts of annual waste are anticipated by the early 2030s. Growing PV panel waste presents a new environmental challenge, but also unprecedented opportunities to create value and pursue new economic avenues.This report, prepared jointly by the International Renewable Energy Agency (IRENA) and the International Energy Agency Photovoltaic Power Systems Programme (IEA-PVPS), is the first-ever projection of PV panel waste volumes to 2050. It highlights that recycling or repurposing solar PV panels at the end of their roughly 30-year lifetime can unlock an estimated stock of 78 million tonnes of raw materials and other valuable components globally by 2050. If fully injected back into the economy, the value of the recovered material could exceed USD 15 billion by 2050.

This book presents the proceedings of CRIOCM_2016, 21st International Conference on Advancement of Construction Management and Real Estate, sharing the latest developments in real estate and construction management around the globe. The conference was organized by the Chinese Research Institute of Construction Management (CRIOCM) working in close collaboration with the University of Hong Kong. Written by international academics and professionals, the proceedings discuss the latest achievements, research findings and advances in frontier disciplines in the field of construction management and real estate. Covering a wide range of topics, including building information modelling, big data, geographic information systems, housing policies, management of infrastructure projects, occupational health and safety, real estate finance and economics, urban planning, and sustainability, the discussions provide valuable insights into the implementation of advanced construction project management and the real estate market in China and abroad. The book is an outstanding reference resource for academics and professionals alike.

It is certain that, over the next few years, data traffic will dwarf voice traffic on telecommunications networks. Growth in data-traffic volumes far exceeds that for voice, and is driven by increased use of applications such as e-mail attachments, remote printing and fileserver access, and the now omnipresent World Wide Web. The growth of data networking to connect computers with each other and with their peripheral devices began in earnest in the 1970s, took off in the 1980s and exploded in the 1990s. The early 21st century will see ever faster, more cost effective networks providing flexible data access into ever more businesses and homes. Since the 1970s there have been great advances in technology. For the past twenty years the processing power of computers has continued to grow with no hint of slowing - recall the oft-cited Moore's Law claiming that this power doubles every 18 months. Advances in the data networking equipment required to support the data traffic generated have been enormous. The pace of development from early X. 25 and modem technology through to some of the advanced equipment functionality now available is breathtaking - it is sometimes hard to believe that the practical router is barely ten years old! This book provides an overview of the advanced data networking field by bringing together chapters on local area networks, wide area networks and their application.

Emotion Recognition

Deep Active Learning

Video Content Analysis Using Multimodal Information

Moving from Evolutionary to Revolutionary

Solar Photovoltaic Panels

Supply Chain Finance and Blockchain Technology

Disability and Performance

This is the first volume of in-depth case studies of zero-net-energy (ZNE) residential structures. Following the same descriptive approach and format of Volumes 1-3 of the previously published Zero Net Energy Case Study Buildings, this book focuses entirely on examples of housing archetypes in the United States. These include the single-family private house, one-off spec houses, manufactured housing, tract house developments and mixed-use multifamily projects. In this well-illustrated book, all the case study projects are described in terms of how they were built to achieve verified ZNE performance, that is, the energy used by the building over the course of a year was equal to the amount of energy supplied by its on-site renewable energy system. This book goes beyond recent publications on ZNE buildings with its reporting and analysis of the actual measured energy use and renewable energy production, including graphs and charts of this performance over a full year, verifying actual achievement of the zero-net-energy goal. As in the previous volumes, each case study concludes with a candid discussion of post-occupancy issues and "lessons learned" for the project. Enhanced by many beautiful photographs, architectural drawings and illustrations, it is attractive and easy to read, while still providing detailed technical information common to all the case study residential projects.

Describes how to conduct kinetic experiments with heterogeneous catalysts, analyze and model the results, and characterize the catalysts Detailed analysis of mass transfer in liquid phase reactions involving porous catalysts. Important to the fine chemicals and pharmaceutical industries so it has appeal to many researchers in both industry and academia (chemical engineering and chemistry departments

Mobile Computing, Applications, and Services

Microwave-assisted Extraction for Bioactive Compounds
Global Marketing Management
Data Network Engineering
What's in it for Emerging Countries?
Success and Failure In the World's Most Dynamic Region