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Microgrid Architectures, Control and Protection Methods - Naser Mahdavi Tabatabaei 2019-08-01

This book presents intuitive explanations of the principles of microgrids, including their structure and operation and their applications. It also discusses the latest research on microgrid control and protection technologies and the essentials of microgrids as well as enhanced communication systems. The book provides solutions to microgrid operation and planning issues using various methodologies including planning and modelling; AC and DC hybrid microgrids; energy storage systems in microgrids; and optimal microgrid operational planning. Written by specialists, it is filled in innovative solutions and research related to microgrid operation, making it a valuable resource for those interested in developing updated approaches in electric power analysis, design and operational strategies. Thanks to its in-depth explanations and clear, three-part structure, it is useful for electrical engineering students, researchers and technicians.

Innovation in Electrical Power Engineering, Communication, and Computing Technology - Renu Sharma 2020-02-21

This book features selected high-quality papers from the International Conference on Innovation in Electrical Power Engineering, Communication, and Computing Technology (IEPCCT 2019), held at Siksha 'O' Anusandhan (Deemed to be University), Bhubaneswar, India, on 13-14 December 2019. Presenting innovations in power, communication, and computing, it covers topics such as mini, micro, smart and future power grids; power system economics; energy storage systems; intelligent control; power converters; improving power quality; signal processing; sensors and actuators; image/video processing; high-performance data mining algorithms; advances in deep learning; and optimization methods.

Renewable Energy - Small Hydro - C.V.J. Varma 2020-11-25

This is a collection of conference papers on small hydro renewable energy, covering such topics as: resource assessment and planning; design and construction; and plant and equipment.

Technology Transfer in the Developing Countries - Manas Chatterji 2016-07-27

The objective of this book is to present the problems and possibilities of transferring technology from the developed countries to the developing countries to raise their standard of living. It develops the conceptual issues, legal ramifications, empirical testing of mathematical models and case studies of different industries in many countries. It contains articles by distinguished scholars in the field, practitioners and government officials. It is an important supplement to the hands-on approach used by many private industries and national and international organizations. The unique feature of this book is that it is multidisciplinary and that it has a balanced combination of abstract theoretical approaches and practical considerations.

Electric Renewable Energy Systems - Muhammad H. Rashid 2015-11-25

This derivative volume stemming from content included in our seminal Power Electronics Handbook takes its chapters related to renewables and establishes them at the core of a new volume dedicated to the increasingly pivotal and as yet under-published intersection of Power Electronics and Alternative Energy. While this re-versioning provides a corollary revenue stream to better leverage our core handbook asset, it does more than simply re-package existing content. Each chapter will be significantly updated and expanded by more than 50%, and all new introductory and summary chapters will be added to contextualize and tie the volume together. Therefore, unlike traditional derivative volumes, we will be able to offer new and updated material to the market and include this largely original content in our ScienceDirect Energy

collection. Due to the inherently multi-disciplinary nature of renewables, many engineers come from backgrounds in Physics, Materials, or Chemical Engineering, and therefore do not have experience working in-depth with electronics. As more and more alternative and distributed energy systems require grid hook-ups and on-site storage, a working knowledge of batteries, inverters and other power electronics components becomes requisite. Further, as renewables enjoy broadening commercial implementation, power electronics professionals are interested to learn of the challenges and strategies particular to applications in alternative energy. This book will bring each group up-to-speed with the primary issues of importance at this technological node. This content clarifies the juncture of two key coverage areas for our Energy portfolio: alternative sources and power systems. It serves to bridge the information in our power engineering and renewable energy lists, supporting the growing grid cluster in the former and adding key information on practical implementation to the latter. Provides a thorough overview of the key technologies, methods and challenges for implementing power electronics in alternative energy systems for optimal power generation Includes hard-to-find information on how to apply converters, inverters, batteries, controllers and more for stand-alone and grid-connected systems Covers wind and solar applications, as well as ocean and geothermal energy, hybrid systems and fuel cells

ICICCT 2019 - System Reliability, Quality Control, Safety, Maintenance and Management - Vinit Kumar Gunjan 2019-06-27

This book discusses reliability applications for power systems, renewable energy and smart grids and highlights trends in reliable communication, fault-tolerant systems, VLSI system design and embedded systems. Further, it includes chapters on software reliability and other computer engineering and software management-related disciplines, and also examines areas such as big data analytics and ubiquitous computing. Outlining novel, innovative concepts in applied areas of reliability in electrical, electronics and computer engineering disciplines, it is a valuable resource for researchers and practitioners of reliability theory in circuit-based engineering domains.

Microhydro - Scott Davis 2003-07-01

Highly illustrated and practical, Microhydro is the first complete book on the topic in many years. Covering both AC and DC systems, it first introduces the important principles on which microhydro is based, including the advantages and disadvantages of using small amounts of water to generate power. Along with a glossary of microhydro terms, further reading and resources - including websites and commercial suppliers - Microhydro includes all the information a homeowner needs to start generating clean, off-grid, and independent power.

Climate Change - Gordon James MacDonald 1992

Smart Electrical Grid System - Krishan Arora 2022-07-01

Smart technologies, such as artificial intelligence and machine learning, play a vital role in modeling, analysis, performance prediction, effective control, and utilization of smart energy systems. This book presents novel concepts in the development of smart cities and smart grids as well as discusses the technologies involved in producing efficient and economically feasible energy technologies around the world. It comprehensively covers important topics, including optimization methods for smart grids, power converters, smart meters, load frequency control, automatic generation control, and power electronics for

smart grids. This book focuses mainly on three areas of electrical engineering: control systems, power electronics, and renewable resources, including artificial intelligence for the development of smart electrical grids. Key Features • Clarifies how the smart grid plays an important role in modern smart technologies • Introduces the basic concepts of modernization of smart grid with the assumption of basic knowledge of mathematics and power systems • Describes the structure of technologies based on Internet of Things (IoT), which acts like a bridge to cover the gap between the physical and virtual worlds required for the realization of the smart grid • Includes practical examples of the smart grid and energy saving • Illustrates the integration of renewable energy sources with worked examples • Enables readers to engage with the immediate development of power systems by using smart approaches for future smart grids

Routledge Handbook of Energy in Asia - Subhes C. Bhattacharyya 2017-10-12

The Routledge Handbook of Energy in Asia presents a comprehensive review of the unprecedented growth of Asian energy over the past quarter of a century. It provides insightful analysis into variation across the continent, whilst highlighting areas of cross-learning and regional cooperation between the developed and developing countries of Asia. Prepared by a team of leading international experts, this book not only captures the East Asian domination, particularly that of China, but also highlights the growing influence of South Asia and the ASEAN. Organised into four parts, the sections include: the demand for energy in the region and its main drivers at the sector level; developments in energy supply, including fossil fuels and renewable energy sources; energy policies and issues such as sector reform and climate change; the transition to a low carbon pathway. This handbook offers a complete picture of Asian energy, covering supply and demand, as well as contemporary challenges in the sector. As such, it is a valuable resource for students and scholars of energy policy, Environmental Studies, and Asian Studies.

Latest Trends in Renewable Energy Technologies - Shelly Vadhera 2021-07-01

This book presents select proceedings of the National Conference on Renewable Energy and Sustainable Environment (NCRESE 2020) and examines a range of reliable energy-efficient harvesting technologies, their applications and utilization of available alternate energy resources. The topics covered include alternate energy technologies, smart grid topologies and their relevant issues, solar thermal and bio-energy systems, electric vehicles and energy storage systems and its control issues. The book also discusses various properties and performance attributes of advance renewable energy techniques and impact on environmental sustainability. The book will be useful for researchers and professionals working in the areas of energy and sustainable environment and the allied fields.

GB/T-2018, GB-2018 -- Chinese National Standard PDF-English, Catalog (year 2018) -

<https://www.chinesestandard.net> 2020-06-06

This document provides the comprehensive list of Chinese National Standards - Category: GB, GB/T Series of year 2018.

Intelligent Computing Techniques for Smart Energy Systems - Akhtar Kalam 2019-12-16

The book compiles the research works related to smart solutions concept in context to smart energy systems, maintaining electrical grid discipline and resiliency, computational collective intelligence consisted of interaction between smart devices, smart environments and smart interactions, as well as information technology support for such areas. It includes high-quality papers presented in the International Conference on Intelligent Computing Techniques for Smart Energy Systems organized by Manipal University Jaipur. This book will motivate scholars to work in these areas. The book also prophesies their approach to be used for the business and the humanitarian technology development as research proposal to various government organizations for funding approval.

Small-Scale Hydro-Power - Watt Committee on Energy Publications 2003-09-02

Annotation This E. & F. N. Spon title is now distributed by Routledge in the US and Canada This title available in eBook format. Click here for more information . Visit our eBookstore at:

www.ebookstore.tandf.co.uk .

Mastering The Machine - Ian Smillie 2019-04-02

'Mastering the Machine Revisited' is about the connection between poverty, aid and technology. It is about a search that has been going on, officially in the developing world for over forty years, and less officially in most countries since the beginning of time. It is a search driven today by more hard core poverty than has

ever been known, and by

Planning and Installing Micro-Hydro Systems - Chris Elliott 2014-04-16

An essential addition to the Earthscan Planning & Installing series, Planning and Installing Micro-Hydro Systems provides vital diagrams, pictures and tables detailing the planning and installing of a micro-hydro system, including information on the maintenance and economics once an installation is running. The book covers subjects such as measuring head and flow, ecological impacts, scheme layouts, practical advice, calculations and turbine choice. Archimedes screws are also covered in detail, as well as the main conventional choices relevant to small sites. Micro-hydro refers to hydropower systems with a power rating of 100kW or less. A 100kW system will produce 100 standard units of electricity in one hour. These systems have been popular in some sparsely populated or mountainous countries for a number of years, but now new technology, less stringent regulation of grid connected generators and standardised turbine designs are encouraging more widespread interest in micro-hydro in the developed world. The renewable energy sector is growing at a remarkable rate, and whilst much attention has so far focused on solar and wind technologies, Europe and elsewhere have great potential for generating power from small scale hydroelectric installations. This book is aimed at site owners, designers and consultants who are looking to develop schemes in the micro-hydro scale - 5 to 100kW - although the concepts are applicable to smaller and larger schemes.

Proceedings of the Seminar on Environment Friendly Ellectric Power Generation -

Journal of Humanitarian Engineering -

The Journal of Humanitarian Engineering publishes outcomes of research and field experiences at the intersection of technology and community development. The field of 'humanitarian engineering' describes the application of engineering and technology for the benefit of disadvantaged communities. This field spans thematic areas from water to energy to infrastructure; and applications from disability access to poverty alleviation. The JHE aims to highlight the importance of humanitarian engineering projects and to inspire engineering solutions to solve the world's most pertinent challenges.

Technological Change - International Labour Office 1985

First International Conference, Renewable Energy, 6-8 October 2004, New Delhi, India - 2004

Contributed articles presented at the Conference.

Renewable Energy from Small & Micro Hydro Projects - Shambhu Ratan Awasthi 2021-03-24

Energy production and utilization are directly associated with climate change. Harnessing energy from renewables can provide a viable path towards achieving sustainability and reducing carbon footprints, which can help mitigate the harmful effects of climate change. India is endowed with substantial hydropower potential. Under this light, Renewable Energy from Small & Micro Hydro Projects: practical aspects & case studies introduces the process of developing hydropower projects, especially in Indian context. The role of hydroelectric power, as part of water management, in combating climate change also forms the subject matter of this book. Selection of suitable sites, hydro turbines, electrical systems, transportation, and salient features of dam and reservoir operation are discussed. Cost estimation, feasibility studies, promotional policies of the government, and other organizations involved in hydropower also form the subject matter of the title. The publication also covers the basics of fluid mechanics along with an overview of the hydropower development in India and the world. The book is supplemented with statistical data relevant to development and operation of hydropower projects which makes the text an authentic read. It will be a useful guide and reference to students, designers, planners, consultants, and field engineers engaged in hydro energy sector.

Handbook Of Renewable Energy Technology - Zobia Ahmed F 2011-01-26

Effects of environmental, economic, social, political and technical factors have led to the rapid deployment of various sources of renewable energy-based power generation. The incorporation of these generation technologies have led to the development of a broad array of new methods and tools to integrate this new form of generation into the power system network. This book, arranged into six sections, highlights various renewable energy based generation technologies, and consists a series of papers written by experts in their

respective fields of specialization. The Handbook of Renewable Energy Technology will be of great practical benefit to professionals, scientists and researchers in the relevant industries, and will be of interest to those of the general public wanting to know more about renewable energy technologies.

Logging & Sawmilling Journal - 1984

Renewable Energy Engineering and Technology - V. V. N. Kishore 2010-01-01

Renewable Energy Engineering and Technology: Principles and Practice - covers major renewable energy resources and technologies for various applications. The book is conceived as a standard reference book for students, experts, and policy-makers. It has been designed to meet the needs of these diverse groups. While covering the basics of scientific and engineering principles of thermal engineering, heat and mass transfer, fluid dynamics, and renewable energy resource assessments, the book further deals with the basics of applied technologies and design practices for following renewable energy resources.- Solar (thermal and photovoltaic)- Wind - Bio-energy including liquid biofuels and municipal solid waste- Other renewables such as tidal, wave, and geothermal. The book is designed to fulfil the much-awaited need for a handy, scientific, and easy-to-understand comprehensive handbook for design professionals and students of renewable energy engineering courses. Besides the sheer breadth of the topics covered, what makes this well-researched book different from earlier attempts is the fact that this is based on extensive practical experiences of the editor and the authors. Thus, a lot of emphasis has been placed on system sizing and integration. Ample solved examples using data for India make this book a relevant and an authentic reference.

Smart and Intelligent Systems - Subhojit Dawn 2021-08-30

This book is a collection of high-quality research papers presented at the International Conference on Smart and Intelligent Systems (SIS 2021), which will be held in Velagapudi Ramakrishna Siddhartha Engineering College (VRSEC), Andhra Pradesh, India, during February 25-26, 2021, in virtual mode. It highlights how recent informatics intelligent systems have successfully been used to develop innovative smart techniques and infrastructure in the field of modern engineering and technology. The book will also be of interest to those working in the field of computational intelligence, smart computer network and security analysis, control and automation system, cloud computing, fog computing and IoT, smart grid communication, smart cities, solar cell synthesis and their performance, green technology, and many more. The contents of this book prove useful to researchers and professionals.

Appropriate Technology in Civil Engineering - Institution of Civil Engineers (Great Britain) 1981

Energy, Resources and Environment - S.W. Yuan 2013-10-22

Energy, Resources and Environment documents the first U.S.-China Conference and discusses the concerns about the world's energy situation, such as its resource, environmental effects, and possible alternative sources. The book is comprised of 72 chapters including the keynote address, five lecture papers, and 66 technical papers that are organized according to its contents, specifically the type of energy it discusses. The text begins with the keynote address, and then discusses the plenary and technical papers. The plenary papers discuss the importance of energy, resources, environment, and future development. The technical papers cover the technological advancement of alternative energy source and their application. The conference covers the following theme: chemical fuels, coal energy, electric power systems, energy conservation, geothermal and other natural energy, hydropower, ice storage for cooling, solar energy, wind energy, economic aspect of energy utilization, and impact of energy on the environment. The book will be of great interest to individuals concerned with the development of alternative energy sources. Researchers whose work involves alternative energy will be able to make use of this book as a reference material.

Motors as Generators for Micro-hydro Power - Nigel Smith 1994

A guide to the use of induction motors for electricity generation in remote locations. It is written as a practical handbook for engineers and technicians involved in designing and installing small water-power schemes for isolated houses and communities. This manual arose out of practical experience of manufacturers and installers of induction generator units working in village locations in a number of countries.

Renewable Energy Review Journal - 1985

Hydroelectric Energy - Bikash Pandey 2016-11-17

Providing essential theory and useful practical techniques for implementing hydroelectric projects, this book outlines the resources, power generation technologies, applications, and strengths and weaknesses for hydroelectric technologies. Emphasizing the links between energy and the environment, it serves as a useful background resource and facilitates decision-making regarding which renewable energy technology works best for different types of applications and regions. Including examples, real-world case studies, and lessons learned, each chapter contains exercise questions, references, and ample photographs and technical drawings from actual micro hydropower plants.

Chinese Standard. GB; GB/T; GBT; JB; JB/T; YY; HJ; NB; HG; QC; SL; SN; SH; JJF; JJG; CJ; TB; YD; YS; NY; FZ; JG; QB; SJ; SY; DL; AQ; CB; GY; JC; JR; JT - <https://www.chinesestandard.net> 2018-01-01

This document provides the comprehensive list of Chinese National Standards and Industry Standards (Total 17,000 standards).

Serious Microhydro - Scott Davis 2010-10-12

From water to wire--harnessing the energy of running water.

Energy Access, Poverty, and Development - Benjamin K. Sovacool 2016-04-29

This book showcases how small-scale renewable energy technologies such as solar panels, cookstoves, biogas digesters, microhydro units, and wind turbines are helping Asia respond to a daunting set of energy governance challenges. Using extensive original research this book offers a compendium of the most interesting renewable energy case studies over the last ten years from one of the most diverse regions in the world. Through an in-depth exploration of case studies in Bangladesh, China, India, Laos, Indonesia, Malaysia, Mongolia, Nepal, Papua New Guinea, and Sri Lanka, the authors highlight the applicability of different approaches and technologies and illuminates how household and commercial innovations occur (or fail to occur) within particular energy governance regimes. It also, uniquely, explores successful case studies alongside failures or "worst practice" examples that are often just as revealing as those that met their targets. Based on these successes and failures, the book presents twelve salient lessons for policymakers and practitioners wishing to expand energy access and raise standards of living in some of the world's poorest communities. It also develops an innovative framework consisting of 42 distinct factors that explain why some energy development interventions accomplish all of their goals while others languish to achieve any.

Information Technology and Systems - Álvaro Rocha 2020-01-30

This book is composed by the papers accepted for presentation and discussion at The 2019 International Conference on Information Technology & Systems (ICITS'20), held at the Universidad Distrital Francisco José de Caldas, in Bogotá, Colombia, on 5th to 7th February 2020. ICIST is a global forum for researchers and practitioners to present and discuss recent findings and innovations, current trends, professional experiences and challenges of modern information technology and systems research, together with their technological development and applications. The main topics covered are: information and knowledge management; organizational models and information systems; software and systems modelling; software systems, architectures, applications and tools; multimedia systems and applications; computer networks, mobility and pervasive systems; intelligent and decision support systems; big data analytics and applications; human-computer interaction; ethics, computers & security; health informatics; information technologies in education.

Regional Cooperation and Environmental Issues in Northeast Asia - Chalmers A. Johnson 1992

Waterpower '79 - 1980

Energy Poverty - Antoine Halff 2014

An edited volume on energy poverty. Nearly one quarter of humanity still lacks access to electricity. Close to one third rely on traditional fuels like firewood and cow dung for cooking, at great cost to their health and welfare. The chapters explain the scope of the problem and suggest practical ways to fix it.

Micro Perspectives for Decentralized Energy Supply : Proceedings of the International Conference (2015, Bangalore) - Kebir, Noara 2015-04-13

Der Tagungsband enthält die wissenschaftlichen Beiträge der Konferenz "Mikro-Perspektiven auf dezentrale Energieversorgung" vom 23. bis 24.4.2015 in Bangalore, Indien. Die Beiträge umfassen eine große Bandbreite an Themen von technischen Herausforderungen dezentraler Energieversorgung über Konzepte für DC Micro Grids bis zu Finanzierungs- und Geschäftsmodellen für die Implementierung dieser innovativen Technologien. Weiterhin enthält der Band Beiträge zu Planungs- und Governance-Strategien, historische Analysen der Infrastrukturentwicklung und Technologie-Bewertung. Mit Fallstudien zu dezentraler Energieversorgung von Indien, Bangladesch, Ägypten, Äthiopien, Kenia, Nigeria, Tansanie und Brasilien geben die Artikel einen guten Überblick über die globale Entwicklung in diesem Sektor. The Proceedings present the scientific contributions of the Conference "Micro Perspectives for Decentralized Energy Supply" from 23rd till 24th of April in Bangalore, India. The papers cover a broad range of topics ranging from technical challenges of decentralized energy supply and concepts for solar DC micro grids till financing and business models for the implementation of those innovative technologies. The volume also contains contributions about planning and governance strategies, historical analyses of the infrastructural development and technology assessments. With case studies on decentralised energy supply from e.g. India, Bangladesh, Egypt, Ethiopia, Kenya, Nigeria, Tanzania and Brazil the papers give a good overview of the development of this sector all over the world.

Microgrid: Operation, Control, Monitoring and Protection - Papia Ray 2020-01-24

This book discusses various challenges and solutions in the fields of operation, control, design, monitoring

and protection of microgrids, and facilitates the integration of renewable energy and distribution systems through localization of generation, storage and consumption. It covers five major topics relating to microgrid i.e., operation, control, design, monitoring and protection. The book is primarily intended for electric power and control engineering researchers who are seeking factual information, but also appeals to professionals from other engineering disciplines wanting an overview of the entire field or specific information on one aspect of it. Featuring practical case studies and demonstrating different root causes of large power failures, it helps readers develop new concepts for mitigating blackout issues. This book is a comprehensive reference resource for graduate and postgraduate students, academic researchers, and practicing engineers working in the fields of power system and microgrid.

Artificial Intelligence and Industrial Applications - Tawfik Masrour 2020-07-18

This book gathers selected papers from Artificial Intelligence and Industrial Applications (A2IA'2020), the first installment of an annual international conference organized by ENSAM-Meknes at Moulay Ismail University, Morocco. The 29 papers presented here were carefully reviewed and selected from 141 submissions by an international scientific committee. They address various aspects of artificial intelligence such as digital twin, multiagent systems, deep learning, image processing and analysis, control, prediction, modeling, optimization and design, as well as AI applications in industry, health, energy, agriculture, and education. The book is intended for AI experts, offering them a valuable overview and global outlook for the future, and highlights a wealth of innovative ideas and recent, important advances in AI applications, both of a foundational and practical nature. It will also appeal to non-experts who are curious about this timely and important subject.