

## November 2011 Power Machines N6 Marking Guideline

Power quality is a very broad subject, covering all stages of power systems engineering, from the generation, transmission, and distribution levels to the end-users. This book contains a selection of the best papers on power quality presented at the International Conferences on Renewable Energy and Power Quality from 2003 to 2012. The volume represents a unique selection of the best contributions to power quality exploitation and evolution over the past decade. As such, it provides an up-to-date reference point for researchers, technicians and engineering interested in the state of the field of power quality. This book will primarily interest professional engineers and researchers dealing with power quality, but will also prove useful to postgraduate level students. It can also be used as a reference book for engineers, physicists and mathematicians interested and involved in operation, project management, design, and analysis of power quality issues. Each chapter contains references that allow the treated topic to be further deepened.

The job interview is probably the most important step you will take in your job search journey. Because it's always important to be prepared to respond effectively to the questions that employers typically ask at a job interview Petrogav International has prepared this eBooks that will help you to get a job in oil and gas industry. Since these questions are so common, hiring managers will expect you to be able to answer them smoothly and without hesitation. This eBook contains 200 questions and answers for job interview and as a BONUS web addresses to 200 video movies for a better understanding of the technological process. This course covers aspects like HSE, Process, Mechanical, Electrical and Instrumentation & Control that will enable you to apply for any position in the Oil and Gas Industry.

High voltage engineering is extremely important for the reliable design, safe manufacture and operation of electric devices, equipment and electric power systems. The 21st International Symposium on High Voltage Engineering, organized by the 90 years old Budapest School of High Voltage Engineering, provides an excellent forum to present results, advances and discussions among engineers, researchers and scientists, and share ideas, knowledge and expertise on high voltage engineering. The proceedings of the conference presents the state of the art technology of the field. The content is simultaneously aiming to help practicing engineers to be able to implement based on the papers and researchers to link and further develop ideas.

Presents applied theory and advanced simulation techniques for electric machines and drives This book combines the knowledge of experts from both academia and the software industry to present theories of multiphysics simulation by design for electrical machines, power electronics, and drives. The comprehensive design approach described within supports new applications required by technologies sustaining high drive efficiency. The highlighted framework considers the electric machine at the heart of the entire electric drive. The book also emphasizes the simulation by design concept—a concept that frames the entire highlighted design methodology, which is described and illustrated by various advanced simulation technologies. Multiphysics Simulation by Design for Electrical Machines, Power Electronics and Drives begins with the basics of electrical machine design and manufacturing tolerances. It also discusses fundamental aspects of the state of the art design process and includes examples from industrial practice. It explains FEM-based analysis techniques for electrical machine design—providing details on how it can be employed in ANSYS Maxwell software. In addition, the book covers advanced magnetic material modeling capabilities employed in numerical computation; thermal analysis; automated optimization for electric machines; and power electronics and drive systems. This valuable resource: Delivers the multi-physics know-how based on practical electric machine design methodologies Provides an extensive overview of electric machine design optimization and its integration with power electronics and drives Incorporates case studies from industrial practice and research and development projects Multiphysics Simulation by Design for Electrical Machines, Power Electronics and Drives is an incredibly helpful book for design engineers, application and system engineers, and technical professionals. It will also benefit graduate engineering students with a strong interest in electric machines and drives.

The book helps readers understand key concepts in standalone and grid connected wind energy systems and features analysis into the modeling and optimization of commonly used configurations through the implementation of different control strategies. Utilizing several electrical machinery control approaches, such as vector control and direct torque control 'Wind Power Electric Systems' equips readers with the means to understand, assess and develop their own wind energy systems and to evaluate the performance of such systems. Mathematical models are provided for each system and a corresponding MATLAB/SIMULINK example is included at the end of each section in order to demonstrate key processes and methods.

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This book is a printed edition of the Special Issue "Emerging Technologies for Electric and Hybrid Vehicles" that was published in energies

This book offers you a brief, but very involved look into the operations in the drilling of an oil & gas wells that will help you to be prepared for job interview at oil & gas companies. From start to finish, you'll see a general prognosis of the drilling process. If you are new to the oil & gas industry, you'll enjoy having a leg up with the knowledge of these processes. If you are a seasoned oil & gas person, you'll enjoy reading what you may or may not know in these pages. This course

provides a non-technical overview of the phases, operations and terminology used on offshore drilling platforms. It is intended also for non-drilling personnel who work in the offshore drilling, exploration and production industry. This includes marine and logistics personnel, accounting, administrative and support staff, environmental professionals, etc. No prior experience or knowledge of drilling operations is required. This course will provide participants a better understanding of the issues faced in all aspects of drilling operations, with a particular focus on the unique aspects of offshore operations.

Today, there is a great deal of attention focused on sustainable growth worldwide. The increase in efficiency in the use of energy may even, in this historical moment, bring greater benefit than the use of renewable energies. Electricity appears to be the most sustainable of energies and the most promising hope for a planet capable of growing without compromising its own health and that of its inhabitants. Power electronics and electrical drives are the key technologies that will allow energy savings through the reduction of energy losses in many applications. This Special Issue has collected several scientific contributions related to energy efficiency in electrical equipment. Some articles are dedicated to the use and optimization of permanent magnet motors, which allow obtaining the highest level of efficiency. Most of the contributions describe the energy improvements that can be achieved with power electronics and the use of suitable control techniques. Last but not least, some articles describe interesting solutions for hybrid vehicles, which were created mainly to save energy in the smartest way possible.

JOB INTERVIEW Offshore Oil & Gas Platforms Petrogav International

With the growing interest in electrical machines in recent times, the multiphase machine field has developed into a fascinating research area. Their intrinsic features (power splitting, better fault tolerance, or lower torque ripple) make them an appealing competitor to conventional three-phase machines. Multiphase electric drives have been recently used in applications where fault tolerance and continuous operation of the drive are required. However, the difficulties in extending the three-phase conventional current regulation and control structure to multiphase systems still limit their broad applicability in industry solutions. The main objective of this book is to illustrate new advances, developments, and applications in the field of multiphase machines and drives, while exposing these advances, developments, and applications to the scientific community and industry.

This ground-breaking study, the first of its kind, outlines a theory of publishing that allows publishing houses to focus on their core competencies in times of crisis. Tracing the history of publishing from the press works of fifteenth-century Germany to twenty-first-century Silicon Valley, via Venice, Beijing, Paris and London, and fusing media theory and business experience, 'The Content Machine' offers a new understanding of content, publishing and technology, and defiantly answers those who contend that publishing has no future in a digital age.

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Groundbreaking exposé of the rapid shift to robot warfare, by a leading antiwar activist. Drone Warfare is the first comprehensive analysis of one of the fastest growing—and most secretive—fronts in global conflict: the rise of robot warfare. In 2000, the Pentagon had fewer than fifty aerial drones; ten years later, it had a fleet of nearly 7,500, and the US Air Force now trains more drone "pilots" than bomber and fighter pilots combined. Drones are already a \$5 billion business in the US alone. The human cost? Drone strikes have killed more than 200 children alone in Pakistan and Yemen. CODEPINK and Global Exchange cofounder Medea Benjamin provides the first extensive analysis of who is producing the drones, where they are being used, who controls these unmanned planes, and what are the legal and moral implications of their use. In vivid, readable style, this book also looks at what activists, lawyers, and scientists across the globe are doing to ground these weapons. Benjamin argues that the assassinations we are carrying out from the air will come back to haunt us when others start doing the same thing—to us.

Power Quality in Power Systems and Electrical Machines, Second Edition helps readers understand the causes and effects of power quality problems and provides techniques to mitigate these problems. Power quality is a measure of deviations in supply systems and their components, and affects all connected electrical and electronic equipment, including computers, TV monitors, and lighting. In this book analytical and measuring techniques are applied to power quality problems as they occur in central power stations and distributed generation such as alternative power systems. Provides theoretical and practical insight into power quality problems; most books available are either geared to theory or practice only Problems and solutions at the end of each chapter dealing with practical applications Includes application examples implemented in SPICE, Mathematica, and MATLAB

This carefully crafted ebook is formatted for your eReader with a functional and detailed table of contents. The sixth season of the fantasy drama television series Game of Thrones premiered on HBO on April 24, 2016, and concluded on June 26, 2016. It consists of ten episodes, each of approximately 50–60 minutes, largely of original content not found in George R. R. Martin's A Song of Ice and Fire series. Some material is adapted from the upcoming sixth novel The Winds of Winter and the fourth and fifth novels, A Feast for Crows and A Dance with Dragons. The series was adapted for television by David Benioff and D. B. Weiss. HBO ordered the season on April 8, 2014, together with the fifth season, which began filming in July 2015 primarily in Northern Ireland, Spain, Croatia, Iceland and Canada. Each episode cost over \$10 million. This book has been derived from Wikipedia: it contains the entire text of the title Wikipedia article + the

entire text of all the 593 related (linked) Wikipedia articles to the title article. This book does not contain illustrations. e-Pedia (an imprint of e-artnow) charges for the convenience service of formatting these e-books for your eReader. We donate a part of our net income after taxes to the Wikimedia Foundation from the sales of all books based on Wikipedia content.

Reviews state-of-the-art technologies in modern heuristic optimization techniques and presents case studies showing how they have been applied in complex power and energy systems problems. Written by a team of international experts, this book describes the use of metaheuristic applications in the analysis and design of electric power systems. This includes a discussion of optimum energy and commitment of generation (nonrenewable & renewable) and load resources during day-to-day operations and control activities in regulated and competitive market structures, along with transmission and distribution systems. Applications of Modern Heuristic Optimization Methods in Power and Energy Systems begins with an introduction and overview of applications in power and energy systems before moving on to planning and operation, control, and distribution. Further chapters cover the integration of renewable energy and the smart grid and electricity markets. The book finishes with final conclusions drawn by the editors. Applications of Modern Heuristic Optimization Methods in Power and Energy Systems: Explains the application of differential evolution in electric power systems' active power multi-objective optimal dispatch Includes studies of optimization and stability in load frequency control in modern power systems Describes optimal compliance of reactive power requirements in near-shore wind power plants Features contributions from noted experts in the field Ideal for power and energy systems designers, planners, operators, and consultants, Applications of Modern Heuristic Optimization Methods in Power and Energy Systems will also benefit engineers, software developers, researchers, academics, and students.

The character of modern power systems is changing rapidly and inverters are taking over a considerable part of the energy generation. A future purely inverter-based grid could be a viable solution, if its technical feasibility can be first validated. The focus of this work lies on inverter dominated microgrids, which are also mentioned as 'hybrid' in several instances throughout the thesis. Hybrid, as far as the energy input of each generator is concerned. Conventional fossil fuel based generators are connected in parallel to renewable energy sources as well as battery systems. The main contributions of this work comprise of: The analysis of detailed models and control structures of grid inverters, synchronous generators and battery packs and the utilization of these models to formulate control strategies for distributed generators. The developed strategies accomplish objectives in a wide time scale, from maintaining stability during faults and synchronization transients as well as optimizing load flow through communication-free distributed control. Die Struktur der modernen Energieversorgung hat sich in den letzten Jahrzehnten massiv geändert. Dezentrale Generatoren, die auf Wechselrichtern basieren, übernehmen einen großen Teil der Energieerzeugung. Ein ausschließlich wechselrichterbasiertes Netz wäre ein realistischer Ansatz, wenn seine technische Machbarkeit verifiziert werden könnte. Die wichtigsten Beiträge dieser Arbeit sind: Die Analyse von Modellen und Regelstrukturen von Netzwechselrichtern, Synchrongeneratoren und Batterieanlagen. Die entwickelten Modelle werden verwendet, um Regelstrategien für dezentrale Generatoren in Mittelspannungsinselnetzen zu formulieren. Die erste Strategie ist eine Synchronisationsmethode für netzbildende Wechselrichter. Zweitens wird die Leistungsaufteilung in Mittelspannungsinselnetzen mittels Droop Regelung analysiert. Weiterhin erfolgt die Untersuchung der transienten Lastaufteilung zwischen netzbildenden Einheiten mit unterschiedlichen Zeitkonstanten. Beim Betrieb mehrerer paralleler Wechselrichter wird der Einfluss der Netzimpedanz auf die transiente Lastaufteilung analysiert. Die dritte entworfene Regelstrategie umfasst die Integration der Sekundärregelung in die Primärregelung. Der Ladezustand von Batterien wird mit der Lastaufteilung gekoppelt, um die Autonomie des Netzes zu stärken. Abschließend wird eine Kurzschlussstrategie für netzbildende und netzspeisende Wechselrichter entwickelt. Ziel der Strategie ist die Maximierung des Kurzschlussstromes. Als zusätzliche Randbedingung soll keine Kommunikation zwischen Generatoren stattfinden.

This Special Issue deals with improvements in the energy efficiency of electric devices, machines, and drives, which are achieved through improvements in the design, modelling, control, and operation of the system. Properly sized and placed coils of a welding transformer can reduce the required iron core size and improve the efficiency of the welding system operation. New structures of the single-phase field excited flux switching machine improve its performance in terms of torque, while having higher back-EMF and unbalanced electromagnetic forces. A properly designed rotor notch reduces the torque ripple and cogging torque of interior permanent magnet motors for the drive platform of electric vehicles, resulting in lower vibrations and noise. In the field of modelling, the torque estimation of a Halbach array surface permanent magnet motor with a non-overlapping winding layout was improved by introducing an analytical two-dimensional subdomain model. A general method for determining the magnetically nonlinear two-axis dynamic models of rotary and linear synchronous reluctance machines and synchronous permanent magnet machines is introduced that considers the effects of slotting, mutual interaction between the slots and permanent magnets, saturation, cross saturation, and end effects. Advanced modern control solutions, such as neural network-based model reference adaptive control, fuzzy control, senseless control, torque/speed tracking control derived from the 3D non-holonomic integrator, including drift terms, maximum torque per ampere, and maximum efficiency characteristics, are applied to improve drive performance and overall system operation.

Nowadays, environmental issues motivates the replacement of mechanical, hydraulic and pneumatic system by electrical system in the transport sector aiming to reduce emissions generated by burning of fossil fuels in vehicles. The electrical system must ensure high electrical efficiency and should not exceed the weight of the substituted components. To attend these high performance requirements a fault-tolerant multiphase brushless DC machine was chosen for this research. The present work introduces a six-phase 600W brushless DC machine with 8 poles. The main challenge for the control issues of this machine is the mutual magnetic coupling between the phases due to the wave winding machine configuration. In this context, theoretical and practical investigations of different current control strategies based on the sliding mode control approach applied to the six-phase brushless DC machine are presented.

Renewable energy systems are playing an important role in the current discourse on energy security and sustainability. Scientific, engineering and economic solutions are adopted, and there is a constant effort to understand mechanisms and options to allow a faster penetration of renewable systems in the current energy mix and energy market. Readers of this book will have access to information, engineering design and economic solutions for harvesting local and regional energy potential by means of solar, wind, hydro resources. It will

enable graduate students, researchers, promoters of sustainable energy technologies, consulting engineering experts, knowledgeable public to understand the solutions, methods, techniques suitable for different phases of design and implementation of a large selection of renewable energy technologies, and to identify their sustainability in application and policy.

This book is an advanced approach to power electronics specifically in terms of renewable energy systems and smart grid. The fourteen chapters are updated and extended versions of the invited papers in the Proc. IEEE special issue of November 2017, contributed by a group of invited authors who are international authorities in their field. The application-oriented chapters are tutorial oriented, with technology status review. The book also includes examples of applications and discussions of future perspectives.

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An insightful treatment of present and emerging technologies in fault diagnosis and failure prognosis In Fault Diagnosis, Prognosis, and Reliability for Electrical Machines and Drives, a team of distinguished researchers delivers a comprehensive exploration of current and emerging approaches to fault diagnosis and failure prognosis of electrical machines and drives. The authors begin with foundational background, describing the physics of failure, the motor and drive designs and components that affect failure and signals, signal processing, and analysis. The book then moves on to describe the features of these signals and the methods commonly used to extract these features to diagnose the health of a motor or drive, as well as the methods used to identify the state of health and differentiate between possible faults or their severity. Fault Diagnosis, Prognosis, and Reliability for Electrical Machines and Drives discusses the tools used to recognize trends towards failure and the estimation of remaining useful life. It addresses the relationships between fault diagnosis, failure prognosis, and fault mitigation. The book also provides: A thorough introduction to the modes of failure, how early failure precursors manifest themselves in signals, and how features extracted from these signals are processed A comprehensive exploration of the fault diagnosis, the results of characterization, and how they used to predict the time of failure and the confidence interval associated with it A focus on medium-sized drives, including induction, permanent magnet AC, reluctance, and new machine and drive types Perfect for researchers and students who wish to study or practice in the rea of electrical machines and drives, Fault Diagnosis, Prognosis, and Reliability for Electrical Machines and Drives is also an indispensable resource for researchers with a background in signal processing or statistics.

This updated edition of the industry standard reference on power system frequency control provides practical, systematic and flexible algorithms for regulating load frequency, offering new solutions to the technical challenges introduced by the escalating role of distributed generation and renewable energy sources in smart electric grids. The author emphasizes the physical constraints and practical engineering issues related to frequency in a deregulated environment, while fostering a conceptual understanding of frequency regulation and robust control techniques. The resulting control strategies bridge the gap between advantageous robust controls and traditional power system design, and are supplemented by real-time simulations. The impacts of low inertia and damping effect on system frequency in the presence of increased distributed and renewable penetration are given particular consideration, as the bulk synchronous machines of conventional frequency control are rendered ineffective in emerging grid environments where distributed/variable units with little or no rotating mass become dominant. Frequency stability and control issues relevant to the exciting new field of microgrids are also undertaken in this new edition. As frequency control becomes increasingly significant in the design of ever-more complex power systems, this expert guide ensures engineers are prepared to deploy smart grids with optimal functionality.

In recent years, power electronics have been intensely contributing to the development and evolution of new structures for the processing of energy. They can be used in a wide range of applications ranging from power systems and electrical machines to electric vehicles and robot arm drives. In conjunction with the evolution of microprocessors and advanced control theories, power electronics are playing an increasingly essential role in our society. Thus, in order to cope with the obstacles lying ahead, this book presents a collection of original studies and modeling methods which were developed and published in the field of electrical energy conditioning and control by using circuits and electronic devices, with an emphasis on power applications and industrial control. Researchers have contributed 19 selected and peer-reviewed papers covering a wide range of topics by addressing a wide variety of themes, such as motor drives, AC–DC and DC–DC converters, multilevel converters, varistors, and electromagnetic compatibility, among others. The overall result is a book that represents a cohesive collection of inter-/multidisciplinary works regarding the industrial applications of power electronics.

Understanding Business Global Edition by Nickels, McHugh, and McHugh has been the number one textbook in the introduction to business market for several editions for three reasons: (1) The commitment and dedication of an author team that teaches this course and believes in the importance and power of this learning experience, (2) we listen to our customers, and (3) the quality of our supplements package. We consistently look to the experts – full-time faculty members, adjunct instructors, and of course students – to drive the decisions we make about the text itself and the ancillary package. Through focus groups, symposia, as well as extensive reviewing of both text and key ancillaries, we have heard the stories of more than 600 professors and their insights and experiences are evident on every page of the revision and in every supplement. As teachers of the course and users of their own materials, the author team is dedicated to the principles of excellence in business education. From providing the richest most current topical coverage to using dynamic pedagogy that puts students in touch with today's real business issues, to creating groundbreaking and market-defining ancillary items for professors and students alike, Understanding Business leads the way.

This book constitutes the refereed proceedings of the 10th International Conference on Evolutionary Multi-Criterion Optimization, EMO 2019 held in East Lansing, MI, USA, in March 2019. The 59 revised full papers were carefully reviewed and selected from 76 submissions. The papers are divided into 8 categories, each representing a key area of current interest in the EMO field today. They include theoretical developments, algorithmic developments, issues in many-objective optimization, performance metrics, knowledge extraction and surrogate-based EMO, multi-objective combinatorial problem solving, MCDM and interactive EMO methods, and applications.

Impedance Source Power Electronic Converters brings together state of the art knowledge and cutting edge techniques in various stages of research related to the ever more popular impedance source converters/inverters. Significant research efforts are underway to develop commercially viable and technically feasible, efficient and reliable power converters for renewable energy, electric transportation and for various industrial applications. This book provides a detailed understanding of the concepts, designs, controls, and application demonstrations of the impedance source converters/inverters. Key features: Comprehensive analysis of the impedance source converter/inverter topologies, including typical topologies and derived topologies. Fully explains the design and control techniques of impedance source converters/inverters, including hardware design and control parameter design for corresponding control methods. Presents the latest power conversion solutions that aim to advance the role of power electronics into industries and sustainable energy conversion systems. Compares impedance source converter/inverter applications in renewable energy power generation and electric vehicles as well as different industrial applications. Provides an overview of existing challenges, solutions and future trends. Supported by calculation examples, simulation models and results. Highly accessible, this is an invaluable resource for researchers, postgraduate/graduate students

studying power electronics and its application in industry and renewable energy conversion as well as practising R&D engineers. Readers will be able to apply the presented material for the future design of the next generation of efficient power electronic converters/inverters.

Unifying Electrical Engineering and Electronics Engineering is based on the Proceedings of the 2012 International Conference on Electrical and Electronics Engineering (ICEE 2012). This book collects the peer reviewed papers presented at the conference. The aim of the conference is to unify the two areas of Electrical and Electronics Engineering. The book examines trends and techniques in the field as well as theories and applications. The editors have chosen to include the following topics; biotechnology, power engineering, superconductivity circuits, antennas technology, system architectures and telecommunication.

Microgrids are a growing segment of the energy industry, representing a paradigm shift from centralized structures toward more localized, autonomous, dynamic, and bi-directional energy networks, especially in cities and communities. The ability to isolate from the larger grid makes microgrids resilient, while their capability of forming scalable energy clusters permits the delivery of services that make the grid more sustainable and competitive. Through an optimal design and management process, microgrids could also provide efficient, low-cost, clean energy and help to improve the operation and stability of regional energy systems. This book covers these promising and dynamic areas of research and development and gathers contributions on different aspects of microgrids in an aim to impart higher degrees of sustainability and resilience to energy systems.

This book presents select peer-reviewed proceedings of the International Conference on Frontiers in Smart Systems Technologies (ICFSSST 2019). It focuses on latest research and cutting-edge technologies in smart systems and intelligent autonomous systems with advanced functionality. Comprising topics related to diverse aspects of smart technologies such as high security, reliability, miniaturization, energy consumption, and intelligent data processing, the book contains contributions from academics as well as industry. Given the range of the topics covered, this book will prove useful for students, researchers, and professionals alike.

What Is Autonomous Drone An autonomous drone can conduct a safe flight without the intervention of a pilot. It does so with the help of artificial intelligence, and many other emerging technologies, enabling it to cope with all kinds of unforeseen and unpredictable emergency situations. How You Will Benefit - Answering the public top 100 questions about autonomous drones with insight, validation, and creativity. - Real world examples for the usage of drones in 38 industries and 21 corporations. - Glossary with 187 terms serves as a complete list of essential drone terms for pilots, professionals, and enthusiasts. - 17 appendices to briefly explain 266 emerging technology in each industry to have 360-degree full understanding of drones' technologies. Who This Book Is For Professionals, undergraduate and graduate students, enthusiasts, hobbyists, and those who want to go beyond basic knowledge or information for any kind of drone.

This book includes original research papers related to renewable energy and power systems in which theoretical or practical issues of symmetry are considered. The book includes contributions on voltage stability analysis in DC networks, optimal dispatch of islanded microgrid systems, reactive power compensation, direct power compensation, optimal location and sizing of photovoltaic sources in DC networks, layout of parabolic trough solar collectors, topologic analysis of high-voltage transmission grids, geometric algebra and power systems, filter design for harmonic current compensation. The contributions included in this book describe the state of the art in this field and shed light on the possibilities that the study of symmetry has in power grids and renewable energy systems.

Due to a huge concentration of electromagnetic fields and eddy currents, large power equipment and systems are prone to crushing forces, overheating, and overloading. Luckily, power failures due to disturbances like these can be predicted and/or prevented. Based on the success of internationally acclaimed computer programs, such as the authors' own RNM-3D, Engineering Electrodynamics: Electric Machine, Transformer, and Power Equipment Design explains how to implement industry-proven modeling and design techniques to solve complex electromagnetic phenomena. Considering recent progress in magnetic and superconducting materials as well as modern methods of mechatronics and computer science, this theory- and application-driven book: Analyzes materials structure and 3D fields, taking into account magnetic and thermal nonlinearities Supplies necessary physical insight for the creation of electromagnetic and electromechanical high power equipment models Describes parameters for electromagnetic calculation of the structural parts of transformers, electric machines, apparatuses, and other electrical equipment Covers power frequency 50-60 Hz (worldwide and US) equipment applications Includes examples, case studies, and homework problems Engineering Electrodynamics: Electric Machine, Transformer, and Power Equipment Design provides engineers, students, and academia with a thorough understanding of the physics, principles, modeling, and design of contemporary industrial devices.

This two-volume set LNAI 7523 and LNAI 7524 constitutes the refereed proceedings of the European Conference on Machine Learning and Knowledge Discovery in Databases: ECML PKDD 2012, held in Bristol, UK, in September 2012. The 105 revised research papers presented together with 5 invited talks were carefully reviewed and selected from 443 submissions. The final sections of the proceedings are devoted to Demo and Nectar papers. The Demo track includes 10 papers (from 19 submissions) and the Nectar track includes 4 papers (from 14 submissions). The papers grouped in topical sections on association rules and frequent patterns; Bayesian learning and graphical models; classification; dimensionality reduction, feature selection and extraction; distance-based methods and kernels; ensemble methods; graph and tree mining; large-scale, distributed and parallel mining and learning; multi-relational mining and learning; multi-task learning; natural language processing; online learning and data streams; privacy and security; rankings and recommendations; reinforcement learning and planning; rule mining and subgroup discovery; semi-supervised and transductive learning; sensor data; sequence and string mining; social network mining; spatial and geographical data mining; statistical methods and evaluation; time series and temporal data mining; and transfer learning.

This book is a printed edition of the Special Issue "Control of Energy Storage" that was published in Energies

This book provides a comprehensive view of green communications considering all areas of ICT including wireless and wired networks. It analyses particular concepts and practices, addressing holistic approaches in future networks considering a system perspective. It makes full use of tables, illustrations, performance graphs, case studies and examples making it accessible for a wide audience.

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Important factor in political decision-making is a public opinion as well. Therefore, it is very important to raise global ecological awareness and wider public education regarding ecology. Goal of this book is to bring closer to the readers new drive technologies that are intended to environment and nature protection. The book presents modern technique achievements and technologies applied in the implementation of electric vehicles. Special attention was paid to energy

efficiency of EV's. Also today's trends, mathematical models and computer design elements of future cars are presented. This book focuses on sustainable energy systems. While several innovative and alternative concepts are presented, the topics of energy policy, life cycle assessment, thermal energy, and renewable energy also play a major role. Models on various temporal and geographical scales are developed to understand the conditions of technical as well as organizational change. New methods of modeling, which can fulfil technical and physical boundary conditions and nevertheless consider economic environmental and social aspects, are also developed.

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