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[A Course In Power Systems](#) - J. B. Gupta 2009

Electrical Power Systems - Debapriya Das 2007-12

This book will give readers a thorough understanding of the fundamentals of power system analysis and their applications. Both the basic and advanced topics have been thoroughly explained and supported through several solved examples. Important Features of the Book: Load Flow and Optimal System Operation have been discussed in detail. Automatic Generation Control (AGC) of Isolated and Interconnected Power Systems have been discussed and explained clearly. AGC in Restructured Environment of Power System has been Introduced. Sag and Tension Analysis have been discussed in detail. Contains over 150 illustrative examples, practice problems and objective-type questions, that will assist the reader. With all these features, this is an indispensable text for graduate and postgraduate electrical engineering students. GATE, AMIE and UPSC engineering services along with practicing engineers would also find this book extremely useful

Comprehensive Dictionary of Electrical Engineering - Phillip A. Laplante 1999-01-01

Complete coverage of all fields of electrical engineering. The book

provides workable definitions for practicing engineers, while serving as a reference and research tool for students, and offering practical information for scientists and engineers in other disciplines. Areas examined include applied electrical, microwave, control, power, and digital systems engineering, plus device electronics.

POWER PLANT ENGINEERING - MANOJ KUMAR GUPTA 2012-06-12

This textbook has been designed for a one-semester course on Power Plant Engineering studied by both degree and diploma students of mechanical and electrical engineering. It effectively exposes the students to the basics of power generation involved in several energy conversion systems so that they gain comprehensive knowledge of the operation of various types of power plants in use today. After a brief introduction to energy fundamentals including the environmental impacts of power generation, the book acquaints the students with the working principles, design and operation of five conventional power plant systems, namely thermal, nuclear, hydroelectric, diesel and gas turbine. The economic factors of power generation with regard to estimation and prediction of load, plant design, plant operation, tariffs and so on, are discussed and illustrated with the help of several solved numerical problems. The generation of electric power using renewable energy sources such as solar, wind, biomass, geothermal, tidal, fuel cells, magneto

hydrodynamic, thermoelectric and thermionic systems, is discussed elaborately. The book is interspersed with solved problems for a sound understanding of the various aspects of power plant engineering. The chapter-end questions are intended to provide the students with a thorough reinforcement of the concepts discussed.

Power System Analysis - John Grainger 1994

This updated edition includes: coverage of power-system estimation, including current developments in the field; discussion of system control, which is a key topic covering economic factors of line losses and penalty factors; and new problems and examples throughout.

Handbook of Electrical Design Details - Neil Sclater 2003-05-21

A COMPREHENSIVE SOURCE OF TECHNICAL DETAILS ON ELECTRICAL POWER FROM GENERATION TO PRACTICAL APPLICATIONS Reliable, low-cost electric power is a fundamental requirement for modern society, making possible such vital services as lighting, HVAC, transportation, communication, and data processing, in addition to driving motors of all sizes. A mainstay of industrial productivity and economic prosperity, it is also essential for safeguarding human life and health. This handbook is a valuable information resource on electric power for everyone from technical professionals to students and laypeople. This compact, user-friendly edition updates and expands on the earlier edition. Its core content of power generation, distribution, lighting, wiring, motors, and project planning has been supplemented by new topics: * CAD for preparing electrical drawings and estimates * Basic switch and receptacle circuit wiring * Structured wiring for multimedia * Swimming pool and low-voltage lighting * Electrical surge protection An easy-to-read style makes complex topics understandable. It's a must-have reference for those with a need or desire to get up to speed on the entire subject of electric power or just familiarize themselves with the latest advances--regardless of their formal education or training. Reader-helpful features in this edition include: * Up-front chapter summaries to save time in finding topics of interest. * References to related articles in the National Electrical Code. * A bibliography identifying additional sources for digging deeper. * Approximately 300

illustrations

Anti-Tech Revolution - Theodore Kaczynski 2020-03-16

"There are many people today who see that modern society is heading toward disaster in one form or another, and who moreover recognize technology as the common thread linking the principal dangers that hang over us... The purpose of this book is to show people how to begin thinking in practical, grand-strategic terms about what must be done in order to get our society off the road to destruction that it is now on." -- from the Preface In *Anti-Tech Revolution: Why and How*, Kaczynski argues why the rational prediction and control of the development of society is impossible while expounding on the existence of a process fundamental to technological growth that inevitably leads to disaster: a universal process akin to biological natural selection operating autonomously on all dynamic systems and determining the long-term outcome of all significant social developments. Taking a highly logical, fact-based, and intellectually rigorous approach, Kaczynski seamlessly systematizes a vast breadth of knowledge and elegantly reconciles the social sciences with biology to illustrate how technological growth in and of itself necessarily leads to disastrous disruption of global biological systems. Together with this new understanding of social and biological change, and by way of an extensive examination of the dynamics of social movements, Kaczynski argues why there is only one route available to avoid the disaster that technological growth entails: a revolution against technology and industrial society. Through critical and comprehensive analysis of the principles of social revolutions and by carefully developing an exacting theory of successful revolution, Kaczynski offers a practical, rational, and realistic guide for preventing the fast-approaching technology-induced catastrophe. This new second edition (2020) contains various updates and improvements over the first edition (2016), including two new appendices.

Power System Analysis - Hadi Saadat 2009-04-01

This is an introduction to power system analysis and design. The text contains fundamental concepts and modern topics with applications to real-world problems, and integrates MATLAB and SIMULINK

throughout.

Magnificent Delusions - Husain Haqqani 2013-11-05

The relationship between America and Pakistan is based on mutual incomprehension and always has been. Pakistan—to American eyes—has gone from being a quirky irrelevance, to a stabilizing friend, to an essential military ally, to a seedbed of terror. America—to Pakistani eyes—has been a guarantee of security, a coldly distant scold, an enthusiastic military enabler, and is now a threat to national security and a source of humiliation. The countries are not merely at odds. Each believes it can play the other—with sometimes absurd, sometimes tragic, results. The conventional narrative about the war in Afghanistan, for instance, has revolved around the Soviet invasion in 1979. But President Jimmy Carter signed the first authorization to help the Pakistani-backed mujahedeen covertly on July 3—almost six months before the Soviets invaded. Americans were told, and like to believe, that what followed was Charlie Wilson's war of Afghani liberation, with which they remain embroiled to this day. It was not. It was General Zia-ul-Haq's vicious regional power play. Husain Haqqani has a unique insight into Pakistan, his homeland, and America, where he was ambassador and is now a professor at Boston University. His life has mapped the relationship of the two countries and he has found himself often close to the heart of it, sometimes in very confrontational circumstances, and this has allowed him to write the story of a misbegotten diplomatic love affair, here memorably laid bare.

Electrical Power Systems - Ashfaq Husain 1994

Power System Protection and Switchgear - Badri Ram 2011

The functioning of a power system depends significantly on efficient and reliable protection schemes. With enhanced course coverage and refreshed pedagogy, this revised edition of *Power System Protection and Switchgear* discusses the contemporary protection system, now infused with new and innovative technology.

The Future of Pakistan - Stephen P. Cohen 2011-10-01

With each passing day, Pakistan becomes an even more crucial player in

world affairs. Home of the world's second-largest Muslim population, epicenter of the global jihad, location of perhaps the planet's most dangerous borderlands, and armed with nuclear weapons, this South Asian nation will go a long way toward determining what the world looks like ten years from now. *The Future of Pakistan* presents and evaluates several scenarios for how the country will develop, evolve, and act in the near future, as well as the geopolitical implications of each. Led by renowned South Asia expert Stephen P. Cohen, a team of authoritative contributors looks at several pieces of the Pakistan puzzle. The book begins with Cohen's broad yet detailed overview of Pakistan, placing it within the context of current-day geopolitics and international economics. Cohen's piece is then followed by a number of shorter, more tightly focused essays addressing more specific issues of concern. Cohen's fellow contributors hail from America, Europe, India, and Pakistan itself, giving the book a uniquely international and comparative perspective. They address critical factors such as the role and impact of radical groups and militants, developments in specific key regions such as Punjab and the rugged frontier with Afghanistan, and the influence of—and interactions with—India, Pakistan's archrival since birth. The book also breaks down relations with other international powers such as China and the United States. The all-important military and internal security apparatus come under scrutiny, as do rapidly morphing social and gender issues. Political and party developments are examined along with the often amorphous division of power between Islamabad and the nation's regions and local powers. Uncertainty about Pakistan's trajectory persists. *The Future of Pakistan* helps us understand the current circumstances, the relevant actors and their motivation, the critical issues at hand, the different outcomes they might produce, and what it all means for Pakistanis, Indians, the United States, and the entire world. Praise for the work of Stephen P. Cohen: "The intellectual power and rare insight with which Cohen breaks through the complexity of the subject rivals that of classics that have explained other societies posing a comparable challenge to understanding."— *Middle East Journal* India: Emerging Power: "In light

of the events of September 11, 2001, Cohen's perceptive, insightful, and balanced account of emergent India will be essential reading for U.S. foreign policymakers, scholars, and informed citizens."— Choice
Power System Engineering - D. P. Kothari 2007

Enlarged and revised chapter 1 on introduction to Power System Analysis New chapters on Voltage Stability Underground Cables Insulators for Overhead Lines Mechanical Design of Transmission Lines Neutral Grounding Corona High Voltage DC (HVDC) Transmisson.

Power System Analysis: Operation And Control 3Rd Ed. - Abhijit Chakrabarti 2010-01-30

This comprehensive book is designed both for postgraduate students in power systems/energy systems engineering and a one-year course for senior undergraduate students of electrical engineering pursuing courses on power systems. The text gives a systematic exposition of topics such as modelling of power system components, load flow, automatic load frequency control, economic operation, voltage control and stability, study of faulted power systems, and optimal power flow. Besides giving a detailed discussion on the basic principles and practices, the text provides computer-based examples to illustrate the topics discussed. What makes the text unique is that it deals with the practice of computer for power system operation and control. This book also brings together the diverse aspects of power system operation and control and is a practical hands-on guide to theoretical developments and to the application of advanced methods in solving operational and control problems of electric power systems. The book should therefore be of immense benefit to the industry professionals and researchers as well.

Building Construction Handbook - Roy Chudley 2016-04-14

Ideal for students on all construction courses Topics presented concisely in plain language and with clear drawings Updated to include revisions to Building and Construction regulations The Building Construction Handbook is THE authoritative reference for all construction students and professionals. Its detailed drawings clearly illustrate the construction of building elements, and have been an invaluable guide for builders since 1988. The principles and processes of construction are

explained with the concepts of design included where appropriate. Extensive coverage of building construction practice, techniques, and regulations representing both traditional procedures and modern developments are included to provide the most comprehensive and easy to understand guide to building construction. This new edition has been updated to reflect recent changes to the building regulations, as well as new material on the latest technologies used in domestic construction. Building Construction Handbook is the essential, easy-to-use resource for undergraduate and vocational students on a wide range of courses including NVQ and BTEC National, through to Higher National Certificate and Diploma, to Foundation and three-year Degree level. It is also a useful practical reference for building designers, contractors and others engaged in the construction industry.

Basic Electrical Engineering - Mehta V.K. & Mehta Rohit 2008

For close to 30 years, [Basic Electrical Engineering] has been the go-to text for students of Electrical Engineering. Emphasis on concepts and clear mathematical derivations, simple language coupled with systematic development of the subject aided by illustrations makes this text a fundamental read on the subject. Divided into 17 chapters, the book covers all the major topics such as DC Circuits, Units of Work, Power and Energy, Magnetic Circuits, fundamentals of AC Circuits and Electrical Instruments and Electrical Measurements in a straightforward manner for students to understand.

Elasticity - Martin H. Sadd 2010-08-04

Although there are several books in print dealing with elasticity, many focus on specialized topics such as mathematical foundations, anisotropic materials, two-dimensional problems, thermoelasticity, non-linear theory, etc. As such they are not appropriate candidates for a general textbook. This book provides a concise and organized presentation and development of general theory of elasticity. This text is an excellent book teaching guide. Contains exercises for student engagement as well as the integration and use of MATLAB Software Provides development of common solution methodologies and a systematic review of analytical solutions useful in applications of

Electrical Power System - Ashfaq Husain 1982

Power System Operation and Control - Sivanagaraju, S.

Power System Operation and Control is comprehensively designed for undergraduate and postgraduate courses in electrical engineering. This book aims to meet the requirements of electrical engineering students and is useful for practicing engineers.

Networks and Systems - Ashfaq Husain 2015

This book is intended to serve as a textbook for BE., B. Tech, students of Electrical, Electronics, Computer, Instrumentation, Control and communication Engineering. It will also serve as a text reference for the students of diploma in Engineering. AMIE, GATE, UPSC Engineering services, IAS candidate would also find the book extremely useful.

Subject matter in each chapter developed systematically from first principles. Written in a very simple language. Simple and clear explanation of concepts. Large number of carefully selected worked examples. Most simplified methods used. Step-by-step procedures given for solving problems. Ideally suited for self-study.

Mumbai Avengers - S. Hussain Zaidi 2015-02-27

Five years after 26/11 - the siege of terror in Mumbai that brought the country to its knees - India still seeks justice. The terrorists who planned it have disappeared into the darkness they emerged from and Mumbai seethes with fury. All the Indian government has achieved is the establishment of counter-terrorism committees. But one man will stop at nothing in his quest to avenge the dastardly act. Retired Lt Gen. Sayed Ali Waris of the Indian army masterminds a covert mission with a team of daredevil agents: a sharp policeman, a suave tech expert, a cerebral scientist and two battle-hardened army officers. They strike like lightning even as they are pursued by the Pakistani army and the ISI, combing through every land and possibility in pursuit of the deadly killers. From Sweden to Istanbul, through Dubai, Pakistan and Singapore, they annihilate the perpetrators with single-minded focus, veiling the deaths as natural ones to save the Indian government diplomatic and political embarrassment. The stakes have never been higher. This is a nifty, edge-

of-your seat thriller with an intricate plot and jaw-dropping twists. As Waris and his team navigate untold dangers towards a nail-biting climax, will Mumbai finally be avenged?

Advanced Engineering Mathematics with MATLAB - Dean G. Duffy
2022-01-03

In the four previous editions the author presented a text firmly grounded in the mathematics that engineers and scientists must understand and know how to use. Tapping into decades of teaching at the US Navy Academy and the US Military Academy and serving for twenty-five years at (NASA) Goddard Space Flight, he combines a teaching and practical experience that is rare among authors of advanced engineering mathematics books. This edition offers a smaller, easier to read, and useful version of this classic textbook. While competing textbooks continue to grow, the book presents a slimmer, more concise option. Instructors and students alike are rejecting the encyclopedic tome with its higher and higher price aimed at undergraduates. To assist in the choice of topics included in this new edition, the author reviewed the syllabi of various engineering mathematics courses that are taught at a wide variety of schools. Due to time constraints an instructor can select perhaps three to four topics from the book, the most likely being ordinary differential equations, Laplace transforms, Fourier series and separation of variables to solve the wave, heat, or Laplace's equation. Laplace transforms are occasionally replaced by linear algebra or vector calculus. Sturm-Liouville problem and special functions (Legendre and Bessel functions) are included for completeness. Topics such as z-transforms and complex variables are now offered in a companion book, *Advanced Engineering Mathematics: A Second Course* by the same author. MATLAB is still employed to reinforce the concepts that are taught. Of course, this Edition continues to offer a wealth of examples and applications from the scientific and engineering literature, a highlight of previous editions. Worked solutions are given in the back of the book.

ELECTRICAL POWER SYSTEMS - P. VENKATESH 2012-04-03

This textbook introduces electrical engineering students to the most

relevant concepts and techniques in three major areas today in power system engineering, namely analysis, security and deregulation. The book carefully integrates theory and practical applications. It emphasizes power flow analysis, details analysis problems in systems with fault conditions, and discusses transient stability problems as well. In addition, students can acquire software development skills in MATLAB and in the usage of state-of-the-art software tools such as Power World Simulator (PWS) and Siemens PSS/E. In any energy management/operations control centre, the knowledge of contingency analysis, state estimation and optimal power flow is of utmost importance. Part 2 of the book provides comprehensive coverage of these topics. The key issues in electricity deregulation and restructuring of power systems such as Transmission Pricing, Available Transfer Capability (ATC), and pricing methods in the context of Indian scenario are discussed in detail in Part 3 of the book. The book is interspersed with problems for a sound understanding of various aspects of power systems. The questions at the end of each chapter are provided to reinforce the knowledge of students as well as prepare them from the examination point of view. The book will be useful to both the undergraduate students of electrical engineering and postgraduate students of power engineering and power management in several courses such as Power System Analysis, Electricity Deregulation, Power System Security, Restructured Power Systems, as well as laboratory courses in Power System Simulation.

Electric Power Transmission and Distribution - S. Sivanagaraju 2008-09
Electric Power Transmission and Distribution is a comprehensive text, designed for undergraduate courses in power systems and transmission and distribution. A part of the electrical engineering curriculum, this book is designed to meet the requirements of students taking elementary courses in electric power transmission and distribution. Written in a simple, easy-to-understand manner, this book introduces the reader to electrical, mechanical and economic aspects of the design and construction of electric power transmission and distribution systems.

Engineering Optimization - Xin-She Yang 2010-07-20

An accessible introduction to metaheuristics and optimization, featuring powerful and modern algorithms for application across engineering and the sciences. From engineering and computer science to economics and management science, optimization is a core component for problem solving. Highlighting the latest developments that have evolved in recent years, *Engineering Optimization: An Introduction with Metaheuristic Applications* outlines popular metaheuristic algorithms and equips readers with the skills needed to apply these techniques to their own optimization problems. With insightful examples from various fields of study, the author highlights key concepts and techniques for the successful application of commonly-used metaheuristic algorithms, including simulated annealing, particle swarm optimization, harmony search, and genetic algorithms. The author introduces all major metaheuristic algorithms and their applications in optimization through a presentation that is organized into three succinct parts: *Foundations of Optimization and Algorithms* provides a brief introduction to the underlying nature of optimization and the common approaches to optimization problems, random number generation, the Monte Carlo method, and the Markov chain Monte Carlo method. *Metaheuristic Algorithms* presents common metaheuristic algorithms in detail, including genetic algorithms, simulated annealing, ant algorithms, bee algorithms, particle swarm optimization, firefly algorithms, and harmony search. *Applications* outlines a wide range of applications that use metaheuristic algorithms to solve challenging optimization problems with detailed implementation while also introducing various modifications used for multi-objective optimization. Throughout the book, the author presents worked-out examples and real-world applications that illustrate the modern relevance of the topic. A detailed appendix features important and popular algorithms using MATLAB® and Octave software packages, and a related FTP site houses MATLAB code and programs for easy implementation of the discussed techniques. In addition, references to the current literature enable readers to investigate individual algorithms and methods in greater detail. *Engineering Optimization: An Introduction with Metaheuristic Applications* is an excellent book for

courses on optimization and computer simulation at the upper-undergraduate and graduate levels. It is also a valuable reference for researchers and practitioners working in the fields of mathematics, engineering, computer science, operations research, and management science who use metaheuristic algorithms to solve problems in their everyday work.

System-on-a-chip - Rochit Rajsuman 2000

Starting with a basic overview of system-on-a-chip (SoC), including definitions of related terms, this new book helps you understand SoC design challenges, and the latest design and test methodologies. You see how ASIC technology evolved to an embedded cores-based concept that includes pre-designed, reusable Intellectual Property (IP) cores that act as microprocessors, data storage devices, DSP, bus control, and interfaces -- all "stitched" together by a User's Defined Logic (UDL).

Classical and Quantum Dynamics in Condensed Phase Simulations

- Bruce J Berne 1998-06-17

The school held at Villa Marigola, Lerici, Italy, in July 1997 was very much an educational experiment aimed not just at teaching a new generation of students the latest developments in computer simulation methods and theory, but also at bringing together researchers from the condensed matter computer simulation community, the biophysical chemistry community and the quantum dynamics community to confront the shared problem: the development of methods to treat the dynamics of quantum condensed phase systems. This volume collects the lectures delivered there. Due to the focus of the school, the contributions divide along natural lines into two broad groups: (1) the most sophisticated forms of the art of computer simulation, including biased phase space sampling schemes, methods which address the multiplicity of time scales in condensed phase problems, and static equilibrium methods for treating quantum systems; (2) the contributions on quantum dynamics, including methods for mixing quantum and classical dynamics in condensed phase simulations and methods capable of treating all degrees of freedom quantum-mechanically. Contents:Barrier Crossing: Classical Theory of Rare but Important Events (D Chandler)Monte Carlo

Simulations (D Frenkel)Molecular Dynamics Methods for the Enhanced Sampling of Phase Space (B J Berne)Constrained and Nonequilibrium Molecular Dynamics (G Ciccotti & M Ferrario)From Eyring to Kramers: Computation of Diffusive Barrier Crossing Rates (M J Ruiz-Montero)Monte Carlo Methods for Sampling of Rare Event States (W Janke)Proton Transfer in Ice (D Marx)Nudged Elastic Band Method for Finding Minimum Energy Paths of Transitions (H Jónsson et al.)RAW Quantum Transition State Theory (G Mills et al.)Dynamics of Peptide Folding (R Elber et al.)Theoretical Studies of Activated Processes in Biological Ion Channels (B Roux & S Crouzy)The Semiclassical Initial Value Representation for Including Quantum Effects in Molecular Dynamics Simulations (W H Miller)Tunneling in the Condensed Phase: Barrier Crossing and Dynamical Control (N Makri)Feynman Path Centroid Methods for Condensed Phase Quantum Dynamics (G A Voth)Quantum Molecular Dynamics Using Wigner Representation (V S Filinov et al.)Nonadiabatic Molecular Dynamics Methods for Diffusion (D Laria et al.)and other papers Readership: Computational and statistical physicists. Keywords:Quantum;Molecular Dynamics;DynamicsReviews: "... this volume is a useful introduction to currently popular, and widely-used techniques in chemical and statistical physics. The authors are well-respected researchers in the field and the level is appropriate to graduate students and researchers." Journal of Statistical Physics

Generation of Electrical Energy, 7th Edition - Gupta B.R. 2017

Generation of Electrical Energy is written primarily for the undergraduate students of electrical engineering while also covering the syllabus of AMIE and act as a refresher for the professionals in the field. The subject itself is now rejuvenated with important new developments. With this in view, the book covers conventional topics like load curves, steam generation, hydro-generation parallel operation as well as new topics like new sources of energy generation, hydrothermal coordination, static reserve reliability evaluation among others.

Electrical Power Systems - C. L. Wadhwa 2009

About the Book: Electrical power system together with Generation, Distribution and utilization of Electrical Energy by the same author cover

almost six to seven courses offered by various universities under Electrical and Electronics Engineering curriculum. Also, this combination has proved highly successful for writing competitive examinations viz. UPSC, NTPC, National Power Grid, NHPC, etc.

Digital Signal Processing - Sanjit Kumar Mitra 2006-01

Digital Signal Processing: A Computer-Based Approach is intended for a two-semester course on digital signal processing for seniors or first-year graduate students. Based on user feedback, a number of new topics have been added to the third edition, while some excess topics from the second edition have been removed. The author has taken great care to organize the chapters more logically by reordering the sections within chapters. More worked-out examples have also been included. The book contains more than 500 problems and 150 MATLAB exercises. New topics in the third edition include: short-time characterization of discrete-time signals, expanded coverage of discrete-time Fourier transform and discrete Fourier transform, prime factor algorithm for DFT computation, sliding DFT, zoom FFT, chirp Fourier transform, expanded coverage of z-transform, group delay equalization of IIR digital filters, design of computationally efficient FIR digital filters, semi-symbolic analysis of digital filter structures, spline interpolation, spectral factorization, discrete wavelet transform.

Basic Electricity - Van Valkenburgh, Nooger & Neville 1954

Electrical Power Systems, 5e (PB) - Ashfaq Husain 2009-02-01

Electrical Engineering Principles - Ashfaq Husain 1987

Principles of Power System - VK Mehta & Rohit Mehta 2005

The subject of power systems has assumed considerable importance in recent years and growing demand for a compact work has resulted in this book. A new chapter has been added on Neutral Grounding.

Transmission and Distribution of Power (WBSCTE) - K.R.

Siddhapura & D.B. Raval

This book provides knowledge of transmission and distribution of electric

power, which is very essential for an electrical engineer. The language used is simple and maintains a smooth flow so that the students are able to imbibe the concepts and intricacies easily. Thus, it is truly studentfriendly. KEY FEATURES • Written strictly in accordance with the syllabus of West Bengal State Council of Technical Education • Covers all the topics related to power systems • Explains concepts through technically accurate diagrams for full clarity • Contains large number of solved examples • Shows comparison between similar topics to prevent confusion

Fundamentals of Power System Protection - Paithankar Y. G. 2010

Electric and Hybrid Vehicles - Iqbal Husain 2021-02-22

A thoroughly revised third edition of this widely praised, bestselling textbook presents a comprehensive systems-level perspective of electric and hybrid vehicles with emphasis on technical aspects, mathematical relationships and basic design guidelines. The emerging technologies of electric vehicles require the dedication of current and future engineers, so the target audience for the book is the young professionals and students in engineering eager to learn about the area. The book is concise and clear, its mathematics are kept to a necessary minimum and it contains a well-balanced set of contents of the complex technology. Engineers of multiple disciplines can either get a broader overview or explore in depth a particular aspect of electric or hybrid vehicles. Additions in the third edition include simulation-based design analysis of electric and hybrid vehicles and their powertrain components, particularly that of traction inverters, electric machines and motor drives. The technology trends to incorporate wide bandgap power electronics and reduced rare-earth permanent magnet electric machines in the powertrain components have been highlighted. Charging stations are a critical component for the electric vehicle infrastructure, and hence, a chapter on vehicle interactions with the power grid has been added. Autonomous driving is another emerging technology, and a chapter is included describing the autonomous driving system architecture and the hardware and software needs for such systems. The

platform has been set in this book for system-level simulations to develop models using various softwares used in academia and industry, such as MATLAB®/Simulink, PLECS, PSIM, Motor-CAD and Altair Flux.

Examples and simulation results are provided in this edition using these software tools. The third edition is a timely revision and contribution to the field of electric vehicles that has reached recently notable markets in a more and more environmentally sensitive world.

Principles of Electrical Machines - VK Mehta | Rohit Mehta 2008

For over 15 years "Principles of Electrical Machines" is an ideal text for students who look to gain a current and clear understanding of the subject as all theories and concepts are explained with lucidity and clarity. Succinctly divided in 14 chapters, the book delves into important concepts of the subject which include Armature Reaction and Commutation, Single-phase Motors, Three-phase Induction motors, Synchronous Motors, Transformers and Alternators with the help of numerous figures and supporting chapter-end questions for retention.

Transformers and Generators - Uday A. Bakshi 2020-11-01

The importance of transformers and generators is well known in the various engineering fields. The book provides comprehensive coverage of the various types of transformers, d.c. generators and synchronous generators (alternators). The book starts with the brief review of single phase transformer. It continues to discuss no load and on load performance of transformers, phasor diagrams, equivalent circuit, voltage regulation and all day efficiency of transformer. The detailed discussion of open and short circuit tests and predetermination of regulation and efficiency is also included in the book. The chapter on three phase transformer provides the detailed discussion of construction, three phase transformer connections and phasor groups. The book also explains parallel operation of transformers, tap changing transformer, autotransformers, cooling of transformers and three winding transformer. The various testing methods of transformers are also

incorporated in the book. The book covers all the details of d.c. generators including construction, armature reaction, commutation, characteristics and applications. The chapters on synchronous generators starts with the explanation of basics of synchronous generators including construction, winding details, e.m.f. equation and effect of harmonics on induced e.m.f. The book then explains the concept of armature reaction, phasor diagrams, regulation and various methods of finding the regulation of alternator. Stepwise explanation and simple techniques used to elaborate these methods is the feature of this book. The book further explains the concept of synchronization of alternators, two reaction theory and parallel operation of alternators. The book uses plain, lucid language to explain each topic. The book provides the logical method of explaining the various complicated topics and stepwise methods to make the understanding easy. Each chapter is well supported with necessary illustrations, self explanatory diagrams and variety of solved problems. The book explains the philosophy of the subject which makes the understanding of the concepts very clear and makes the subject more interesting.

Smart Agriculture an Approach Towards Better Agriculture Management - Aqeel-ur- Rehman 2015-02-12

This edited book, Smart Agriculture: An Approach towards Better Agriculture Management aims to present utilization of advanced technologies towards the better management of Agriculture requirements. The book is triggered by ubiquitous applications of sensors and actuators, and the real-world challenges and complexities to the Wireless Sensors and Actuator Networks (WSAN) application. Agriculture is a very vast domain. This book is providing coverage of some of the aspects of the agriculture like Introduction to the concept of Smart Agriculture, Automatic Irrigation Management, Water Management, use of advanced technology like GIS towards Agriculture and Agricultural Ontologies to provide semantic understanding for computing devices.