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Electrical Machines - II
Control of Electric Machines
The Management of Electrical Machinery
Electrical Machines-I
Electrical Machines
Electrical Technology, Vol 2
Electrical Machines, Drives, and Power Systems
Control Of Electrical Machines
Design of Rotating Electrical Machines
Handbook of Electric Machines
Electric Machines and Power Systems
Electrical Machines
Lecture Notes for Electrical Machines Course
Electric Machinery
Analysis of Electrical Machines
Electrical Machines - li
Electrical Machines - li
Finite Element Analysis of Electrical Machines
Electrical Machines
Electrical Machines - I
ELECTRICAL MACHINES
Electrical Machines
Electrical Machines and Drives
Analysis of Electrical Machines
Electrical Machines & their Applications
A Textbook Of Electrical Machines

Advancements in Electric Machines
Electrical Machines
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Condition Monitoring of Electrical Machines
Electrical Machines - li (anna)
Principles of Electrical Machines
Electric Machinery Fundamentals
Electric Machines: Theory, Operating Applications, and Controls, 2/e
Electrical Machines
Electrical Machines
Dc Machines And Transformers 2Ed
Induction And Synchronous Machines
Principles Of Electrical Machine Design With Computer Programs, 2/E
A Textbook of Electrical Technology - Volume II

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Electrical Machines - II BoD - Books on Demand

This is a single-volume book on 'electrical machines' that teaches the subject precisely and yet with amazing clarity. The extent has been kept in control so that the entire subject can be covered by students within the limited time of the semesters. Thus, they will not have to consult multiple

books anymore. The discussions of concepts include the modern trends used in industry, like efficient transformers, efficient induction motors, DC drives, and the problems related to them.

Control of Electric Machines S. Chand Publishing

A self-contained, comprehensive and unified treatment of electrical machines, including consideration of their control characteristics in both conventional and semiconductor switched circuits. This new edition has been expanded and updated to include material which reflects current

thinking and practice. All references have been updated to conform to the latest national (BS) and international (IEC) recommendations and a new appendix has been added which deals more fully with the theory of permanent-magnets, recognising the growing importance of permanent-magnet machines. The text is so arranged that selections can be made from it to give a short course for non-specialists, while the book as a whole will prepare students for more advanced studies in power systems, control systems, electrical machine design and general

industrial applications. Includes numerous worked examples and tutorial problems with answers.

The Management of Electrical Machinery

Taylor & Francis Group

Publisher Description

Electrical Machines-I Springer Science & Business Media

This book is devoted to students, PhD students, postgraduates of electrical engineering, researchers, and scientists dealing with the analysis, design, and optimization of electrical machine properties. The purpose is to present methods used for the analysis of transients and steady-state conditions. In three chapters the following methods are presented: (1) a method in which the parameters (resistances and inductances) are calculated on the basis of geometrical dimensions and material properties made in the design process, (2) a method of general theory of electrical machines, in which the transients are investigated in two perpendicular axes, and (3) FEM, which is a mathematical method applied to electrical machines to investigate many of their properties.

Electrical Machines KHANNA PUBLISHING

HOUSE

A multicolor edition of Vol.II of A Textbook of Electrical Technology to keep pace with the ever-increasing scope of essential and modern technical information, the syllabi are frequently revised. This often results in compressing established facts to accommodate recent information in the syllabi. Fields of power-electronics and industrial power-conditioners have grown considerably resulting in changed priority of topics related to electrical machines. Switched reluctance-motors tend to threaten the most popular squirrel-cage induction motors due to their increased ruggedness, better performance including controllability and equal ease with which they suit rotary as well as linear-motion-applications.

Electrical Technology, Vol 2 Technical Publications

This book is written so that it serves as a text book for B.E./B.Tech degree students in general and for the institutions where AICTE model curriculum has been adopted. TOPICS COVERED IN THIS BOOK:- Magnetic field and Magnetic circuit Electromagnetic force and torque D.C. Machines D.C. Machines-Motoring and

Generation SALIENT FEATURES:- Self-contained, self-explanatory and simple to follow text. Numerous worked out examples. Well Explained theory parts with illustrations. Exercises, objective type question with answers at the end of each chapter.

Electrical Machines, Drives, and Power Systems Vikas Publishing House

This book includes my lecture notes for electrical machines course. The book is divided into different learning parts · Part 1- Apply basic physical concepts to explain the operation and solve problems related to electrical machines. · Part 2- Explain the principles underlying the performance of three-phase electrical machines. · Part 3- Analyse, operate and test three-phase induction machines. · Part 4- Investigate the performance, design, operation, and testing of the three-phase synchronous machine. Part1: Apply basic physical concepts to explain the operation and solve problems related to electrical machines. Describe the construction of simple magnetic circuits, both with and without an air gap. Explain the basic laws which govern the electrical machine operation, such as Faraday's Law, Ampere-

Biot-Savart's Law, and Lenz's Law. Apply Faraday's Law of electromagnetic induction, Ampere-Biot-Savart's Law, and Lenz's Law to solve for induced voltage and currents in relation to simple magnetic circuits with movable parts. Illustrate the principle of the electromechanical energy conversion in magnetic circuits with movable parts. Part 2: Explain the principles underlying the performance of three-phase electrical machines. Compare and contrast concentric and distributed windings in three-phase electrical machines. Identify the advantages of distributed windings applied to three-phase machines. Explain how the pulsating and rotating magnetic fields are produced in distributed windings. Calculate the synchronous speed of a machine based on its number of poles and frequency of the supply. Describe the process of torque production in multi-phase machines. Part 3: Analyse, operate and test three-phase induction machines. Calculate the slip of an induction machine given the operating and synchronous speeds. Calculate and compare between different torques of a three-phase induction machine, such as

the locked rotor or starting torque, pull-up torque, breakdown torque, full-load torque or braking torque. Develop and manipulate the equivalent circuit model for the three-phase induction machine. Analyse, and test experimentally, the torque-speed and current-speed characteristics of induction machines. and discuss the effects of varying such motor parameters as rotor resistance, supply voltage and supply frequency on motor torque-speed characteristics. Perform no-load and blocked rotor tests in order to determine the equivalent circuit parameters of an induction machine. Explore various techniques to start an induction motor. Identify the applications of the three-phase induction machines in industry and utility. Classify the insulations implemented in electrical machines windings and identify the factors affecting them. Part4. Investigate the performance, design, operation, and testing of the three-phase synchronous machine. Describe the construction of three-phase synchronous machines, particularly the rotor, stator windings and the rotor saliency. Develop and manipulate an equivalent circuit model for the three-phase synchronous

machine. Sketch the phasor diagram of a non-salient poles synchronous machine operating at various modes operation, such as no-load operation, motor operation, and generator operation. Investigate the influence of the rotor saliency on machine performance. Perform open and short circuit tests in order to determine the equivalent circuit parameters of a synchronous machine. Identify the applications of the three-phase synchronous machines in industry and utility List and explain the conditions of parallel operation of a group of synchronous generators. Evaluate the performance of the synchronous condenser and describe the power flow control between a synchronous condenser and the utility in both modes: over and under excited. Explain the principles of controlling the output voltage and frequency of a synchronous generator. Control Of Electrical Machines Pearson Education India
The importance of various electrical machines is well known in the various engineering fields. The book provides comprehensive coverage of the synchronous generators (alternators),

synchronous motors, three phase and single phase induction motors and various special machines. The book is structured to cover the key aspects of the course Electrical Machines - II. The book starts with the explanation of basics of synchronous generators including construction, winding details and e.m.f. equation. 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 chapter on synchronous motor provides the detailed discussion of construction, working principle, behavior on load, analysis of phasor diagram, Vee and Inverted Vee curves, hunting and applications. The book further explains the three phase induction motors in detail. It includes the construction, working, effect of slip, torque equation, torque ratios, torque-slip characteristics, losses, power flow, equivalent circuit, effect of

harmonics on the performance and applications. This chapter includes the discussion of induction generator and synchronous induction motor. The detailed discussion of circle diagram is also included in the book. The book teaches the various starting methods, speed control methods and electrical braking methods of three phase induction motors. Finally, the book gives the explanation of various single phase induction motors and special machines such as reluctance motor, hysteresis motor, repulsion motor, servomotors and stepper motors. The discussion of magnetic levitation is also incorporated in the book. 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.

Design of Rotating Electrical Machines Dr. Hidaia Mahmood Alassouli

Traditionally, electrical machines are classified into d. c. commutator (brushed) machines, induction (asynchronous) machines and synchronous machines. These three types of electrical machines are still regarded in many academic curricula as fundamental types, despite that d. c. brushed machines (except small machines) have been gradually abandoned and PM brushless machines (PMBM) and switched reluctance machines (SRM) have been in mass production and use for at least two decades. Recently, new topologies of high torque density motors, high speed motors, integrated motor drives and special motors have been developed. Progress in electric machines technology is stimulated by new materials, new areas of applications, impact of power electronics, need for energy saving and new technological challenges. The development of electric machines in the next few years will mostly be stimulated by computer hardware, residential and public applications and transportation systems (land, sea and air). At many Universities teaching and research strategy oriented towards electrical machinery is not up to date and has

not been changed in some countries almost since the end of the WWII. In spite of many excellent academic research achievements, the academia-industry collaboration and technology transfer are underestimated or, quite often, neglected. Underestimation of the role of industry, unfamiliarity with new trends and restraint from technology transfer results, with time, in lack of external financial support and drastic decline in the number of students interested in Power Electrical Engineering.

Handbook of Electric Machines

Technical Publications
Retaining The Student-Friendly Style Of The First Edition, This Unique Text Fills A Gap In The Available Electronics And Computer Technology Texts By Devoting More Time To Current Industrial Requirements. It Presents Ac Machines And Transformers Before Dc Machines, Motors Before Generators, Gives More Attention To Machine Characteristics, And Makes Extensive Use Of Nema Standards And Tables. The Self-Contained Nature Of Each Chapter Gives Instructors Significant Freedom In Course Development.
Electric Machines and Power Systems John

Wiley & Sons

The book gives comprehensive treatment to the principles of electrical machine design. It is concise and up-to-date with special emphasis on the computerised design. It has been prepared specifically for engineering college teachers and students, and practising engineers to enable them to appreciate the salient aspects of electrical machine design with reference to computer applications. Computer programs on small problems written in FORTRAN and C++ language have been added to guide the readers. Contents: Basic Considerations / Heating and Cooling / Main Dimensions / Magnetic Circuit Calculations / Electric Circuit Calculations / Design of Transformer / Design of Rotating Machines / Finite Element Method / Computer Programs in C++ language / Appendices / Index
Electrical Machines Pergamon
Comprehensive, lucid and student-friendly in the true sense, DC Machines and Transformers adopts a self-study approach and is aimed at demystifying the subject for students who consider 'Electric Machines' too tough. This second edition has been thoroughly revised and includes

a summary at the end of each chapter, many short and long answer questions taken from question papers of various universities? over the last 25 years.

Lecture Notes for Electrical Machines

Course New Age International

In one complete volume, this essential reference presents an in-depth overview of the theoretical principles and techniques of electrical machine design. This timely new edition offers up-to-date theory and guidelines for the design of electrical machines, taking into account recent advances in permanent magnet machines as well as synchronous reluctance machines. New coverage includes: Brand new material on the ecological impact of the motors, covering the eco-design principles of rotating electrical machines An expanded section on the design of permanent magnet synchronous machines, now reporting on the design of tooth-coil, high-torque permanent magnet machines and their properties Large updates and new material on synchronous reluctance machines, air-gap inductance, losses in and resistivity of permanent magnets (PM), operating point of loaded PM circuit,

PM machine design, and minimizing the losses in electrical machines> End-of-chapter exercises and new direct design examples with methods and solutions to real design problems> A supplementary website hosts two machine design examples created with MATHCAD: rotor surface magnet permanent magnet machine and squirrel cage induction machine calculations. Also a MATLAB code for optimizing the design of an induction motor is provided Outlining a step-by-step sequence of machine design, this book enables electrical machine designers to design rotating electrical machines. With a thorough treatment of all existing and emerging technologies in the field, it is a useful manual for professionals working in the diagnosis of electrical machines and drives. A rigorous introduction to the theoretical principles and techniques makes the book invaluable to senior electrical engineering students, postgraduates, researchers and university lecturers involved in electrical drives technology and electromechanical energy conversion.

Electric Machinery PHI Learning Pvt. Ltd. Offers key concepts of electrical machines

embedded with solved examples, review questions, illustrations and open book questions.

Analysis of Electrical Machines

Prentice Hall

This book is a sequel to the author's DC Machines & Transformers. Comprehensive, lucid and student-friendly, it adopts a self-study approach and is aimed at demystifying the subject for students who consider 'Electric Machines' too tough. The book covers Induction Machines in 8 chapters and Synchronous Machines in 9 chapters.

Electrical Machines - Ii McGraw-Hill Companies

Electric Machinery Fundamentals continues to be a best-selling machinery text due to its accessible, student-friendly coverage of the important topics in the field. Chapman's clear writing persists in being one of the top features of the book. Although not a book on MATLAB, the use of MATLAB has been enhanced in the fourth edition. Additionally, many new problems have been added and remaining ones modified. Electric Machinery Fundamentals is also accompanied by a website that provides solutions for

instructors, as well as source code, MATLAB tools, and links to important sites for students.

Electrical Machines - Ii Springer Science & Business Media

Electrical Machines primarily covers the basic functionality and the role of electrical machines in their typical applications. The effort of applying coordinate transforms is justified by obtaining a more intuitive, concise and easy-to-use model. In this textbook, mathematics is reduced to a necessary minimum, and priority is given to bringing up the system view and explaining the use and external characteristics of machines on their electrical and mechanical ports. Covering the most relevant concepts relating to machine size, torque and power, the author explains the losses and secondary effects, outlining cases and conditions in which some secondary phenomena are neglected. While the goal of developing and using machine mathematical models, equivalent circuits and mechanical characteristics persists through the book, the focus is kept on physical insight of electromechanical conversion process. Details such as the

slot shape and the disposition of permanent magnets and their effects on the machine parameters and performance are also covered.

Finite Element Analysis of Electrical Machines McGraw-Hill Companies

This book includes my lecture notes for electrical machines course. The book is divided to different learning parts: - Part 1- Apply basic physical concepts to explain the operation and solve problems related to electrical machines. - Part 2- Explain the principles underlying the performance of three-phase electrical machines. - Part 3- Analyse, operate and test three-phase induction machines. - Part 4- Investigate

the performance, design, operation, and testing of the three-phase synchronous machine.

Electrical Machines Pearson Educación
 Electrical Technology: Machines and Measurements is the second volume of the book on Electrical Technology and all undergraduate students of electrical and electronics engineering shall find this indispensable. This book covers electric machines including AC and DC machines, various electrical instruments and measurements. The concepts are clearly explained and are supplemented with relevant examples in every chapter.
Electrical Machines - I Cambridge

University Press

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.

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