

## J B Gupta Power Plant Engineering

This book introduces research presented at the “International Conference on Artificial Intelligence: Advances and Applications-2019 (ICAIAA 2019),” a two-day conference and workshop bringing together leading academicians, researchers as well as students to share their experiences and findings on all aspects of engineering applications of artificial intelligence. The book covers research in the areas of artificial intelligence, machine learning, and deep learning applications in health care, agriculture, business and security. It also includes research in core concepts of computer networks, intelligent system design and deployment, real-time systems, WSN, sensors and sensor nodes, SDN and NFV. As such it is a valuable resource for students, academics and practitioners in industry working on AI applications.

It is gratifying to note that the book has very widespread acceptance by faculty and students throughout the country. In the revised edition some new topics have been added. Additional solved examples have also been added. The data of transmission system in India has been updated.

This book discusses clean coal technology (CCT), the latest generation of coal technology that controls pollutants and performs with improved generating efficiency. CCT involves processes that effectively control emissions and result in highly efficient combustion without significantly contributing to global warming. Basic principles, operational a

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.

The search for clean, renewable energy sources has yielded enormous growth and new developments in these technologies in a few short years, driving down costs and encouraging utilities in many nations, both developed and developing, to add and expand wind and solar power capacity. The first, best-selling edition of Wind and Solar Power Systems prov

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.

Currently, the installed capacity of power generation in India is 104,917 MW and by 2012 another 100,000 MW will be added. With this addition, the requirement of power and distribution transformers will grow enormously, as will the emphasis on quality and performance. The design of a transformer is critical to its quality as are men, machines and materials. This book is a hands-on guide covering design, process control of manufacturing technique, installation, erection, commissioning and maintenance of distribution transformers. It also covers failure analysis and remedial measures for increasing the longevity of transformers. Apart from explaining the design aspect of transformers, the book lists the requirements of ISO 9000 in the process of manufacturing technique up to the final stages of product testing, inspection and despatch.

This comprehensive textbook introduces electrical engineers to the most relevant concepts and techniques in electric power systems engineering today. With an emphasis on practical motivations for choosing the best design and analysis approaches, the author carefully integrates theory and application. Key features include more than 500 illustrations and diagrams, clearly developed procedures and application examples, important mathematical details, coverage of both alternating and direct current, an additional set of solved problems at the end of each chapter, and an historical overview of the development of electric power systems. This book will be useful to both power engineering students and professional power engineers.

In the introductory and concluding chapters this book strives to satisfy the needs of the interested lay reader by addressing the potential, advantages, and costs of solar power plants. For the interested student, scientist, or technically oriented lay person the physical principles of insolation, its variability, concentration, and most efficient use are developed in some detail. Finally, experimental and theoretical developments in the recently created field of solar driven chemistry (via thermal, quantum, or electrical excitation) are described. The contributions in this book are written by leading solar scientists and engineering experts whose extensive background and experience in solar energy lend authenticity and completeness to the book. Design aspects of, and results from large experimental and demonstration plants are described by individuals who were directly involved in the design and testing of many of these plants. Consideration of the viability and future economics of large-scale solar power generation provides an outlook on the energy contributions which can be expected from an optional future supply of abundant and renewable energy, having little impact on the

environment. This provides the rationale for the continued commitment to the development of solar power technologies by researchers, engineers, and industry. The eventual depletion of, or future political attacks on our energy supply will have less serious impact once this renewable option is in place.

The book provides the reader with a profound knowledge of basic principles, properties and preferred applications of diverse kinds of CO<sub>2</sub> measurement. It shows the advantages, disadvantages and limitations of several methods and gives a comprehensive overview of both possible applications and corresponding boundary conditions. Applications reach from environmental monitoring to safety control to biotechnology and food control and finally to medicine.

Power System Stability and Control contains the hands-on information you need to understand, model, analyze, and solve problems using the latest technical tools. You'll learn about the structure of modern power systems, the different levels of control, and the nature of stability problems you face in your day-to-day work.

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.

Control plays a very important role in all aspects of power plants and power systems. The papers included in the 2006 Proceedings are by authors from a large number of countries around the world. They encompass a wide spectrum of topics in the control of practically every aspect of power plants and power systems.

This hallmark text on Power System Engineering provides the readers a comprehensive account of all key concepts in the field. The book includes latest technology developments and talks about some crucial areas of Power system, such as Transmission & Distribution, Analysis & Stability, and Protection & Switchgear. With its rich content, it caters to the requirements of students, instructors, and professionals.

iirdem

Designed For Entry-Level Engineering Students, This Book Presents A Thorough Exposition Of Electrical, Electronics, Computer And Communication Engineering. Simple Language Has Been Used Throughout The Book And The Fundamental Concepts Have Been Systematically Highlighted \* This Edition Includes New Chapters On \* Transmission And Distribution \* Communication Services \* Linear And Digital Integrated Circuits \* Sequential Logic System \* The Book Also Includes \* Large Number Of Diagrams For A Clear Understanding Of The Subject \* Cumerous Solved Examples Illustrating Basic Concepts And Techniques \* Exercises And Review Questions With Answers \* Revision Formulae For Quick Review And RecallAll These Features Make This Book An Ideal Text For Both Degree And Diploma Students Engineering.

A Course in Electrical PowerA Course In Power SystemsGeneration and Economic ConsiderationsJ.B. GuptaPower Plant EngineeringTata McGraw-Hill EducationElectrical Power Plants in SI Units for B.E.A.M.I.E. Sec. 3 ...Design of TransformersTata McGraw-Hill Education

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.

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.

This accessible text, now in its Second Edition, continues to provide a comprehensive coverage of electric power generation, transmission and distribution, including the operation and management of different systems in these areas. It gives an overview of the basic principles of electrical engineering and load characteristics and provides exhaustive system-level description of several power plants, such as thermal, electric, nuclear and gas power plants. The book fully explores the basic theory and also covers emerging concepts and technologies. The conventional topics of transmission subsystem including HVDC transmission are also discussed, along with an introduction to new technologies in power transmission and control such as Flexible AC Transmission Systems (FACTS). Numerous solved examples, inter-spersed throughout, illustrate the concepts discussed. What is New to This Edition : Provides two new chapters on Diesel Engine Power Plants and Power System Restructuring to make the students aware of the changes taking place in the power system industry. Includes more solved and unsolved problems in each chapter to enhance the problem solving skills of the students. Primarily designed as a text for the undergraduate students of electrical engineering, the book should also be of great value to power system engineers.

Calcium and Chemical Looping Technology for Power Generation and Carbon Dioxide (CO<sub>2</sub>) Capture reviews the fundamental principles, systems, oxygen carriers, and carbon dioxide carriers relevant to chemical looping and combustion. Chapters review the market development, economics, and deployment of these systems, also providing detailed information on the variety of materials and processes that will help to shape the future of CO<sub>2</sub> capture ready power plants. Reviews the fundamental principles, systems, oxygen carriers, and carbon dioxide carriers relevant to calcium and chemical looping Provides a lucid explanation of advanced concepts and developments in calcium and chemical looping, high pressure systems, and alternative CO<sub>2</sub> carriers Presents information on the market development, economics, and deployment of these systems

Generation and Utilization of Electrical Energy is a comprehensive text designed for undergraduate courses in electrical

engineering. The text introduces the reader to the generation of electrical energy and then goes on to explain how this energy can be effectively utilized for various applications like welding, electric traction, illumination, and electrolysis. The detailed explanations of practical applications make this an ideal reference book both inside and outside the classroom. Electrical Power Systems for Industrial Plants is a unique book covering engineering practices relevant to industrial plants. The book discusses planning, design and engineering of electrical power systems and covers all aspects of electrical engineering. The subject of each chapter is discussed in a systematic manner. Technical concepts and practices, schematics, charts and worked out examples are used abundantly for purpose of clarity and to drive home the practical applicability of the concepts and engineering practices. Considering the rising cost of energy, special emphasis has been given to energy efficient power distribution network and equipment and machinery.

Featuring contributions from worldwide leaders in the field, the carefully crafted Electric Power Generation, Transmission, and Distribution, Third Edition (part of the five-volume set, The Electric Power Engineering Handbook) provides convenient access to detailed information on a diverse array of power engineering topics. Updates to nearly every chapter keep this book at the forefront of developments in modern power systems, reflecting international standards, practices, and technologies. Topics covered include: Electric power generation: nonconventional methods Electric power generation: conventional methods Transmission system Distribution systems Electric power utilization Power quality L.L. Grigsby, a respected and accomplished authority in power engineering, and section editors Saifur Rahman, Rama Ramakumar, George Karady, Bill Kersting, Andrew Hanson, and Mark Halpin present substantially new and revised material, giving readers up-to-date information on core areas. These include advanced energy technologies, distributed utilities, load characterization and modeling, and power quality issues such as power system harmonics, voltage sags, and power quality monitoring. With six new and 16 fully revised chapters, the book supplies a high level of detail and, more importantly, a tutorial style of writing and use of photographs and graphics to help the reader understand the material. New chapters cover: Water Transmission Line Reliability Methods High Voltage Direct Current Transmission System Advanced Technology High-Temperature Conduction Distribution Short-Circuit Protection Linear Electric Motors A volume in the Electric Power Engineering Handbook, Third Edition. Other volumes in the set: K12648 Power Systems, Third Edition (ISBN: 9781439856338) K13917 Power System Stability and Control, Third Edition (ISBN: 9781439883204) K12650 Electric Power Substations Engineering, Third Edition (ISBN: 9781439856383) K12643 Electric Power Transformer Engineering, Third Edition (ISBN: 9781439856291)

Intended as a practical guide to the design, installation, operation and maintenance of the systems used for measuring and controlling boilers and heat-recovery steam-generators used in land and marine power plants and in process

industries.

[Copyright: 6d30e6fb503e3e9f98cf1ec27d492034](#)