Power Plant Engineering By Arora And Domkundwar

A Course in Power Plant EngineeringPower Plant EngineeringTata McGraw-Hill EducationA Course in Power Plant EngineeringA Course in Power Plant EngineeringAn Introduction to Thermal Power Plant Engineering and OperationFor Power Plant ProfessionalsNotion Press

Supercritical fluids have been utilized for numerous scientific advancements and industrial innovations. As the concern for environmental sustainability grows, these fluids have been increasingly used for energy efficiency purposes. Advanced Applications of Supercritical Fluids in Energy Systems is a pivotal reference source for the latest academic material on the integration of supercritical fluids into contemporary energy-related applications. Highlighting innovative discussions on topics such as renewable energy, fluid dynamics, and heat and mass transfer, this book is ideally designed for researchers, academics, professionals, graduate students, and practitioners interested in the latest trends in energy conversion.

Contributed articles presented at the Conference.

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Presenting a comprehensive analysis of the use of alternative sources of energy and technologies to produce fuels and power, this book describes the energy value chain from harvesting the raw material, (i.e solar, wind, biomass or shale gas) followed by analysis of the processing steps into power, fuels and/or chemicals and finally the distribution of the products. Featuring an examination of the techno-economic processes and integration opportunities which can add value to by-products or promote the use of different sources of energy within the same facility, this book looks at the tools that can make this integration possible as well as utilising a real world case study. The case study of the operation of "El hierro" island is used as an example of the current effort towards more efficient use of the resources available. Tackling head on the open challenges of the supply, the variability of the source and its prediction, the description of novel processes that are being developed and evaluated for their transformation as well as how we can distribute them to the consumer and how we can integrate the new chemicals, fuels and power within the current system and infrastructure, the book takes a process based perspective with such an approach able to help us in the use and integration of these sources of energy and novel technologies.

This Book Can Be Used As A Text Book For The Under Graduate As Well As Post Graduate Curriculum Of Different Universities And Engineering Institutions. Working Personnel, Engaged In Designing, Installing And Analyzing Of Different Renewable Energy Systems, Can Make Good Use Of This Book In Course Of Their Scheduled Activities. It Provides A Clear And Detailed Exposition Of Basic Principles Of Operation, Their Material Science Aspects And The Design Steps.Particular Care Has Been Taken In Elaborating The Concepts Of Hybrid Energy Systems, Integrated Energy Systems And The Critical Role Of Renewable Energy In Preserving Today'S Environment. References At The End Of Each Chapter Have Been Taken From Publications In Different Reputed Journals, Recent Proceedings Of National And International Conferences And Recent Web Sites Along With Ireda And

Teri Reports.

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.

The proceedings entitled "Concentrated Solar Thermal Technologies: Recent Trends and Applications" includes the peer-reviewed selected papers those are presented during NCSTET 2016. The sub-topics under concentrated solar thermal technologies and applications included in the book are Solar Field; Receiver and Heat Exchanger; Coating; Thermal Energy Storage; Cooling; Process Heat; and Smart Grid and Policy Research. The domains mentioned cover topics from resource-assessment, collection to conversion of solar energy for applications, like, heating, cooling and electricity. The proceedings also include invited lectures from domain experts. The edited work will be useful for beginners and for the advanced level researchers in the field of concentrated solar thermal technologies and their applications.

Contributed articles.

Computer aided process engineering (CAPE) plays a key design and operations role in the process industries. This conference features presentations by CAPE specialists and addresses strategic planning, supply chain issues and the increasingly important area of sustainability audits. Experts collectively highlight the need for CAPE practitioners to embrace the three components of sustainable development: environmental, social and economic progress and the role of systematic and sophisticated CAPE tools in delivering these goals. Contributions from the international community of researchers and engineers using computing-based methods in process engineering Review of the latest developments in process systems engineering Emphasis on a systems approach in tackling industrial and societal grand challenges

This book contains the selected, peer-reviewed manuscripts presented at the Conference on Multidisciplinary Engineering and Technology (COMET 2019), held at the University Kuala Lumpur Malaysian Spanish Institute (UniKL MSI), Kedah, Malaysia, from September 18 to 19, 2019. This event presented research being carried out in the field of mechanical, manufacturing, electrical and electronics for engineering and technology. This book also contains the manuscripts from the System Engineering and Energy Laboratory (SEELAB) research cluster, UniKL,

which is actively doing research mainly focused on artificial intelligence, Internet of things, metal air batteries, advanced battery materials and energy material modelling fields. This book is the fourth edition of the progress in engineering technology, Advanced Structured Materials which provides in-depth ongoing research activities among academia of UniKL MSI.

This book comprises select proceedings of the International Conference on Future Learning Aspects of Mechanical Engineering (FLAME 2018). The book discusses different topics of industrial and production engineering such as sustainable manufacturing systems, computer-aided engineering, rapid prototyping, manufacturing management and automation, metrology, manufacturing process optimization, casting, welding, machining, and machine tools. The contents of this book will be useful for researchers as well as professionals.

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This is a textbook for students of Mechanical Engineering in polytechnics. It covers the syllabus in Thermal Engineering papers for two semesters. It is also suitable for engineering degree students(other than those in Mechanical Engineering). The book has used SI units. Diagrams and charts supplement the text.

Contributed articles; with reference to India.

Including Dams Engineering, Hydrology and Fluid Power Engineering. For the student of B.E./B.Tech. Civil Engg., Institution of Engineers (India) U.P.S.C. Exam & Practising Engineers.

Human actions across the past few centuries have led to a depletion of the world's natural energy sources, as well as large scale environmental degradation. In the context of these current global issues, this book covers the latest research on the application and use of microbes in topical areas such as bioremediation and biofuels. With chapters covering environmental clean-up, microbial fuel cells and biohydrogen, it provides a comprehensive discussion of the latest developments in the field of microbe utilization.

This book addresses reliability, maintenance, risk, and safety issues of industrial systems with applications of the latest decision-making techniques. Thus, this book presents chapters that apply advanced tools, techniques, and computing models for optimizing the performance of industrial and manufacturing systems, along with other complex engineering equipment. Computing techniques like data analytics, failure mode and effects analysis, fuzzy set theory, petri-net, multi-criteria decision-making (MCDM), and soft computing are used for solving problems of reliability, risk, and safety related issues. Discusses reliability, risk, and safety issues of industrial systems with the application of the latest reliability and risk based modelling; Includes a wide range of applications related to reliability and risk modeling of engineering systems; Presents a collection of a diverse range of case studies and uses methods to let readers apply cutting-edge decision making methods to their own projects.

The book presents recent trends and solutions to help healthcare sectors and medical staff protect themselves and

others and limit the spread of the COVID-19. The book also presents the problems and challenges researchers and academics face in tackling this monumental task. Topics include: Unmanned Aerial Vehicle (UAV) or drones that can be used to detect infected people in different areas; robots used in fighting the COVID-19 by protecting workers and staff dealing with infected people; blockchain technology that secures sensitive transactions in strict confidentiality. With contributions from experts from around the world, this book aims to help those creating and honing technology to help with this global threat.

This book is intended to meet the requirements of the fresh engineers on the field to endow them with indispensable information, technical know-how to work in the power plant industries and its associated plants. The book provides a thorough understanding and the operating principles to solve the elementary and the difficult problems faced by the modern young engineers while working in the industries. This book is written on the basis of 'hands-on' experience, sound and in-depth knowledge gained by the authors during their experiences faced while working in this field. The problem generally occurs in the power plants during operation and maintenance. It has been explained in a lucid language.

This book presents selected peer reviewed papers from the International Conference on Advanced Production and Industrial Engineering (ICAPIE 2019). It covers a wide range of topics and latest research in mechanical systems engineering, materials engineering, micro-machining, renewable energy, industrial and production engineering, and additive manufacturing. Given the range of topics discussed, this book will be useful for students and researchers primarily working in mechanical and industrial engineering, and energy technologies.

This book includes selected peer-reviewed papers presented at the International Conference on Modeling, Simulation and Optimization, organized by National Institute of Technology, Silchar, Assam, India, during 3–5 August 2020. The book covers topics of modeling, simulation and optimization, including computational modeling and simulation, system modeling and simulation, device/VLSI modeling and simulation, control theory and applications, modeling and simulation of energy system and optimization. The book disseminates various models of diverse systems and includes solutions of emerging challenges of diverse scientific fields.

This book presents select proceedings of the national conference on Advanced Modelling and Innovations in Water Resources Engineering (AMIWRE 2021) and examines numerous advancements in the field of water resources engineering and management towards sustainable development of environment. The topics covered includes river basin planning and development, reservoir planning and management, integrated water management, reservoir sedimentation, soil erosion and sedimentation, agricultural technologies for climate change mitigation, uncertainty analysis in hydrology,

water distribution networks, floods and droughts management, water quality modelling, environmental modelling, environmental impact assessment, urban water management, open channel hydraulics, hydraulic structures, groundwater hydraulics, groundwater flow and contaminant transport modelling, computational fluid dynamics, ocean engineering, HEC-RAC, SWAT, MIKE, MODFLOW models applications, numerical analysis in water resources engineering, climate change impacts on hydrology, optimization techniques in water resources, soft computing techniques and applications in water resources and remote sensing / geospatial techniques in water resources. This book will be beneficial for water sectors development mainly agricultural production, reservoir operations, improvement of water quality, flood and drought controls, designing hydraulic structures and geospatial analysis. This book will be a valuable reference for faculties, research scholars, students, design engineers, industrialists, R & D personnel and practitioners working in water resources engineering and its related fields.