

A Lithium Bromide Absorption Chiller With Cold Storage

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JB; JB/T; JBT - Product Catalog. Translated English of Chinese Standard. (JB; JB/T; JBT) -
<https://www.chinesestandard.net> 2018-01-01

This document provides the comprehensive list of Chinese Industry Standards - Category: JB; JB/T; JBT.

[Conference Proceedings--Solar Heating and Cooling Systems Operational Results, Colorado Springs, Colorado, Nov. 27-30, 1979 - 1979](#)

Advances in Building Energy Research - Mat Santamouris 2012-05-23

'Several high quality scientific journals are published in the area of building energy and indoor/outdoor environment; however, one has been missing. Advances in Building Energy Research fills the gap. I recommend ABER to all technical libraries, research institutes and universities. It should also be used by construction companies and those manufacturing building materials and building products.' Professor Olli Seppänen, President of REHVA (Federation of Heating and Air-conditioning Associations) 'Advances in Building Energy Research is a unique index. It will be an inexhaustible resource for energy related sciences and a continuous inspiration for architects around the world.' N. Fintikakis, Architect and Director of UIA-ARES WP (Architecture and Renewable Energy Sources) 'The collection of articles provides an encyclopaedic overview of the state of the art of the subject; and they are written clearly and concisely. This volume is a must for researchers and advanced students.' Professor Edward Ng, Department of Architecture, The Chinese University of Hong Kong 'This is a very valuable first volume of a new series with each section written by leaders in their respective fields. Contributions cover a range of related topics and present evaluations of contemporary issues in building energy research that give the reader an immediate and clear insight.' Dr Adrian Pitts, Senior Lecturer in Energy, Environment and Sustainability, University of Sheffield Advances in Building Energy Research (ABER) offers state-of-the-art information on the environmental science and performance of buildings, linking new technologies and methodologies with the latest research on systems, simulations and standards. As stringently reviewed as a journal but with the breadth of a book, this annual volume brings together invited contributions from the foremost international experts on energy efficiency and environmental quality of buildings. Spanning a broad range of technical subjects, this is a 'must have' reference on global developments in the field, suitable for architects and building engineers, environmental engineers, industry professionals, students, teachers and researchers in building science, technical libraries and laboratories. This first volume covers double skin facades; artificial intelligence in buildings; indoor thermal comfort and the progress of the adaptive approach; heat island research and the effect of urban microclimate; the use of techniques such as high dynamic range imaging and satellite remote sensing; and vital management and monitoring approaches such as post-occupancy evaluation.

Construction Materials, Methods and Techniques - William P. Spence 2016-01-19

Explore the most up-to-date green and sustainable methods for residential and commercial building construction as well as the latest materials, standards, and practices with CONSTRUCTION MATERIALS, METHODS AND TECHNIQUES: BUILDING FOR A SUSTAINABLE

FUTURE, 4E. This comprehensive book's logical, well-structured format follows the natural sequence of a construction project. The book is the only one with an organization based on the Construction Specifications Institute (CSI) Masterformat standards. Readers will find the most current industry developments and standards as well as latest relevant building codes within a dynamic new design. This edition emphasizes coverage of today's construction materials, methods and techniques that is critical to success in the industry. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Low Energy Cooling for Sustainable Buildings - Ursula Eicker 2009-03-23

This long-awaited reference guide provides a complete overview of low energy cooling systems for buildings, covering a wide range of existing and emerging sustainable energy technologies in one comprehensive volume. An excellent data source on cooling performance, such as building loads or solar thermal chiller efficiencies, it is essential reading for building services and renewable energy engineers and researchers covering sustainable design. The book is unique in including a large set of experimental results from years of monitoring actual building and energy plants, as well as detailed laboratory and simulation analyses. These demonstrate which systems really work in buildings, what the real costs are and how operation can be optimized - crucial information for planners, builders and architects to gain confidence in applying new technologies in the building sector. Inside you will find valuable insights into: the energy demand of residential and office buildings; facades and summer performance of buildings; passive cooling strategies; geothermal cooling; active thermal cooling technologies, including absorption cooling, desiccant cooling and new developments in low power chillers; sustainable building operation using simulation. Supporting case study material makes this a useful text for senior undergraduate students on renewable and sustainable energy courses. Practical and informative, it is the best up-to-date volume on the important and rapidly growing area of cooling.

Emerging Trends in Science, Engineering and Technology - S Sathiyamoorthy 2012-12-14

The present book is based on the research papers presented in the International Conference on Emerging Trends in Science, Engineering and Technology 2012, held at Tiruchirapalli, India. The papers presented bridges the gap between science, engineering and technology. This book covers a variety of topics, including mechanical, production, aeronautical, material science, energy, civil and environmental energy, scientific management, etc. The prime objective of the book is to fully integrate the scientific contributions from academicians, industrialists and research scholars.

Heating and Cooling with Ground-Source Heat Pumps in Moderate and Cold Climates, Two-Volume Set - Vasile Minea 2022-07-30

Heating and Cooling with Ground-Source Heat Pumps in Moderate and Cold Climates, Two-Volume Set focuses on the use of very low-temperature geothermal energy for heating and cooling residential, institutional, and industrial buildings, and aims to increase the design community's awareness and knowledge of the benefits, design, and installation requirements of commercial/institutional building ground-source heat pumps (GSHP). This set helps readers assess applicability, select a GSHP system type, and estimate building thermal load to ensure proper size

for ground-source subsystems, appropriate brine and groundwater flow rates, and apt design of building closed-loops with distributed or central geothermal heat pumps. The first volume addresses fundamentals and design principles of vertical and horizontal indirect and direct expansion closed-loop, as well as ground- and surface-water ground-source heat pump systems. It explains the thermodynamic aspects of mechanical and thermochemical compression cycles of geothermal heat pumps, as well as the energetic, economic, and environmental aspects associated with the use of ground-source heat pump systems for heating and cooling residential and commercial/institutional buildings in moderate and cold climates. The second volume focuses on applications and cases studies of ground-source heat pumps in moderate and cold climates. It details technical aspects, as well as the most common and uncommon application fields of basic system configurations. The principles of system integrations and applications in moderate and cold climates are also presented, each followed by case studies. This comprehensive work is aimed at designers of HVAC systems, as well as geological, mechanical, and chemical engineers implementing environmentally-friendly heating and cooling technologies for buildings.

Advances in Solar Energy Technology - H.P. Garg 2012-12-06

The purpose of writing this three volume 'Advances in Solar Energy Technology' is to provide all the relevant latest information available in the field of Solar Energy (Applied as well as Theoretical) to serve as the best source material at one place. Attempts are made to discuss topics in depth to assist both the students (i.e. undergraduate, postgraduate, research scholars etc.) and the professionals (i.e. Consultancy, design, and contracting firms). Chapter 1 starts with a brief history of solar houses (active heating), one of the oldest and still the widely used application of Solar Energy. Various methods of building heating and other general aspects such as building form and functions are also described. Various components of active solar heating of building like solar collector, storage system, control unit, auxiliary heat source, etc. are discussed very briefly. Three types of solar active heating of buildings like Solar air systems, solar liquid systems, and solar assisted heat pump systems are discussed in detail in this chapter. Design details and performance of nine typical solar houses which are in use in different climatic conditions and using some newer concepts are also discussed in depth in this chapter.

Proceedings of Annual Solar Heating and Cooling Research and Development Branch Contractors' Meeting - 1979

Renewable Energy Based Solutions - Tanay Sıdkı Uyar 2022-12-08

This book discusses the main renewable energy resources, along with the current challenges that make it difficult to achieve 100% decarbonized energy sources. It presents the perspectives of international expert authors in the field, giving readers a multi-dimensional view of the subject. The book explores numerous approaches for a smooth transition from fossil fuels to renewable energies, including those based on engineering methods, as well as policies, strategies, and social perceptions. It presents several case studies and examples from industry, showcasing the potential role of renewable sources and their challenges. The inclusion of both established methods and cutting-edge developments will make this book of interest to academics, industry professionals, policy makers, and graduate students alike.

Solar Heating and Cooling Systems - Ioan Sarbu 2016-10-18

Solar Heating and Cooling Systems: Fundamentals, Experiments and Applications provides comprehensive coverage of this modern energy issue from both a scientific and technical level that is based on original research and the synthesis of consistent bibliographic material that meets the increasing need for modernization and greater energy efficiency to significantly reduce CO2 emissions. Ioan Sarbu and Calin Sebarchievici present a comprehensive overview of all major solar energy technologies, along with the fundamentals, experiments, and applications of solar heating and cooling systems. Technical, economic, and energy saving aspects related to design, modeling, and operation of these systems are also explored. This reference includes physical and mathematical concepts developed to make this publication a self-contained and up-to-date source

of information for engineers, researchers, and professionals who are interested in the use of solar energy as an alternative energy source. Includes learning aims, chapter summaries, problems and solutions to support the theories presented. Puts a specific emphasis on the practical application of the technologies in heating and cooling systems. Contains calculating equations for the energy and economic index of solar systems.

Solar Cooling and Dehumidifying - A R Martinez 2016-04-20

Solar Cooling and Dehumidifying

The Solar Cooling Design Guide - Daniel Mugnier 2017-12-04

Solar cooling systems can be a cost-effective and environmentally attractive air-conditioning solution. The design of such systems, however, is complex. Research carried out under the aegis of the International Energy Agency's Solar Heating and Cooling Program has shown that there is a range of seemingly subtle design decisions that can impact significantly on the performance of solar cooling systems. In order to reduce the risk of errors in the design process, this guide provides detailed and very specific engineering design information. It focuses on case study examples of installed plants that have been monitored and evaluated over the last decade. For three successful plants the design process is described in detail and the rationale for each key design decision is explained. Numerical constraints are suggested for the sizing / selection parameters of key equipment items. Moreover, the application conditions under which the system selection is appropriate are discussed. By following The Guide for any of the three specific solar cooling systems, the designer can expect to reliably achieve a robust, energy-saving solution. This book is intended as a companion to the IEA Solar Cooling Handbook which provides a general overview of the various technologies as well as comprehensive advice to enable engineers to design their own solar cooling system from first principles.

Proceedings - Delbert B. Ward 1977

Proceedings of 3rd Annual Solar Heating and Cooling Research and Development Branch Contractors' Meeting, September 24-27, 1978, Washington, D.C. - 1979

First E.C. Conference on Solar Heating - C. den Ouden 2012-12-06

Contributors to this Conference have shown the wide range of active and passive solar heating systems which have been researched, installed and monitored in recent years throughout western Europe and elsewhere. Yet much remains to be done if solar heating is to reach its full potential. The Conference Committee hopes that this record of the proceedings will provide a basis for the further development of these systems. Many difficulties have been surmounted in arriving at today's position. The foundations of the growing confidence of architects and engineers are to be found in the concerted programmes of research and development mounted by ty,'o of the sponsors of the Conference the European Community and the International Energy Agency. Some of the more tangible products of these programmes have been reported here: component and system behaviour has been subjected to rigorous scientific study; new test facilities have been founded; test procedures devised; simulation methods developed and evaluated; design rules formulated and checked against measured performance. It has been apparent here that the willingness to exchange information and experiences, which has always been a feature of the solar energy scene, remains as strong as ever. A further information-sharing initiative was noted on the part of another sponsor, UNESCO - the setting-up of the European Cooperative Network on Solar Energy, involving countries from both eastern and western Europe.

Renewable and Efficient Electric Power Systems - Gilbert M. Masters 2005-01-03

This is a comprehensive textbook for the new trend of distributed power generation systems and renewable energy sources in electric power systems. It covers the complete range of topics from fundamental concepts to major technologies as well as advanced topics for power consumers. An Instructor's Manual presenting detailed solutions to all the problems in the book is available from the Wiley editorial department -- to obtain the manual, send an email to ialine@wiley.com

The Pre-printed Papers of the Second Solar Heating and Cooling Demonstration Program Contractors' Review, Hotel Del Coronado, San Diego, California, December 13-15, 1978 - Kenneth E. Johnson Environmental and Energy Center 1978

District Heating and Cooling Networks - Antonio Colmenar Santos 2020-05-12

Conventional thermal power generating plants reject a large amount of energy every year. If this rejected heat were to be used through district heating networks, given prior energy valorisation, there would be a noticeable decrease in the amount of fossil fuels imported for heating. As a consequence, benefits would be experienced in the form of an increase in energy efficiency, an improvement in energy security, and a minimisation of emitted greenhouse gases. Given that heat demand is not expected to decrease significantly in the medium term, district heating networks show the greatest potential for the development of cogeneration. Due to their cost competitiveness, flexibility in terms of the ability to use renewable energy resources (such as geothermal or solar thermal) and fossil fuels (more specifically the residual heat from combustion), and the fact that, in some cases, losses to a country/region's energy balance can be easily integrated into district heating networks (which would not be the case in a "fully electric" future), district heating (and cooling) networks and cogeneration could become a key element for a future with greater energy security, while being more sustainable, if appropriate measures were implemented. This book therefore seeks to propose an energy strategy for a number of cities/regions/countries by proposing appropriate measures supported by detailed case studies.

Thermal System Optimization - Vivek K. Patel 2019-02-14

This book presents a wide-ranging review of the latest research and development directions in thermal systems optimization using population-based metaheuristic methods. It helps readers to identify the best methods for their own systems, providing details of mathematical models and algorithms suitable for implementation. To reduce mathematical complexity, the authors focus on optimization of individual components rather than taking on systems as a whole. They employ numerous case studies: heat exchangers; cooling towers; power generators; refrigeration systems; and others. The importance of these subsystems to real-world situations from internal combustion to air-conditioning is made clear. The thermal systems under discussion are analysed using various metaheuristic techniques, with comparative results for different systems. The inclusion of detailed MATLAB® codes in the text will assist readers—researchers, practitioners or students—to assess these techniques for different real-world systems. Thermal System Optimization is a useful tool for thermal design researchers and engineers in academia and industry, wishing to perform thermal system identification with properly optimized parameters. It will be of interest for researchers, practitioners and graduate students with backgrounds in mechanical, chemical and power engineering.

Innovative Materials for Processes in Energy Systems - For Fuel Cells, Heat Pumps and Sorption Systems - 2011

Control of Solar Energy Systems - Eduardo F. Camacho 2012-01-02

Control of Solar Energy Systems details the main solar energy systems, problems involved with their control, and how control systems can help in increasing their efficiency. Thermal energy systems are explored in depth, as are photovoltaic generation and other solar energy applications such as solar furnaces and solar refrigeration systems. This second and updated edition of Advanced Control of Solar Plants includes new material on: solar towers and solar tracking; heliostat calibration, characterization and offset correction; solar radiation, estimation, prediction, and computation; and integrated control of solar plants. This new edition contains worked examples in the text as well as proposed exercises and simulation models and so will be of great use to the student and academic, as well as the industrial practitioner.

Advances in Power and Energy Engineering - Yuanzhang Sun 2016-04-05

Energy and power are playing pivotal roles in social and economic developments of the modern

world. Energy and power engineers and technologists have made our lives much more comfortable and affordable. However, due to the demands of the global population on resources and the environment, innovations of more reliable and sustainable energy resources are needed. Renewable Heating and Cooling - Gerhard Stryi-Hipp 2015-11-20

Renewable Heating and Cooling: Technologies and Applications presents the latest information on the generation of heat for industry and domestic purposes, an area where a significant proportion of total energy is consumed. In Europe, this figure is estimated to be almost 50%, with the majority of heat generated by the consumption of fossil fuels. As there is a pressing need to increase the uptake of renewable heating and cooling (RHC) to reduce greenhouse gas emissions, this book provides a comprehensive and authoritative overview on the topic. Part One introduces key RHC technologies and discusses RHC in the context of global heating and cooling demand, featuring chapters on solar thermal process heat generation, deep geothermal energy, and solar cooling technologies. Part Two explores enabling technologies, special applications, and case studies with detailed coverage of thermal energy storage, hybrid systems, and renewable heating for RHC, along with case studies in China and Sweden. Users will find this book to be an essential resource for lead engineers and engineering consultants working on renewable heating and cooling in engineering companies, as well as academics and R&D professionals in private research institutes who have a particular interest in the subject matter. Includes coverage on biomass, solar thermal, and geothermal renewable heating and cooling technologies. Features chapters on solar thermal process heat generation, deep geothermal energy, solar cooling technologies, and special applications. Presents case studies with detailed coverage of thermal energy storage, hybrid systems, and renewable heating for RHC. Explores enabling technologies and special applications.

Advances in Solar Energy: Volume 17 - D. Yogi Goswami 2015-12-08

'Essential for any serious technical library' PROFESSOR MARTIN GREEN, UNIVERSITY OF NEW SOUTH WALES, AUSTRALIA 'Valuable, detailed information that helps me plan for the future' DON OSBORN, FORMERLY OF SACRAMENTO MUNICIPAL UTILITY DISTRICT The Advances in Solar Energy series offers state-of-the-art information on all primary renewable energy technologies, including solar, wind and biomass, bringing together invited contributions from the foremost international experts in renewable energy. Spanning a broad range of technical subjects, this volume and series is a 'must-have' reference on global developments in the field of renewable energy. Volume 17 focuses primarily on solar energy, with respect to heating, hot water, drying and detoxification. Specific chapter subjects include: Alternative World Energy Outlook 2006: A Possible Path towards a Sustainable Future Quantum Well Solar Cells Recent Progress of Organic Photovoltaics Thermal and Material Characterization of Immersed Heat Exchangers for Solar Domestic Hot Water Photocatalytic Detoxification of Water with Solar Energy Solar-Hydrogen: A Solid-State Chemistry Perspective Solar Heat for Industrial Processes Solar Energy Technology in the Middle East and North Africa (MENA) for Sustainable Energy, Water and Environment

Guidelines for Community Energy Planning - Hang Yu 2019-09-12

This book systematically introduces readers to the operator method, which can be used in different stages of urban planning. Energy planning should ideally be accompanied by urban planning, ranging from comprehensive planning and detailed planning, to the design of individual construction projects. This book discusses a range of methods and models for defining energy planning objectives; analyzing and predicting energy demand; assessing available energy resources; optimizing integrated energy systems; analyzing the cost-effectiveness of proposals; implementation management; and post-assessment. Part one focuses on energy planning in different urban planning stages, while part two provides detailed discussions of key issues related to energy planning.

GB 50736-2012: Translated English of Chinese Standard. GB50736-2012 - <https://www.chinesestandard.net> 2017-02-11

[After payment, write to & get a FREE-of-charge, unprotected true-PDF from:

Sales@ChineseStandard.net] This code is formulated with a view to implementing the national technical and economic policies, rationally using resources and saving energy, protecting environment, promoting application of advanced technologies, and ensuring healthy and comfortable working and living environment during design for heating, ventilation and air conditioning of civil buildings.

Proceedings of 2021 International Top-Level Forum on Engineering Science and Technology Development Strategy - Yusheng Xue 2022-03-21

This book includes original, peer-reviewed research papers from the 2021 International Top-Level Forum on Engineering Science and Technology Development Strategy -- the 6th PURPLE MOUNTAIN FORUM on Smart Grid Protection and Control (PMF2021), held in Nanjing, China, on August 14-22, 2021. The accepted papers cover the following topics: 1. Advanced power transmission technology 2. AC/DC hybrid power grid technology 3. Power Internet of Things Technology and Application 4. Operation, control and protection of smart grid 5. Active distribution network technology 6. Power electronic technology and application 7. New technology of substation automation 8. Energy storage technology and application 9. Application of new technologies such as artificial intelligence, blockchain, and big data 10. Application of Information and Communication Technology 11. Low-carbon energy planning and security 12. Low-carbon operation of the power system 13. Low-carbon energy comprehensive utilization technology 14. Carbon trading and power market 15. Carbon emission stream and carbon capture technology 16. Energy saving and smart energy technology 17. Analysis and evaluation of low-carbon efficiency of power system 18. Carbon flow modelling in power system operation The papers included in this proceeding share the latest research results and practical application examples on the methodologies and algorithms in these areas, which makes the book a valuable reference for researchers, engineers, and university students.

Challenges of Power Engineering and Environment - Ke-fa Cen 2009-03-27

This book is the proceedings of the International Conference on Power Engineering-2007. The fields of this book include power engineering and relevant environmental issues. The recent technological advances in power engineering and related areas are introduced. This book is valuable for researchers, engineers and students majoring in power engineering.

Energy Research Abstracts - 1985

Introduction to Architectural Science - S. V. Szokolay 2008

A clear and thorough guide to the building blocks of sustainable design.

Advances in Solar Energy - D. Yogi Goswami 2007

First Published in 2007. Routledge is an imprint of Taylor & Francis, an informa company.

A Handbook on Low-Energy Buildings and District-Energy Systems - L.D. Danny Harvey 2012-08-21

Winner of Choice Magazine - Outstanding Academic Titles for 2007 Buildings account for over one third of global energy use and associated greenhouse gas emissions worldwide. Reducing energy use by buildings is therefore an essential part of any strategy to reduce greenhouse gas emissions, and thereby lessen the likelihood of potentially catastrophic climate change. Bringing together a wealth of hard-to-obtain information on energy use and energy efficiency in buildings at a level which can be easily digested and applied, Danny Harvey offers a comprehensive, objective and critical sourcebook on low-energy buildings. Topics covered include: thermal envelopes, heating, cooling, heat pumps, HVAC systems, hot water, lighting, solar energy, appliances and office equipment, embodied energy, buildings as systems and community-integrated energy systems (cogeneration, district heating, and district cooling). The book includes exemplary buildings and techniques from North America, Europe and Asia, and combines a broad, holistic perspective with technical detail in an accessible and insightful manner.

Solar Cooling - Paul Kohlenbach 2014-06-20

Cooling buildings is a major global energy consumer and the energy requirement is growing year

by year. This guide to solar cooling technology explains all you need to know about how solar energy can be converted into cooling energy. It outlines the difference between heat-driven and photovoltaic-driven systems and gives examples of both, making clear in what situations solar cooling technology makes sense. It includes chapters on: • solar thermal collectors • solar cooling technologies • cold distribution • storage components • designing and sizing • installation, operation and maintenance • economic feasibility • potential markets • case studies. Solar Cooling is for engineers, architects, consultancies, solar thermal technology companies, students and anyone who is interested in getting involved with this technology.

Bulletin de L'Institut International Du Froid - 2010

Absorption Chillers and Heat Pumps - Keith E. Herold 2016-04-21

Significantly revised and updated since its first publication in 1996, Absorption Chillers and Heat Pumps, Second Edition discusses the fundamental physics and major applications of absorption chillers. While the popularity of absorption chillers began to dwindle in the United States in the late 1990's, a shift towards sustainability, green buildings and the use of renewable energy has brought about a renewed interest in absorption heat pump technology. In contrast, absorption chillers captured a large market share in Asia in the same time frame due to relative costs of gas and electricity. In addition to providing an in-depth discussion of fundamental concepts related to absorption refrigeration technology, this book provides detailed modeling of a broad range of simple and advanced cycles as well as a discussion of applications. New to the Second Edition: Offers details on the ground-breaking Vapor Surfactant theory of mass transfer enhancement Presents extensively revised computer examples based on the latest version of EES (Engineering Equation Solver) software, including enhanced consistency and internal documentation Contains new LiBr/H₂O property routines covering a broad range of temperature and the full range of concentration Utilizes new NH₃/H₂O helper functions in EES which significantly enhance ease of use Adds a new chapter on absorption technology applications Offers updated absorption fluid transport property information Absorption Chillers and Heat Pumps, Second Edition provides an updated and thorough discussion of the physics and applications of absorption chillers and heat pumps. An in-depth guide to evaluating and simulating absorption systems, this revised edition provides significantly increased consistency and clarity in both the text and the worked examples. The introduction of the vapor surfactant theory is a major new component of the book. This definitive work serves as a resource for both the newcomer and seasoned professional in the field.

Polygeneration Systems - Francesco Calise 2021-09-22

The support for polygeneration lies in the possibility of integrating different technologies into a single energy system, to maximize the utilization of both fossil and renewable fuels. A system that delivers multiple forms of energy to users, maximizing the overall efficiency makes polygeneration an emerging and viable option for energy consuming industries. Polygeneration Systems: Design, Processes and Technologies provides simple and advanced calculation techniques to evaluate energy, environmental and economic performance of polygeneration systems under analysis. With specific design guidelines for each type of polygeneration system and experimental performance data, referred both to single components and overall systems, this title covers all aspects of polygeneration from design to operation, optimization and practical implementation. Giving different aspects of both fossil and non-fossil fuel based polygeneration and the wider area of polygeneration processes, this book helps readers learn general principles to specific system design and development through analysis of case studies, examples, simulation characteristics and thermodynamic and economic data. Detailed economic data for technology to assist developing feasibility studies regarding the possible application of polygeneration technologies Offers a comprehensive list of all current numerical and experimental results of polygeneration available Includes simulation models, cost figures, demonstration projects and test standards for designers and researchers to validate their own models and/or to test the reliability of their results

New Geothermal Cooling - Heating System for Buildings - Pawel Lech 2012-06

Single stage absorption chillers (water/lithium bromide) can operate using low grade heat, thus single stage absorption chillers can operate using low temperature geothermal resources. An EES computer model was written for the single stage absorption chiller based on overall heat transfer coefficients, mass flows, salt balances, energy balances and other assumptions. The single stage model was calibrated with well known and available data from US and Japanese manufacturer. The system was considered to work in hot and humid climate like Abu Dhabi and Shanghai. The results show that in the case when cooling water is 28°C hot the initial and annual total cost is high. However, as cooling water temperature decreases the initial and annual total cost decreases sharply (when cooling water is at 20°C the reduction is around 35% of total annual cost). The results show great influence of cold and hot water on the performance and total annual cost of absorption chiller. A second part of a computer model contains a Total Equivalent Warming Impact (TEWI) analysis. TEWI considers both, the direct refrigerant effect and the primary energy impact on the equivalent carbon dioxide (CO₂) emission.

Design and Performance Optimization of Renewable Energy Systems - Mamdouh Assad

2021-01-12

Design and Performance Optimization of Renewable Energy Systems provides an integrated discussion of issues relating to renewable energy performance design and optimization using advanced thermodynamic analysis with modern methods to configure major renewable energy plant configurations (solar, geothermal, wind, hydro, PV). Vectors of performance enhancement reviewed include thermodynamics, heat transfer, exergoeconomics and neural network techniques. Source technologies studied range across geothermal power plants, hydroelectric power, solar power towers, linear concentrating PV, parabolic trough solar collectors, grid-tied hybrid solar PV/Fuel cell for freshwater production, and wind energy systems. Finally, nanofluids in

renewable energy systems are reviewed and discussed from the heat transfer enhancement perspective. Reviews the fundamentals of thermodynamics and heat transfer concepts to help engineers overcome design challenges for performance maximization Explores advanced design and operating principles for solar, geothermal and wind energy systems with diagrams and examples Combines detailed mathematical modeling with relevant computational analyses, focusing on novel techniques such as artificial neural network analyses Demonstrates how to maximize overall system performance by achieving synergies in equipment and component efficiency

Refrigeration and Air Conditioning - S. N. SAPALI 2009-02-11

This book provides a first course in Refrigeration and Air Conditioning. The subject matter has been developed in a logical and coherent manner with neat illustrations and a fairly large number of solved examples and unsolved problems. The text, developed from the author's teaching experience of many years, is suitable for the senior-level undergraduate and first-year postgraduate students of mechanical engineering, automobile engineering as well as chemical engineering. The text commences with an introduction to the fundamentals of thermodynamics and a brief treatment of the various methods of refrigeration. Then follows the detailed discussion and analysis of air refrigeration systems, vapour compression and vapour absorption refrigeration systems with special emphasis on developing sound physical concepts and gaining problem solving skills. Refrigerants are exhaustively dealt with in a separate chapter. The remainder chapters of the book deal with psychrometry and various processes required for the analysis of air conditioning systems. Technical descriptions of compressors, evaporators, condensers, expansion devices and ducts are provided along with design practices for cooling and heating load calculations. Finally, a brief review of the basic principles and applications of cryogenic gases and air liquefaction systems are given.