Comparative Exergy Analysis Of Vapor Compression | 41fa271a50e6b2f3bd0f84b0a1b4e430

Applied Mechanics Reviews

This book comprises select papers presented at the International Conference on Trends and Recent Advances in Civil Engineering (TRACE 2016). The book presents results of experimental investigations into the latest topics related to energy and built environment. The topics covered include green and clean technologies, zero energy buildings, solar energy, energy conservation and heat recovery, and solar architecture. The contents of this book will be beneficial to students, researchers and professionals working in the area of energy and built environment engineering.

EXERGY

This book evaluates and discusses the main sustainability challenges encountered in the production of biofuel and bio-products from oil palm biomass. It starts off with the emphasis on oil palm production, oil palm products recovery and oil palm wastes utilization. The simultaneous production of these bio-products for sustainable development is discussed. This is followed by the key factors defining the sustainability of biofuel and bio-product production from oil palm biomass. The environmental issues including ecological, life cycle assessment and environmental impact assessment of oil palm plantation, milling and refining for the production of biofuels and bio-products are presented. Socio-economic and thermodynamic analysis of the production processes are also evaluated using various sustainability assessment tools such as energy. Lastly, methods of improving biofuel production systems for sustainable development are highlighted.


This book gathers papers addressing state-of-the-art research in all areas of information and communication technologies and their applications in intelligent cloud, storage data mining and software analysis. It presents the outcomes of the Fourth International Conference on Information and Communication Technologies for Intelligent Systems, which was held in Ahemedabad, India. Divided into two volumes, the book discusses the fundamentals of various data analysis techniques and algorithms, making it a valuable resource for researchers and practitioners alike.

Les actes du XVIIe Congrès International du Froid, Montréal (Québec) Canada, 10-17 août 1991

Optimization of Heat and Mass Exchange

This special issue focuses on the optimization of heat and mass exchange processes based on a single-blind peer review and at least two independent reviewers, thereby ensuring a high quality final product. I would like to thank all our reviewers for authorizing the papers to be published, and the editorial board, for their valuable advice that led to the final decision. I am sure that, in coming years, readers of this Special Issue will find the scientific manuscripts interesting and beneficial to their research.

Proceedings of ICDMC 2019

Energy is one of the most important topics of our time, and renewable energy has been a long and still-unfolding story that has taken decades to bring us to where we are today. Even after so many progresses, engineers, and scientists are always still developing new and innovative techniques, processes, equipment, and materials to further the science and fulfill the mission of generating cleaner, renewable energy for the world’s consumption. This new groundbreaking series, Advances in Renewable Energy, covers these topics across the spectrum, including solar, wind, and other renewable energy sources. This first volume in the series introduces the reader to the fundamentals of renewable energy, probably the fastest growing energy industry, developing areas of renewable energy. With new materials and processes constantly coming online, it is important for engineers and scientists to stay abreast of the state-of-the-art in the field, and this volume does just that. Covering not just the basics of the technology and technological advances, the contributors delve into the financial aspects of each process. They look at both the costs, not just initial costs, but the costs of maintenance, as well. Covering nearly every aspect of solar energy systems and the latest advances in the field, this is a must-have volume for any engineer, scientist, or educator working in or studying solar energy.

Energy, Transportation and Global Warming

This book comprises select papers presented at the International Conference on Mechanical Engineering Design (ICMechD) 2019. The volume focuses on the recent trends in design research and their applications across the mechanical and biomedical domain. The book covers topics like tribology design, mechanism and machine design, wear and surface engineering, vibration and noise engineering, biomechanics in engineering, industrial thermal management, and thermal engineering. Case studies, industrial citing practical challenges and their solutions using appropriate techniques and modern engineering tools are also discussed. Given its content, this book will prove useful to students, researchers as well as practitioners.

Energy Research Abstracts

A comprehensive repository of all information relating to the scientific and technological aspects of Shale Gas and Alternative Energy conveniently arranged by energy type including Shale Gas, Wind, Geothermal, Solar, and Hydropower perfectly first-stop reference for any scientist, engineer, or student looking for practical and applied energy information Emphasizes practical applications of existing technologies, from design and planning, to operation and troubleshooting of energy systems and equipment Features concise yet complete entries, making it easy for users to find the required information quickly, without the need to search through long articles.


Thermokonomische Bewertung des Organic Rankine Cycles bei der Stromerzeugung aus industrieller Abwärme

This book provides 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 analyzed using various metaheuristic techniques, with comparative results for different systems. The inclusion of detailed MATLAB code 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 in backgrounds in mechanical, chemical and power engineering.


This edited book looks at recent studies on interdisciplinary research related to energy, energy, and the environment. This topic is of prime significance – there is a strong need for practical solutions through better design, analysis and simulation in order to achieve better efficiency, environment and sustainability. Exergetic, Energetic and Environmental Dimensions covers a number of topics ranging from thermodynamic systems, in which the author offers a comprehensive reference on analysis, modeling, development, experimental investigation, and improvement of many macro to micro systems and applications, ranging from basic to advanced categories. Its comprehensive content includes: Comprehensive coverage of development of systems considering energy, environment, and environmental issues, along with the most up-to-date information in the area, plus recent developments New developments in the area of energy, including recent debate involving the shifting of future directions and priorities for better environment, sustainable development and energy security Provides a number of illustrative examples, practical applications, and case studies introduces recently developed theoretical and simulation-based solutions and engineering applications problems in the area Provides numerous engineering examples and applications Energy offers a variety of problems that foster critical thinking and skill development

Gas Capture Processes

This thorough and highly relevant volume examines exergy, energy and the environment in the context of energy systems and applications and as a potential tool for design, analysis, optimization. It further considers their role in minimizing and/or eliminating environmental impacts and providing for sustainable development. In this regard, several key topics ranging from the basics of the thermodynamic concepts to advanced energy analysis techniques in a wide range of applications are covered.

Advances in Air Conditioning and Refrigeration

This multi-disciplinary book presents the most recent advances in energy, environment, and environmental issues. Volume 1 focuses on fundamentals in the field and covers current problems, future needs, and prospects for the area of energy and environment from researchers worldwide. Based on selected lectures from the Seventh International Exergy, Energy and Environmental Symposium (IEEEES-2015) and complemented by further invited contributions, this comprehensive set of contributions promote the exchange of new ideas and techniques in energy conversion and conservation in order to exchange best practices in ‘energetic efficiency’. Included are fundamental and historical coverage of the green transportation and sustainable mobility sectors, especially regarding the development of sustainable technologies for thermal comfort and green transportation vehicles. Furthermore, contributions on renewable and sustainable energy sources, strategies for energy production, and the carbon-free society constitute an important part of this book. Energy for Better Environment and Sustainability, Volume 1 will appeal to researchers, students, and professionals within engineering and the renewable energy fields.
Exergetic, Energetic and Environmental Dimensions

A timely and comprehensive introduction to CO2 heat pump theory and usage. A comprehensive introduction of CO2 application in heat pump, authored by leading scientists in the field. CO2 is a hot topic due to concerns over global warming and the 'greenhouse effect'. Its disposal and application has attracted considerable research and governmental interest. The book offers basic theories, devices, systems and cycles and real application designs for varying applications, ensuring comprehensive coverage of a current topic. CO2 heat transfer has everyday applications including water heaters, air-conditioning systems, residential and commercial heating systems, and cooling systems.

**Paper**


**Sustainability of Biofuel Production from Oil Palm Biomass**

Energy Abstracts for Policy Analysis

Comprehensive Energy Systems provides a unified source of information covering the entire spectrum of energy, one of the most significant issues humanity has to face. This comprehensive book describes traditional and novel energy systems, from single generation to multi-generation, covering all aspects of energy systems, including energy policy, strategies, and environmental impacts. The book includes methods and techniques to analyze and evaluate energy systems, as well as case studies and real-world examples. The book is divided into five parts:

1. Renewable Energy Sources and Recent Advances
2. Emerging Green Technologies
3. Sustainability of Energy Systems
4. Energy Efficiency and Conservation
5. Energy Storage and Distribution

**Comprehensive Energy Systems**

Information and Communication Technology for Intelligent Systems

This book presents peer-reviewed papers from the International Conference on Recent Advancements in Air Conditioning and Refrigeration (RAAR 2019). The focus is on current research in a very topical area of HVAC technology, which has wide-ranging applications. The topics covered include modern air conditioning and refrigeration practices, environmentally-friendly refrigerants, high-performance components, computer-aided design, manufacture, operations and data management, energy-efficient buildings, and applications of solar energy to heating and air conditioning. This book is useful for researchers and industry professionals working in the field of heating, air conditioning and refrigeration.

**Transcritical CO2 Heat Pump**

Energy Systems Engineering is one of the most exciting and fastest growing fields in engineering. Modeling and simulation plays a key role in Energy Systems Engineering. This book provides an introduction to the basic concepts of energy systems, applications, and modeling techniques. It covers the fundamentals of energy systems, including modeling and simulation tools, and provides real-world examples and case studies. The book is designed for students, researchers, and professionals working in the field of energy systems engineering.

**Modeling and Simulation of Energy Systems**


**Trends in Mechanical and Biomedical Design**

This book is devoted to the analysis of applications and energy, exergy, and environmental issues in all sectors of the economy, including industrial processes, transportation, buildings, and services. Energy sources and technologies considered are hydrocarbons, wind and solar energy, fuel cells, as well as thermal and electrical storage. This book provides theoretical insights, along with state-of-the-art case studies and examples and will appeal to the academic community, but also to energy and environmental professionals and decision makers.

**Advances in Energy Technology**

This book deals with exergy and its applications to various energy systems and applications as a potential tool for design, analysis and optimization, and its role in minimizing and/or eliminating environmental impacts and providing sustainable development. In this regard, several key topics ranging from the basics of the exergetic approach to advanced energy analysis techniques in a wide range of applications are covered as outlined in the contents. - Comprehensive coverage of energy and its applications - Connects energy with three essential areas in terms of energy, environment and sustainable development - Presents the most up-to-date information in the area with recent developments - Provides a number of illustrative examples, practical applications, and case studies - Easy to follow style, starting from the basics to the advanced systems

**Emerging Trends in Computing and Expert Technology**

Renewable Energy in the Service of Mankind Vol II

Flexible Kalina Cycle Systems

This book presents select proceedings of International Conference on Energy, Material Sciences and Mechanical Engineering (EMSME 2020), held at National Institute of Technology Delhi. Various topics covered in this book include clean materials, solar energy systems, wind energy systems, power optimization, grid integration of renewable energy, smart energy storage technologies, artificial intelligence in solar and wind systems, analysis of clean energy systems in environment, converter topology, modeling and simulation. This book is useful for researchers and professionals working in the areas of solar material science, electrical engineering, and energy technologies.

Alternative Energy and Shale Gas Encyclopedias

This book combines peer-reviewed papers from the International Conference on Thermofluids (IKT Thermo 2020). It focuses on the latest studies and findings in the areas of fluid dynamics, heat transfer, thermodynamics, and combustion. Some of the topics covered in the book include electronic cooling, HVAC system analysis, inverse heat transfer, combustion, nano-fluids, multiphase flow, high-speed flow, and shock waves. The book includes both experimental and numerical studies along with a few review chapters from experienced researchers, and is expected to lead to new research in this important area.

This book is of interest to students, researchers as well as practitioners working in the areas of fluid dynamics, thermodynamics, and combustion.

**The Role of Exergy in Energy and the Environment**

This book presents a holistic view of climate change by examining a number of energy and transportation technologies and their impact on the climate. High-quality technical research results from specific test-cases around the globe are presented, and developments in global warming are discussed, focusing on current emission policies from air and maritime transport to fossil fuel applications. Novel technologies such as carbon capture and storage, as well as innovations in energy systems and processes, are highlighted in this book.

**Introduction to Mechanical Engineering**

Sustainability of environment is an emerging global issue at present. Unsustainable or deteriorating environment is a matter of concern as it has threatened the survival of living creatures. Recently, climate change has been a major concern of great concern at a global platform owing to imbalance in natural environment. Increasing population has increased the demand for energy, which has ultimately put pressure on natural resources and caused a paradigm shift from resource generation to exploitation. Emerging Energy Alternatives for Sustainable Environment aims to address the role of sustainable technologies in energy systems and general options for clean energy. It covers a wide spectrum of energy generation approaches, with an emphasis on five key topics: (i) renewable energy sources and recent advances, (ii) emerging green technologies, (iii) sustainable development, (iv) enablement of new energy generation, and (v) institutional options, storage system, and heat transfer. This book provides essential and comprehensive knowledge of green energy technologies with different aspects for engineers, technocrats and researchers working in the industry, universities, and research institutions. The book is also very useful for undergraduate and graduate students of science and engineering who are keen to know about the developments of sustainable energy technologies and their corresponding processes. Please note: This volume is Co-published with The Energy and Resources Institute Press, New Delhi. Taylor & Francis does not sell or distribute the Hardback in India, Pakistan, Nepal, Bhutan, Bangladesh and Sri Lanka.
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