Effect Of Twisted Tape Inserts On Heat Transfer In A |
5f1f321fada392d598cb2f5dba542767

Advances in Heat Transfer

Heat Transfer Enhancement

Heat Exchanger Design Handbook

Nanotechnology

Intelligent Manufacturing and Energy Sustainability

Recent Advances in Material Sciences

Emerging Trends in Science, Engineering and Technology

Applied Mechanics Reviews


Recent Trends in Engineering Design

Materials in Environmental Engineering

Proceedings of International Conference in Mechanical and Energy Technology

Advances in Heat Transfer Enhancement

Fluid Machinery and Fluid Mechanics

Insert Devices and Integral Roughness in Heat Transfer

Enhancement Handbook of Phase Change

Proceedings of 6th International Conference on Mechanical Engineering

Paper Trends in Computational Intelligence, Security and Internet of Things

Thermal Characteristics and Convection in Nanofluids

Experimental Studies on Heat Transfer Augmentation Using Modified Reduced Width Twisted Tapes (RWTT) as Inserts for Tube Side Flow of Liquids

Heat Transfer Nanofluid in Heat Exchanges for Mechanical Systems

Proceedings of the 26th National Conference on Fluid Mechanics and Fluid Power


Investigation and Characterization of Pressure Drop in Evenly Spaced Twisted Tapes

Numerical Study of an Exhaust Heat Recovery System Using Corrugated Tubes and Twisted Tape Inserts

Advances in Cryogenic Engineering


Inverse Heat Conduction and Heat Exchangers

This book covers synthesis, characterization, stability, heat transfer and applications of nanofluids. It includes different types of nanofluids, their preparation methods as well as its effects on the stability and thermophysical properties of nanofluids. It provides a discussion on the mechanism behind the change in the thermal properties of nanofluids and heat transfer behaviour. It presents the latest information and discussion on the preparation and advanced characterization of nanofluids. It also consists of stability analysis of nanofluids and discussion on why it is essential for the industrial application. The book provides a discussion on thermal boundary layer properties in convection. Future directions for heat transfer applications to make the production and application of nanofluids at industrial level are also discussed.

"This comprehensive reference covers all the important aspects of heat exchangers (HEs)—their design and modes of operation—and practical, large-scale applications in process, power, petroleum, transport, air conditioning, refrigeration, cryogenics, heat recovery, energy, and other industries. Reflecting the author's extensive practical experience,

Completely revised and updated to reflect current advances in heat exchanger technology, Heat Exchanger Design Handbook, Second Edition includes enhanced figures and thermal effectiveness charts, tables, new chapter, and additional topics—all while keeping the qualities that made the first edition a centerpiece of information for practicing engineers, research, engineers, academicians, designers, and manufacturers involved in heat exchange between two or more fluids. See What's New in the Second Edition: Updated information on pressure vessel codes, manufacturer's association standards A new chapter on heat exchanger installation, operation, and maintenance practices Classification chapter now includes coverage of scrapped surface-, graphite-, coil wound-, microscale-, and printed circuit heat exchangers Thorough revision of fabrication of shell and tube heat exchangers, heat transfer augmentation methods, fouling control concepts and inclusion of recent advances in PHEs New topics like EMbaffle®, Helixchanger®, and Twistedtube® heat exchanger, feedwater heater, steam surface condenser, rotary regenerators for HVAC applications, CAB brazing and cupro-braze radiators Without proper heat exchanger design, efficiency of cooling/heating system of plants and machineries, industrial processes and energy system can be compromised, and energy wasted. This thoroughly revised handbook offers comprehensive coverage of single-phase heat exchangers—selection, thermal design, mechanical design, corrosion and fouling, FIV, material selection and their fabrication issues, fabrication of heat exchangers, operation, and maintenance of heat exchangers—all in one volume.

deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Issues in Mechanical Engineering: 2013 Edition has been produced by the world's leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority, confidence, and credibility. More information is available at http://www.ScholarlyEditions.com/.

Papers presented at the conference.

This Brief concerns heat transfer and pressure drop in heat transfer enhancement for boiling and condensation. The authors divide their topic into six areas: abrasive treatment and coatings, combined structured and porous surfaces, basic principles of boiling mechanism, vapor space condensation, convective vaporization, and forced condensation inside tubes. Within this framework, the book examines range of specific phenomena including abrasive treatment, open grooves, 3D cavities, etched surfaces, electroplating, pierced 3D cover sheets, attached wire and screen promoters, non-wetting coatings, oxide and ceramic coatings, porous surfaces, structured surfaces (integral roughness), combined structured and porous surfaces, composite surfaces, single-tube pool boiling tests, theoretical fundamentals like liquid superheat, effect of cavity shape and contact angle on superheat, entrapment of vapor in cavities, nucleation at a surface cavity, effect of dissolved gases, bubble departure diameter, bubble dynamics, boiling hysteresis and orientation effects, basic principles of boiling mechanism, visualization and mechanism of boiling in subsurface tunnels, and Chien and Webb parametric boiling studies.

This book includes selected, high-quality papers presented at the International Conference on Intelligent Manufacturing and Energy Sustainability (ICIMES 2019) held at the Department of Mechanical Engineering, Malla Reddy College of Engineering & Technology (MRCET), Maisammaguda, Hyderabad, India, from 21 to 22 June 2019. It covers topics in the areas of automation, manufacturing technology and energy sustainability.

A direct solution of the heat conduction equation with prescribed initial and boundary conditions yields temperature distribution inside a specimen. The direct solution is mathematically considered as a well-posed one because the solution exists, is unique, and continuously depends on input data. The estimation of unknown parameters from the measured temperature data is known as the inverse problem of heat conduction. An error in temperature measurement, thermal time lagging, thermocouple-cavity, or signal noise data makes stability a problem in the estimation of unknown parameters. The solution of the inverse problem can be obtained by employing the gradient or non-gradient based inverse algorithm. The aim of this book is to analyze the inverse problem and heat exchanger applications in the fields of aerospace, mechanical, applied mechanics, environment sciences, and engineering.

Heat transfer enhancement techniques are widely used in many applications in the heating process to make possible reduction in weight and size or enhance the performance of heat exchanges. These techniques are classified as active and passive techniques. The active technique requires external power while the passive technique does not need any external power. The passive techniques are valuable compared with the active techniques because the swirl inserts manufacturing process is simple and can be easily employed in an existing heat exchange. This book shows how the finite volume method is used to simulate various applications of heat exchanges. First, the heat transfer enhancement methods are introduced in detail. Following this, hydrothermal analysis and second law approaches are presented for heat exchanges. The melting process in heat exchanges is also covered. Finally, the influence of variable magnetic field on performance of heat exchange is discussed. This is an important reference source for materials scientists and mechanical engineers who are looking to understand the main ways that nanofluid flow is simulated, and what the major application are.

Two-phase flow heat exchangers are vital components of systems for power generation, chemical processing, and thermal environment control. The art and science of the design of such heat exchangers have advanced considerably in recent years. This is due to better understanding of the fundamentals of two-phase flow and heat transfer in simple geometries, greater appreciation of these processes in complex geometries, and enhanced predictive capability through use of complex computer codes. The subject is clearly of great fundamental and practical importance. The NATO ASIAn Thermal-Hydraulic Fundamentals and Design of Two-Phase Flow Heat Exchangers was held in Povoa de Varzim (near Porto), Portugal, July 6-17, 1987. participating in the organization of the ASI were the Department of Mechanical Engineering and the Clean Energy Research Institute, University of Miami; Universidade do Porto; and the Department of Mechanical Engineering, Aeronautical Eng ineer ing, and Mechanics, Rensselaer Polytechnic Institute. The ASI was arranged primarily as a high-level teaching activity by experts representing both academic and
industrial viewpoints. The program included the presentation of invited lectures, a limited number of related technical papers and discussion sessions.

This book presents the selected peer-reviewed proceedings of the International Conference on Innovative Engineering Design (ICOIED 2020). The contents provide a multidisciplinary approach for the development of innovative product design and their benefits for the society. The book presents latest advances in various fields like design process, service development, micro/nano technology, sensors and MEMS, and sustainability in engineering design. This book can be useful for students, researchers, and professionals interested in innovative product/process design and development.

Diesel engine generators are the major power source for small communities in cold regions. Diesel generators waste about 1/3 of their fuel energy in the form of heat through exhaust gas. The primary goal of this work is to capture part of the heat from the exhaust and improve the efficiency of the system. A gas to liquid heat transfer performance of a concentric tube heat exchanger with corrugated tubes and twisted tape inserts is investigated by considering its effects on engine performance and economics. This type of heat exchanger is expected to be inexpensive to install and effective in heat transfer, with minimal effect on exhaust emissions of diesel engines. Most previous research has investigated liquid to liquid heat transfer in corrugated tubes at low Reynolds, not gas to liquid heat transfer. The SolidWorks Flow Simulation computer program was used to perform these studies. The program is first validated by comparing simulation results with renowned correlations and field measurements. Simulations are then conducted for a concentric tube heat exchanger with corrugated tubes and twisted tapes of different configurations to determine the optimal design. The maximum enhancement in the rate of heat transfer was found in an annularly corrugated tube heat exchanger with twisted tape inserts. This exchanger transfers about 235.3% and 67.26% more heat compared to plain tube and annularly corrugated tube heat exchangers without twisted tapes, respectively. Based on optimal results, for a 120 kWe diesel generator, the application of an annularly corrugated tube heat exchanger with twisted tape inserts can save 2,250 gallons of fuel annually (a cost of approximately $11,330) expected payback of initial cost in one month. In addition, saving heating fuel also reduces CO2 emissions by 23 metric tons per year.

A comprehensive reference for engineers and researchers, Gas Turbine Heat Transfer and Cooling Technology, Second Edition has been completely revised and updated to reflect advances in the field made during the past ten years. The second edition retains the format that made the first edition so popular and adds new information mainly based on selected published papers in the open literature. See What’s New in the Second Edition: State-of-the-art cooling technologies such as advanced turbine blade film cooling and internal cooling Modern experimental methods for gas turbine heat transfer and cooling research Advanced computational models for gas turbine heat transfer and cooling performance predictions Suggestions for future research in this critical technology The book discusses the need for turbine cooling, gas turbine heat-transfer problems, and cooling methodology and covers turbine rotor and stator heat-transfer issues, including endwall and blade tip regions under engine conditions, as well as under simulated engine conditions. It then examines turbine rotor and stator blade film cooling and discusses the unsteady high free-stream turbulence effect on simulated cascade airfoils. From here, the book explores impingement cooling, rib-turbulent cooling, pin-fin cooling, and compound and new cooling techniques. It also highlights the effect of rotation on rotor coolant passage heat transfer. Coverage of experimental methods includes heat-transfer and mass-transfer techniques, liquid crystal thermography, optical techniques, as well as flow and thermal measurement techniques. The book concludes with discussions of governing equations and turbulence models and their applications for predicting turbine blade heat transfer and film cooling, and turbine blade internal cooling.

Heat exchangers are widely used in the industrial sector, e.g. in the refrigeration, air conditioning, petrochemical, and agricultural food industry. The high cost of energy and material has resulted in an increased effort aimed at producing high performance heat exchanger equipment. Passive methods of heat transfer enhancement do not need external power for enhancement. One of these kinds of passive technique is twisted tape inserts that enhance the performance of heat exchangers. Using multiple twisted tape inserts gives better enhancement than a single twisted tape insert. Using nanofluid gives also better thermal performance than water. Therefore, nanofluid along with twisted tape inserts was used in this study. For this study, different combinations of multiple twisted tape inserts were designed and fabricated. These different combinations contain dual, triple, and quadruple twisted tapes. Directions of twists are also varied which enables to study the effect of different swirl flow generators. Nanofluid is used with various volume concentrations of 0.07%, 0.14% and 0.21% in order to investigate the effect of nanoparticle concentration on heat transfer enhancement. Experimental investigation was carried out by having a constant heat flux condition and by varying the volume flow rate of flow from 2 to 10 lpm.
This project report deals with the use of modified twisted tape inserts as Passive Heat transfer augmentation device. Effect of Reduced width twisted tape (RWTT), Baffled Reduced width twisted tape (BRWTT1) & Baffled Reduced width twisted tape with holes (BRWTT2) on heat transfer and friction factor for heating of water for Reynolds number range 2500-30000, was studied experimentally in a double pipe heat exchanger. Three tapes of different twist ratio (yw=3.69, yw=4.39, yw=5.25) for RWTT, BRWTT1 & BRWTT2 were used. Based on constant flow rate, the heat transfer coefficient were found to be 1.18-3.66, 2.61-7.07 & 3.58-8.08 times the smooth tube values for RWTT, BRWTT1 & BRWTT2 respectively. The friction factor values were found to be 3.23-5.96, 7.79-11.23 & 8.86-14.44 times the smooth tube values for RWTT, BRWTT1 & BRWTT2 respectively. Based on constant pumping power, the heat transfer coefficient values were found to be 0.88-1.62, 1.59-3.70 & 2.12-4.49 times the smooth tube values for RWTT, BRWTT1 & BRWTT2 respectively. Based on the increase in Heat transfer coefficient, Performance evaluation criteria R1 & R3, it was concluded that Baffled Reduced width twisted tape & Baffled Reduced width twisted tape with holes performs much better than the Reduced width twisted tapes(RWTT) of the same twist ratio.

The book focuses on new analytical, experimental, and computational developments in the field of research of heat and mass transfer phenomena. The generation, conversion, use, and exchange of thermal energy between physical systems are considered. Various mechanisms of heat transfer such as thermal conduction, thermal convection, thermal radiation, and transfer of energy by phase changes are presented. Theory and fundamental research in heat and mass transfer, numerical simulations and algorithms, experimental techniques, and measurements as they applied to all kinds of applied and emerging problems are covered.

This contains selected and peer-reviewed papers from the 4th Annual International Conference on Material Science and Environmental Engineering (MSEE), December 16-18 2016, in Chengdu, China. Interactions of building materials, biomaterials, energy materials and nanomaterials with surrounding environment are discussed. With abundant case studies, it is of interests to material scientists and environmental engineers.

This Brief addresses the phenomena of heat transfer enhancement. A companion edition in the SpringerBrief Subseries on Thermal Engineering and Applied Science to three other monographs including “Critical Heat Flux in Flow Boiling in Microchannels,” this volume is idea for professionals, researchers, and graduate students concerned with electronic cooling.

To sort out the progress of aviation science and technology and industry, look forward to the future development trend, commend scientific and technological innovation achievements and talents, strengthen international cooperation, promote discipline exchanges, encourage scientific and technological innovation, and promote the development of aviation, the Chinese Aeronautical Society holds a China Aviation Science and Technology Conference every two years, which has been successfully held for four times and has become the highest level, largest scale, most influential and authoritative science and technology conference in the field of aviation in China. The 5th China Aviation Science and Technology Conference will be held in Wuzhen, Jiaxing City, Zhejiang Province in 2021, with the theme of “New Generation of Aviation Equipment and Technology”, with academician Zhang Yanzhong as the chairman of the conference. This book contains original, peer-reviewed research papers from the conference. The topics covered include but are not limited to navigation, guidance and control technologies, key technologies for aircraft design and overall optimization, aviation test technologies, aviation airborne systems, electromechanical technologies, structural design, aerodynamics and flight mechanics, other related technologies, advanced aviation materials and manufacturing technologies, advanced aviation propulsion technologies, and civil aviation transportation. The papers presented here share the latest discoveries on aviation science and technology, making the book a valuable asset for researchers, engineers, and students.

This book presents a new technique to enhance heat transfer coefficient of double pipe heat exchanger. Heat transfer enhancement is the practice of modifying a heat transfer surface to increase the heat transfer coefficient between the surface and fluid. An experimental investigation has been conducted to evaluate the heat transfer performance of double pipe heat exchanger. Experiments were carried out under two condition of full-length and half-length twisted tape inserts in double pipe heat exchanger and result are compared with the smooth double pipe heat exchanger. By inserting twisted tape inside the tube, they act as turbulence promoter. It mixes the boundary fluid with bulk fluid and boundary layer thickness is reduced by imparting a rotational motion to a fluid flowing inside the tube of double pipe heat exchanger. The effect of the full-length and half-length twisted tape on the heat transfer coefficient and pressure drop is experimentally investigated in case of different mass flow rate. The performance evaluation of the smooth tube, and tube with full length and half-length tapes were carried out on the basis of equal mass flow rates and unit pressure drop.
This book presents the select proceedings of the 3rd International Conference on Computational and Experimental Methods in Mechanical Engineering (ICCEMME 2020). The book discusses the recent researches and concrete findings in the field of mechanical design and automation with its allied branches. Various topics covered in this book include modeling and simulation, application of modelling to complex real-world systems, application of machine or deep learning in mechanical problems, artificial intelligence, vehicle design, robotics, vehicle dynamics and control, biomechanics, and vibration-related problems. Given its content, the book will be useful for beginners, researchers, and professionals interested in the field of mechanical engineering.

Provides a comprehensive coverage of the basic phenomena. It contains twenty-five chapters which cover different aspects of boiling and condensation. First the specific topic or phenomenon is described, followed by a brief survey of previous work, a phenomenological model based on current understanding, and finally a set of recommended design equations.

Compact Heat Exchangers for Energy Transfer Intensification: Low-Grade Heat and Fouling Mitigation provides theoretical and experimental background on heat transfer intensification in modern heat exchangers. Emphasizing applications in complex heat recovery systems for the process industries, this book: Covers various issues related to low-grade heat exchangers.

Heat exchangers are widely used in the industrial sector, e.g. in the refrigeration, air conditioning, petrochemical, and agricultural food industry. The high cost of energy and material has resulted in an increased effort aimed at producing high performance heat exchanger equipment. Passive methods of heat transfer enhancement do not need external power for enhancement. One of these kinds of passive technique is twisted tape inserts that enhance the performance of heat exchangers. Using multiple twisted tape inserts gives better enhancement than a single twisted tape insert. Using nanofluid gives also better thermal performance than water. Therefore, nanofluid along with twisted tape inserts was used in this study. For this study, different combinations of multiple twisted tape inserts were designed and fabricated. These different combinations contain dual, triple, and quadruple twisted tapes. Directions of twists are also varied which enables to study the effect of different swirl flow generators. Nanofluid is used with various volume concentrations of 0.07%, 0.14% and 0.21% in order to investigate the effect of nanoparticle concentration on heat transfer enhancement. Experimental investigation was carried out by having a constant heat flux condition and by varying the volume flow rate of flow from 2 to 10 lpm.

In his MIT Doctoral thesis on an inverted Hydride-fueled reactor concept, Paolo Ferroni (2010) suggested using short-length twisted tape inserts in order to increase the critical heat flux (CHF) at which departure from nucleate boiling occurs. Shortlength twisted tapes were proposed in his study because they offer the benefits of increased heat transfer and CHF, but also introduce a smaller pressure drop than a full-length twisted tape insert. This thesis project investigated the effects of short-length twisted tape inserts on the pressure drop in round tubes. The objectives of the project were two-fold. The first objective was to characterize the development of swirl flow in sequential twisted tapes. The second objective was to create a correlation for the Darcy's friction factor as a function of the Reynolds number (Re), tape twist ratio (y), and tape spacing (s) which could be used for both Ferroni's work and other future work. To characterize developing flow, 6 test sections were constructed. Measurements were collected for the pressure drop at several sequential twisted tapes, and the resulting friction factors were compared for each tape module. The results showed at most ±10% difference in friction factor between tapes and no significant trends between friction factor and the axial sequence location (or index) of the tape. To develop a correlation, 21 test sections were constructed by P. Ferroni and the author. Pressure drop measurements were collected for conditions spanning 10000.

This Brief describes heat transfer and pressure drop in heat transfer enhancement by insert devices and integral roughness. The authors deal with twisted-tape insert laminar and turbulent flow in tubes and annuli in smooth tubes and rough tubes, segmented twisted-tape inserts, displaced enhancement devices, wire coil inserts, extended surface inserts and tangential injection devices. The articles also address transverse and helical integral rib roughness, corrugated tube roughness, 3D and 2D roughness, rod bundles, outside roughness for cross flow, non-circular channels, Reynolds analogy and similarity law, numerical simulation and predictive models. The book is ideal for professionals and researchers working with thermal management in devices.

Food Nanotechnology: Applications and Approaches is the definitive guide on all aspects of nano-sized ingredients and devices for the food sector. The book brings science and applications together on the nano-scale into nano-structured food materials, with an emphasis on their production, processing, engineering, characterization, and applications of food materials containing true nano-sized dimensions or nano-structures that enable novel enhanced properties or functions. All chapters emphasize original results relating to experimental, theoretical,
computational, and/or applications of nano-materials in food. Topics such as the application of nanotechnology in food processing operations, functional ingredients, quality control, nutraceutical delivery, and packaging of food products are very attractive and beneficial to both academics and practitioners. Finally, the safety of applying nano ingredients and nano devices is covered. Brings novel applications of nanotechnology in processing food products Shows how to improve the formulation of food products with nano-structured ingredients Explores new opportunities in food packaging through nano-structured materials

1970 marked the seventh return of the Cryogenic Engineering Conference, now affiliated with the National Academy of Sciences through the Division of Engineering, National Research Council, to Boulder, Colorado. Local arrangements for this year's meeting have again been capably handled by the University of Colorado and the Cryogenics Division, NBS Institute for Basic Standards. The Cryogenic Engineering Conference Committee gratefully acknowledges the assistance of these two organizations, and particularly the Bureau of Continuation Education of the University of Colorado, for serving as hosts to the 1970 Cryogenic Engineering Conference. The National Academy of Sciences is a private, honorary organization of more than 700 scientists and engineers elected on the basis of outstanding contributions to knowledge. Established by a Congressional Act of Incorporation signed by Abraham Lincoln on March 3, 1863, and supported by private and public funds, the Academy works to further science and its use for the general welfare by bringing together the most qualified individuals to deal with scientific and technological problems of broad significance. Under the terms of its Congressional charter, the Academy is also called upon to act as an official-yet independent adviser to the Federal Government in any matter of science and technology. This provision accounts for the close ties that have always existed between the Academy and the Government, although the Academy is not a governmental agency and its activities are not limited to those on behalf of the Government.

This book comprises select proceedings of the International Conference on Latest Innovations in Materials Engineering and Technology (ICLIET 2018). The book focuses on diverse engineering materials, their design and applications. The materials in discussion include those related to coatings, polymers, composites, tribology, acoustic insulators, lubricants, and cryogenics. The book also highlights emerging nano and micro materials, bio engineering materials, as well as new energy materials for solar cells and photovoltaic cells. This book will serve as an useful reference for students, researchers, and professionals working in the field of materials science and engineering.

Readers learn the principles of heat transfer using the classic that sets the standard of coverage and organization for all other heat transfer books. Following the recommendations of the ASME Committee on Heat Transfer Education, Kreith/Manglik's PRINCIPLES OF HEAT TRANSFER, 8E provides a comprehensive engineering approach that is ideal for your study of heat transfer. This relevant book recognizes that in today's world, computational analysis is more critical than rote mathematical solutions to heat transfer problems. However, the authors also incorporate an effective analytic approach that offers a clear understanding of the physics involved and equips readers with the tools for analyzing more complex problems. The book emphasizes applications to current engineering challenges in renewable energy, bioengineering, microelectronics, materials processing, and space exploration. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

"Fluid Machinery and Fluid Mechanics: 4th International Symposium (4th ISFMFE)" is the proceedings of 4th International Symposium on Fluid Machinery and Fluid Engineering, held in Beijing November 24-27, 2008. It contains 69 highly informative technical papers presented at the Mei Lecture session and the technical sessions of the symposium. The Chinese Society of Engineering Thermophysics (CSET) organized the First, the Second and the Third International Symposium on Fluid Machinery and Fluid Engineering (1996, 2000 and 2004). The purpose of the 4th Symposium is to provide a common forum for exchange of scientific and technical information worldwide on fluid machinery and fluid engineering for scientists and engineers. The main subject of this symposium is "Fluid Machinery for Energy Conservation". The "Mei Lecture" reports on the most recent developments of fluid machinery in commemoration of the late professor Mei Zuyan. The book is intended for researchers and engineers in fluid machinery and fluid engineering. Jianzhong Xu is a professor at the Chinese Society of Engineering Thermophysics, Chinese Academy of Sciences, Beijing.

This volume constitutes the refereed proceedings of the Third International Conference on Computational Intelligence, Security and Internet of Things, ICCISIoT 2020, held in Agartala, India, in December 2020. Due to the COVID-19 pandemic the conference was held online. The 23
full papers and 4 short papers were carefully reviewed and selected from 113 submissions. The papers are organised according to the following topics: computational intelligence, security, and internet of things.

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.

Advances in Heat Transfer

This book presents selected peer-reviewed papers from the International Conference on Mechanical and Energy Technologies, which was held on 7-8 November 2019 at Galgotias College of Engineering and Technology, Greater Noida, India. The book reports on the latest developments in the field of mechanical and energy technology in contributions prepared by experts from academia and industry. The broad range of topics covered includes aerodynamics and fluid mechanics, artificial intelligence, nonmaterial and nonmanufacturing technologies, rapid manufacturing technologies and prototyping, remanufacturing, renewable energies technologies, metrology and computer-aided inspection, etc. Accordingly, the book offers a valuable resource for researchers in various fields, especially mechanical and industrial engineering, and energy technologies.

Copyright code: 5f1f321fada392d598cb2f5dba542767