

Wolverine Heat Transfer Data II

Heat Exchangers
 Energy Efficient Thermal Management of Data Centers
 Encyclopedia Of Two-phase Heat Transfer And Flow Iii: Macro And Micro Flow Boiling And Numerical Modeling Fundamentals (A 4-volume Set)
 Process Heat Transfer
 Applied Chemical Process Design
 Transfer of Heat from Helium at High Temperatures
 Ludwig's Applied Process Design for Chemical and Petrochemical Plants
 The Heat Transfer Data Book II
 Two-Phase Heat Transfer Enhancement
 Embedded Cooling Of Electronic Devices: Conduction, Evaporation, And Single- And Two-phase Convection
 Tubular Heat Exchangers
 An Analytical and Experimental Investigation of a 1.8 by 3.7 Meter Fresnel Lens Solar Concentrator
 Advances in Transport Phenomena 2011
 NASA Technical Paper
 Heat Transfer Equipment Design
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 Applied Mechanics Reviews
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 Water-Formed Deposits
 Energy Management and Efficiency for the Process Industries
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 Enhanced Heat Transfer
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 Applied Process Design for Chemical and Petrochemical Plants:
 Chemical Engineering Design
 Heat Exchanger Design Handbook
 Encyclopedia of Chemical Processing and Design
 Chemical Process Engineering Volume 2
 Rules of Thumb for Chemical Engineers
 Chemical Process Equipment
 Introduction to Thermo-Fluids Systems Design
 Encyclopedia Of Two-phase Heat Transfer And Flow Ii: Special Topics And Applications (A 4-volume Set)
 Heat Transfer Design Methods
 Introduction to Multiphase Flow
 Insert Devices and Integral Roughness in Heat Transfer Enhancement
 Subcooled Boiling Heat Transfer Under Forced Convection in a Heated Tube

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Heat Exchangers Elsevier

Heat ExchangersCRC Press

Energy Efficient Thermal Management of Data Centers Butterworth-Heinemann

"Written by engineers for engineers (with over 150 International Editorial Advisory Board members),this highly lauded resource provides up-to-the-minute information on the chemical processes, methods, practices, products, and standards in the chemical, and related, industries. "

Encyclopedia Of Two-phase Heat Transfer And Flow Iii: Macro And Micro Flow Boiling And Numerical Modeling Fundamentals (A 4-volume Set) John Wiley & Sons

This book explains basics from physical chemistry and fluid mechanics to understand, construct and apply tubular heat exchangers for the (chemical) industry. Examples from practice highlight the required equations, physical properties and raise critical steps for the design of for example tubular double-pipe, multi-tubes and finned heat exchangers. Exercises and corresponding solutions deepen the gained knowledge and clarify the described theory.

[Process Heat Transfer](#) World Scientific

This book is a comprehensive guide on emerging cooling technologies for processors in microelectronics. It covers various topics such as chip-embedded two-phase cooling, monolithic microfluidic cooling, numerical modeling, and advances in materials engineering for conduction-limited direct contact cooling, with a goal to remedy high heat flux issues.The book also discusses the co-design of thermal and electromagnetic properties for the development of light and ultra-high efficiency electric motors. It provides an in-depth analysis of the scaling limits, challenges, and opportunities in embedded cooling, including high power RF amplifiers and self-emissive and liquid crystal displays. Its analysis of emerging cooling technologies provides a roadmap for the future of cooling technology in microelectronics.This book is a good starting point for the electrical and thermal engineers, as well as MS and PhD students, interested in understanding and collaboratively tackling the complex and multidisciplinary field of microelectronics device (embedded) cooling. A basic knowledge of heat conduction and convection is required.

Springer Science & Business Media

Process Heat Transfer is a reference on the design and implementation of industrial heat exchangers. It provides the background needed to understand and master the commercial software packages used by professional engineers in the design and analysis of heat exchangers. This book focuses on types of heat exchangers most widely used by industry: shell-and-tube exchangers (including condensers, reboilers and vaporizers), air-cooled heat exchangers and double-pipe (hairpin) exchangers. It provides a substantial introduction to the design of heat exchanger networks using pinch technology, the most efficient strategy used to achieve optimal recovery of heat in industrial processes. Utilizes leading commercial software. Get expert HTRI Xchanger Suite guidance, tips and tricks previously available via high cost professional training sessions. Details the development of

initial configuration for a heat exchanger and how to systematically modify it to obtain an efficient final design. Abundant case studies and rules of thumb, along with copious software examples, provide a complete library of reference designs and heuristics for readers to base their own designs on.

Applied Chemical Process Design World Scientific

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 engine

Transfer of Heat from Helium at High Temperatures Heat Exchangers

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.

Ludwig's Applied Process Design for Chemical and Petrochemical Plants CRC Press

Rules of Thumb for Chemical Engineers, Fifth Edition, provides solutions, common sense techniques, shortcuts, and calculations to help chemical and process engineers deal with practical on-the-job problems. It discusses physical properties for proprietary materials, pharmaceutical and biopharmaceutical sector heuristics, and process design, along with closed-loop heat transfer systems, heat exchangers, packed columns, and structured packings. Organized into 27 chapters, the book begins with an overview of formulae and data for sizing piping systems for incompressible and compressible flow. It then moves to a discussion of design recommendations for heat exchangers, practical equations for solving fractionation problems, along with design of reactive absorption processes. It also considers different types of pumps and presents narrative as well as tabular comparisons and application notes for various types of fans, blowers, and compressors. The book also walks the reader through the general rules of thumb for vessels, how cooling towers are sized based on parameters such as return temperature and supply temperature, and specifications of refrigeration systems. Other chapters focus on pneumatic conveying, blending and agitation, energy conservation, and process modeling. Chemical engineers faced with fluid flow problems will find this book extremely useful. Rules of Thumb for Chemical Engineers brings together solutions, information and work-arounds that engineers in the process industry need to get their job done. New material in the Fifth Edition includes physical properties for proprietary materials, six new chapters, including pharmaceutical, biopharmaceutical sector heuristics, process design with simulation software, and guidelines for hazardous materials and processes Now includes SI units throughout alongside

The Heat Transfer Data Book II Academic Press

This 2nd Edition of Coulson & Richardson's classic Chemical Engineering text provides a complete update and revision of Volume 6: An Introduction to Design. It provides a revised and updated introduction to the methodology and procedures for process design and process equipment selection and design for the chemical process and allied industries. It includes material on flow sheeting, piping and instrumentation, mechanical design of equipment, costing and project evaluation, safety and loss prevention. The material on safety and loss prevention and environmental protection has been revised to cover current procedures and legislation. Process integration and the use of heat pumps has been included in the chapter on energy utilisation. Additional material has been added on heat transfer equipment; agitated vessels are now covered and the discussion of fired heaters and plate heat exchangers extended. The appendices have been extended to include a computer program for energy balances, illustrations of equipment specification sheets and heat exchanger tube layout diagrams. This 2nd Edition will continue to provide undergraduate students of chemical engineering, chemical engineers in industry and chemists and mechanical engineers, who have to tackle problems arising in the process industries, with a valuable text on how a complete process is designed and how it must be fitted into the environment.

Two-Phase Heat Transfer Enhancement Springer Science & Business Media

Chemical Engineering Design: Principles, Practice and Economics of Plant and Process Design is one of the best-known and most widely adopted texts available for students of chemical engineering. The text deals with the application of chemical engineering principles to the design of chemical processes and equipment. The third edition retains its hallmark features of scope, clarity and practical emphasis, while providing the latest US codes and standards, including API, ASME and ISA design codes and ANSI standards, as well as coverage of the latest aspects of process design, operations, safety, loss prevention, equipment selection, and more. The text is designed for chemical and biochemical engineering students (senior undergraduate year, plus appropriate for capstone design courses where taken), and professionals in industry (chemical process, biochemical, pharmaceutical, petrochemical sectors). Provides students with a text of unmatched relevance for chemical process and plant design courses and for the final year capstone design course Written by practicing design engineers with extensive undergraduate teaching experience Contains more than 100 typical industrial design projects drawn from a diverse range of process industries NEW TO THIS EDITION Includes new content covering food, pharmaceutical and biological processes and commonly used unit operations Provides updates on plant and equipment costs, regulations and technical standards Includes limited online access for students to Cost Engineering's Cleopatra Enterprise cost estimating software

Embedded Cooling Of Electronic Devices: Conduction, Evaporation, And Single- And Two-phase Convection CRC Press

This new volume of the annual review "Advances in Transport Phenomena" series contains three in-depth review articles on the microfluidic fabrication of vesicles, the dielectrophoresis field-flow fractionation for continuous-flow separation of particles and cells in microfluidic devices, and the thermodynamic analysis and optimization of heat exchangers, respectively.

Tubular Heat Exchangers Springer

Set III of this encyclopedia is a new addition to the previous Sets I and II. It contains 26 invited chapters from international specialists on the topics of numerical modeling of two-phase flows and evaporation, fundamentals of evaporation and condensation in microchannels and macrochannels,

development and testing of micro two-phase cooling systems for electronics, and various special topics (surface wetting effects, microfin tubes, two-phase flow vibration across tube bundles). The chapters are written both by renowned university researchers and by well-known engineers from leading corporate research laboratories. Numerous 'must read' chapters cover the fundamentals of research and engineering practice on boiling, condensation and two-phase flows, two-phase heat transfer equipment, electronics cooling systems, case studies and so forth. Set III constitutes a 'must have' reference together with Sets I and II for thermal engineering researchers and practitioners.

An Analytical and Experimental Investigation of a 1.8 by 3.7 Meter Fresnel Lens Solar Concentrator John Wiley & Sons

A fully comprehensive guide to thermal systems design covering fluid dynamics, thermodynamics, heat transfer and thermodynamic power cycles Bridging the gap between the fundamental concepts of fluid mechanics, heat transfer and thermodynamics, and the practical design of thermo-fluids components and systems, this textbook focuses on the design of internal fluid flow systems, coiled heat exchangers and performance analysis of power plant systems. The topics are arranged so that each builds upon the previous chapter to convey to the reader that topics are not stand-alone items during the design process, and that they all must come together to produce a successful design. Because the complete design or modification of modern equipment and systems requires knowledge of current industry practices, the authors highlight the use of manufacturer's catalogs to select equipment, and practical examples are included throughout to give readers an exhaustive illustration of the fundamental aspects of the design process. Key Features: Demonstrates how industrial equipment and systems are designed, covering the underlying theory and practical application of thermo-fluid system design Practical rules-of-thumb are included in the text as 'Practical Notes' to underline their importance in current practice and provide additional information Includes an instructor's manual hosted on the book's companion website

Advances in Transport Phenomena 2011 Springer

The aim of the two-set series is to present a very detailed and up-to-date reference for researchers and practicing engineers in the fields of mechanical, refrigeration, chemical, nuclear and electronics engineering on the important topic of two-phase heat transfer and two-phase flow. The scope of the first set of 4 volumes presents the fundamentals of the two-phase flows and heat transfer mechanisms, and describes in detail the most important prediction methods, while the scope of the second set of 4 volumes presents numerous special topics and numerous applications, also including numerical simulation methods. Practicing engineers will find extensive coverage to applications involving: multi-microchannel evaporator cold plates for electronics cooling, boiling on enhanced tubes and tube bundles, flow pattern based methods for predicting boiling and condensation inside horizontal tubes, pressure drop methods for singularities (U-bends and contractions), boiling in multipoint tubes, and boiling and condensation in plate heat exchangers. All of these chapters include the latest methods for predicting not only local heat transfer coefficients but also pressure drops. Professors and students will find this 'Encyclopedia of Two-Phase Heat Transfer and Flow' particularly exciting, as it contains authored books and thorough state-of-the-art reviews on many basic and special topics, such as numerical modeling of two-phase heat transfer and adiabatic bubbly and slug flows, the unified annular flow boiling model, flow pattern maps, condensation and boiling theories, new emerging topics, etc.

NASA Technical Paper CRC Press

This book is the maiden volume in a new series devoted to lectures delivered through the annual seminars "Short Courses on Multiphase Flow," held primarily at ETH Zurich continuously since 1984. The Zurich short courses, presented by prominent specialists in the various topics covered, have attracted a very large number of participants. This series presents fully updated and when necessary re-grouped lectures in a number of topical volumes. The collection aims at giving a condensed, critical and up-to-date view of basic knowledge on multiphase flows in relation to systems and phenomena encountered in industrial applications. The present volume covers the background of Multiphase Flows (MPF) that introduces the reader to the particular nature and complexity of multiphase flows and to basic but critical aspects of MPFs including concepts and the definition of the quantities of interest, an introduction to modelling strategies for MPFs, flow regimes, flow regime maps and transition criteria. It also deals with the ubiquitous needs of the multiphase-flow modeller, namely pressure drop and phase distribution, i.e., the void fraction and the topology of the phases that determines the flow regimes.

Heat Transfer Equipment Design Butterworth-Heinemann

This third edition of Applied Process Design for Chemical and Petrochemical Plants, Volume 3, is completely revised and updated throughout to make this standard reference more valuable than ever. It has been expanded by more than 200 pages to include the latest technological and process developments in heat transfer, refrigeration, compression and compression surge drums, and mechanical drivers. Like other volumes in this classic series, this one emphasizes how to apply techniques of process design and how to interpret results into mechanical equipment details. It focuses on the applied aspects of chemical engineering design to aid the design and/or project engineers in rating process requirements, specifying for purchasing purposes, and interpreting and selecting the mechanical equipment needed to satisfy the process functions. Process chemical engineering and mechanical hydraulics are included in the design procedures. Includes updated information that allows for efficiency and accuracy in daily tasks and operations Part of a classic series in the industry

Chemical Engineering Design CRC Press

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.

An analytical and experimental investigation of a 1.8 by 3.7 meter Fresnel lens solar concentrator Elsevier

Mineral Scales and Deposits: Scientific and Technological Approaches presents, in an integrated way, the problem of scale deposits (precipitation/crystallization of sparingly-soluble salts) in aqueous systems, both industrial and biological. It covers several fundamental aspects, also offering an applications' perspective, with the ultimate goal of helping the reader better understand the underlying mechanisms of scale formation, while also assisting the user/reader to solve scale-related challenges. It is ideal for scientists/experts working in academia, offering a number of crystal growth topics with an emphasis on mechanistic details, prediction modules, and inhibition/dispersion chemistry, amongst others. In addition, technologists, consultants, plant managers, engineers, and designers working in industry will find a field-friendly overview of scale-related challenges and technological options for their mitigation. Provides a unique, detailed focus on scale deposits, includes the basic science and mechanisms of scale formation Present a field-friendly overview of scale-related challenges and technological options for their mitigation Correlates chemical structure to performance Provides guidelines for easy assessment of a particular case, also including solutions Includes an extensive list of industrial case studies for reference

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Applied Mechanics Reviews Springer

The fourth edition of Ludwig's Applied Process Design for Chemical and Petrochemical Plants, Volume Three is a core reference for chemical, plant, and process engineers and provides an unrivalled reference on methods, process fundamentals, and supporting design data. New to this edition are expanded chapters on heat transfer plus additional chapters focused on the design of shell and tube heat exchangers, double pipe heat exchangers and air coolers. Heat tracer requirements for pipelines and heat loss from insulated pipelines are covered in this new edition, along with batch heating and cooling of process fluids, process integration, and industrial reactors. The book also looks at the troubleshooting of process equipment and corrosion and metallurgy. Assists engineers in rapidly analyzing problems and finding effective design methods and mechanical specifications Definitive guide to the selection and design of various equipment types, including heat exchanger sizing and compressor sizing, with established design codes Batch heating and cooling of process fluids supported by Excel programs [Heat Exchangers](#) Walter de Gruyter GmbH & Co KG
First published: Chemical process equipment / Stanley M. Walas. 1988.