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greater number of applied examples and updated chapters on drying adsorption and membranes

Computer Methods in Chemical Engineering Nayef Ghasem, 2021-11-23 While various software packages have become essential for performing unit operations and other kinds of processes in chemical engineering the fundamental theory and methods of calculation must also be understood to effectively test the validity of these packages and verify the results Computer Methods in Chemical Engineering Second Edition presents the most used simulation software along with the theory involved It covers chemical engineering thermodynamics fluid mechanics material and energy balances mass transfer operations reactor design and computer applications in chemical engineering The highly anticipated Second Edition is thoroughly updated to reflect the latest updates in the featured software and has added a focus on real reactors introduces AVEVA Process Simulation software and includes new and updated appendixes Through this book students will learn the following What chemical engineers do The functions and theoretical background of basic chemical engineering unit operations How to simulate chemical processes using software packages How to size chemical process units manually and with software How to fit experimental data How to solve linear and nonlinear algebraic equations as well as ordinary differential equations Along with exercises and references each chapter contains a theoretical description of process units followed by numerous examples that are solved step by step via hand calculation and computer simulation using Hysys UniSim PRO II Aspen Plus and SuperPro Designer Adhering to the Accreditation Board for Engineering and Technology ABET criteria the book gives chemical engineering students and professionals the tools to solve real problems involving thermodynamics and fluid phase equilibria fluid flow material and energy balances heat exchangers reactor design distillation absorption and liquid extraction This new edition includes many examples simulated by recent software packages In addition fluid package information is introduced in correlation to the numerical problems in book An updated solutions manual and PowerPoint slides are also provided in addition to new video guides and UniSim program files

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Information Sources in Engineering Roderick A. Macleod,Jim Corlett,2012-04-17 The current thoroughly revised and updated edition of this approved title evaluates information sources in the field of technology It provides the reader not only with information of primary and secondary sources but also analyses the details of information from all the important technical fields including environmental technology biotechnology aviation and defence nanotechnology industrial design material science security and health care in the workplace as well as aspects of the fields of chemistry electro technology and mechanical engineering The sources of information presented also contain publications available in printed and electronic form such as books journals electronic magazines technical reports dissertations scientific reports articles from conferences meetings and symposiums patents and patent information technical standards products electronic full text services abstract and indexing services bibliographies reviews internet sources reference works and publications of professional associations Information Sources in Engineering is aimed at librarians and information scientists in technical fields as well as non professional information specialists who have to provide information about technical issues Furthermore this title is of great value to students and people with technical professions

Separation Processes in Waste Minimization Robert B. Long,2020-09-10 This work offers an accessible discussion of current and emerging separation processes used for waste minimization showing how the processes work on a day to day basis and providing troubleshooting tips for equipment that doesn t function according to design specifications It describes the fundamentals of over 30 processes types of equipment available vendors and common problems encountered in operations with hazardous waste Chemical Engineering Volume 2 J H Harker,J R Backhurst,J.F. Richardson,2013-10-22

Chemical Engineering Volume 2 covers the properties of particulate systems including the character of individual particles and their behaviour in fluids Sedimentation of particles both singly and at high concentrations flow in packed and fluidised beads and filtration are then examined The latter part of the book deals with separation processes such as distillation and gas absorption which illustrate applications of the fundamental principles of mass transfer introduced in Chemical Engineering Volume 1 In conclusion several techniques of growing importance adsorption ion exchange chromatographic and membrane separations and process intensification are described A logical progression of chemical engineering concepts volume 2 builds on fundamental principles contained in Chemical Engineering volume 1 and these volumes are fully cross referenced Reflects the growth in complexity and stature of chemical engineering over the last few years Supported with further reading at the end of each chapter and graded problems at the end of the book

European Symposium on Computer Aided Process Engineering - 11 R. Gani, S.B. Jørgensen, 2001-04-30 This book contains papers presented at the 11th Symposium of Computer Aided Process Engineering ESCAPE 11 held in Kolding Denmark from May 27 30 2001 The objective of ESCAPE 11 is to highlight the use of computers and information technology tools that is the traditional CAPE topics as well as the new CAPE topics of current and future interests The main theme for ESCAPE 11 is process and tools integration with emphasis on hybrid processing cleaner and efficient technologies process integration computer aided systems for modelling design synthesis control tools integration and industrial case studies application of integrated strategies The papers are arranged in terms of the following themes computer aided control operations computer aided manufacturing process and tools integration and new frontiers in CAPE A total of 188 papers consisting of 5 keynote and 183 contributed papers are included in this book

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Crystallization Process Systems Alan G. Jones, 2002-04-04 Crystallization Process Systems gives a clear concise balanced and up to date presentation of crystallization and solid liquid separation of the crystalline product The information is presented in a coherent concise and logical sequence based on the fundamentals of particulate crystallization processes as systems By emphasising the analysis design and operation of particulate crystallization processes as systems the reader will be able to make a better judgement about the best cheapest and most effective production method to use Presents a coherent concise and logical sequence based on the fundamentals of particulate crystallization processes as systems Emphasis on the design and optimization of the crystallization processing system The Publishers' Trade List Annual ,1981 27th European Symposium on Computer Aided Process Engineering ,2017-09-21 27th European Symposium on Computer Aided Process Engineering Volume 40 contains the papers presented at the 27th European Society of Computer Aided Process Engineering ESCAPE event held in Barcelona October 1 5 2017 It is a valuable resource for chemical engineers chemical process engineers researchers in industry and academia students and consultants for chemical industries Presents findings and discussions from the 27th European Society of Computer Aided Process Engineering ESCAPE event **Tubular Heat Exchangers** Samuel Jorge Marques Cartaxo, 2022-04-19 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 Chemical Engineering Thermodynamics AHUJA, PRADEEP, 2008-12 This book offers a full account of thermodynamic systems in chemical engineering It provides a solid understanding of the basic concepts of the laws of

thermodynamics as well as their applications with a thorough discussion of phase and chemical reaction equilibria At the outset the text explains the various key terms of thermodynamics with suitable examples and then thoroughly deals with the virial and cubic equations of state by showing the P V T pressure molar volume and temperature relation of fluids It elaborates on the first and second laws of thermodynamics and their applications with the help of numerous engineering examples The text further discusses the concepts of exergy standard property changes of chemical reactions thermodynamic property relations and fugacity The book also includes detailed discussions on residual and excess properties of mixtures various activity coefficient models local composition models and group contribution methods In addition the text focuses on vapour liquid and other phase equilibrium calculations and analyzes chemical reaction equilibria and adiabatic reaction temperature for systems with complete and incomplete conversion of reactants

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The Solution Manual containing the complete worked out solutions to chapter end exercises and problems is available for instructors

Engineering Education, 1982

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Chemical Engineering Design Gavin Towler, Ray Sinnott, 2007-11-26 Bottom line For a holistic view of chemical engineering design this book provides as much if not more than any other book available on the topic

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