

Gpsa 13th Edition

Gas Treating: Absorption Theory and Practice provides an introduction to the treatment of natural gas, synthesis gas and flue gas, addressing why it is necessary and the challenges involved. The book concentrates in particular on the absorption–desorption process and mass transfer coupled with chemical reaction. Following a general introduction to gas treatment, the chemistry of CO₂, H₂S and amine systems is described, and selected topics from physical chemistry with relevance to gas treating are presented. Thereafter the absorption process is discussed in detail, column hardware is explained and the traditional mass transfer model mechanisms are presented together with mass transfer correlations. This is followed by the central point of the text in which mass transfer is combined with chemical reaction, highlighting the associated possibilities and problems. Experimental techniques, data analysis and modelling are covered, and the book concludes with a discussion on various process elements which are important in the absorption–desorption process, but are often neglected in its treatment. These include heat exchange, solution management, process flowsheet variations, choice of materials and degradation of absorbents. The text is rounded off with an overview of the current state of research in this field and a discussion of real-world applications. This book is a practical introduction to gas treating for practicing process engineers and chemical engineers working on purification

technologies and gas treatment, in particular, those working on CO₂ abatement processes, as well as post-graduate students in process engineering, chemical engineering and chemistry.

This book explores vegetable fiber composite as an eco-friendly, biodegradable, and sustainable material that has many potential industrial applications. The use of vegetable fiber composite supports the sustainable development goals (SDGs) to utilize more sustainable and greener composite materials, which are also easy to handle and locally easily available with economical production costs. This book presents various types of vegetable fiber composite and its processing methods and treatments to obtain desirable properties for certain applications. The book caters to researchers and students who are working in the field of bio-composites and green materials.

This book presents a new approach that can be applied to complex, integrated individual and social human processes. It provides an alternative means of addressing complexity, better suited for its purpose than and effectively complementing traditional strategies involving isolation and separation assumptions. Network-oriented modeling allows high-level cognitive, affective and social models in the form of (cyclic) graphs to be constructed, which can be automatically transformed into executable simulation models. The modeling format used makes it easy to take into account theories and findings about complex cognitive and social processes, which often involve dynamics based on interrelating cycles. Accordingly, it makes it possible to address complex

phenomena such as the integration of emotions within cognitive processes of all kinds, of internal simulations of the mental processes of others, and of social phenomena such as shared understandings and collective actions. A variety of sample models – including those for ownership of actions, fear and dreaming, the integration of emotions in joint decision-making based on empathic understanding, and evolving social networks – illustrate the potential of the approach. Dedicated software is available to support building models in a conceptual or graphical manner, transforming them into an executable format and performing simulation experiments. The majority of the material presented has been used and positively evaluated by undergraduate and graduate students and researchers in the cognitive, social and AI domains. Given its detailed coverage, the book is ideally suited as an introduction for graduate and undergraduate students in many different multidisciplinary fields involving cognitive, affective, social, biological, and neuroscience domains.

The past decade has witnessed the emergence of participatory Web and social media, bringing people together in many creative ways. Millions of users are playing, tagging, working, and socializing online, demonstrating new forms of collaboration, communication, and intelligence that were hardly imaginable just a short time ago. Social media also helps reshape business models, sway opinions and emotions, and opens up numerous possibilities to study human interaction and collective behavior in an unparalleled scale. This lecture, from a data mining perspective, introduces

*characteristics of social media, reviews representative tasks of computing with social media, and illustrates associated challenges. It introduces basic concepts, presents state-of-the-art algorithms with easy-to-understand examples, and recommends effective evaluation methods. In particular, we discuss graph-based community detection techniques and many important extensions that handle dynamic, heterogeneous networks in social media. We also demonstrate how discovered patterns of communities can be used for social media mining. The concepts, algorithms, and methods presented in this lecture can help harness the power of social media and support building socially-intelligent systems. This book is an accessible introduction to the study of *community detection and mining in social media*. It is an essential reading for students, researchers, and practitioners in disciplines and applications where social media is a key source of data that piques our curiosity to understand, manage, innovate, and excel. This book is supported by additional materials, including lecture slides, the complete set of figures, key references, some toy data sets used in the book, and the source code of representative algorithms. The readers are encouraged to visit the book website for the latest information. Table of Contents: Social Media and Social Computing / Nodes, Ties, and Influence / Community Detection and Evaluation / Communities in Heterogeneous Networks / Social Media Mining*

A Manual of Quick, Accurate Solutions to Everyday Pipeline Engineering Problems

Psychiatry and the Legacies of Eugenics

From Classical and Advanced Mixing Rules to Association Theories

Pipeline Rules of Thumb Handbook

Bioprocess Engineering Principles

Vegetable Fiber Composites and their Technological Applications

Using an applications perspective Thermodynamic Models for Industrial Applications provides a unified framework for the development of various thermodynamic models, ranging from the classical models to some of the most advanced ones. Among these are the Cubic Plus Association Equation of State (CPA EoS) and the Perturbed Chain Statistical Association Fluid Theory (PC-SAFT). These two advanced models are already in widespread use in industry and academia, especially within the oil and gas, chemical and polymer industries. Presenting both classical models such as the Cubic Equations of State and more advanced models such as the CPA, this book provides the critical starting point for choosing the most appropriate calculation method for accurate process simulations. Written by two of the developers of these models, Thermodynamic Models for Industrial Applications emphasizes model selection and model development and includes a useful “which model for which application” guide. It also covers industrial requirements as well as discusses the challenges of thermodynamics in the 21st Century.

Practical Onshore Gas Field Engineering delivers the necessary framework to help engineers understand the needs of the reservoir, including sections on early transmission and during the life of the well. Written from a reservoir perspective, this reference includes methods and

equipment from gas reservoirs, covering the gathering stage at the gas facility for transportation and processing. Loaded with real-world case studies and examples, the book offers a variety of different types of gas fields that demonstrate how surface systems can work through each scenario. Users will gain an increased understanding of today ' s gas system aspects, along with tactics on how to optimize bottom line revenue. As reservoir and production engineers face many challenges in getting gas from the reservoir to the final sales point, especially as a result of the shale boom, a new demand for more facility engineers now exists in the market. This book addresses new challenges in the market and brings new tactics to the forefront. Presents the full lifecycle of the gas surface facility, from reservoir to gathering and transmission Helps users gain experience through case studies that explain successes and failures on a variety of gas fields, including unconventional and shale Teaches how the surface gas facility system and equipment work individually, and as an integrated system Here, in a compact, easy-to-use format, are practical tips, handy formulas, correlations, curves, charts, tables, and shortcut methods that will save engineers valuable time and effort. Hundreds of common sense techniques and calculations help users quickly and accurately solve day-to-day design, operations, and equipment problems. All of the essential symbols, formulae, equations, numbers, graphs and tables needed in engineering are in this useful companion for students and professionals.

Natural Gas Hydrates

Gas Purification

Improved, Sustainable and Clean Options for our Planet

Steam, Its Generation and Use

Petroleum Refining Design and Applications Handbook

Gas Pipeline Hydraulics

14th International Symposium on Process Systems Engineering, Volume 49 brings together the international community of researchers and engineers interested in computing-based methods in process engineering. The conference highlights the contributions of the PSE community towards the sustainability of modern society and is based on the 2021 event held in Tokyo, Japan, July 1-23, 2021. It contains contributions from academia and industry, establishing the core products of PSE, defining the new and changing scope of our results, and covering future challenges. Plenary and keynote lectures discuss real-world challenges (globalization, energy, environment and health) and contribute to discussions on the widening scope of PSE versus the consolidation of the core topics of PSE. Highlights how the Process Systems Engineering community contributes to the sustainability of modern society Establishes the core products of Process Systems Engineering Defines the future challenges of Process Systems Engineering

Fundamentals of Natural Gas Processing explores the natural gas industry from the wellhead to the marketplace. It compiles information from the open literature, meeting proceedings, and experts to accurately depict the state of gas processing technology today and highlight technologies that could become important in the future. This book covers

Project management for oil and gas projects comes with a unique set of challenges that include the management of science, technology, and engineering aspects. Underlining the

specific issues involved in projects in this field, Project Management for the Oil and Gas Industry: A World System Approach presents step-by-step application of project management techniques. Using the Project Management Body of Knowledge (PMBOK®) framework from the Project Management Institute (PMI) as the platform, the book provides an integrated approach that covers the concepts, tools, and techniques for managing oil and gas projects. The authors discuss specialized tools such as plan, do, check, act (PDCA); define, measure, analyze, improve, control (DMAIC); suppliers, inputs, process, outputs, customers (SIPOC); design, evaluate, justify, integrate (DEJI); quality function deployment (QFD); affinity diagrams; flowcharts; Pareto charts; and histograms. They also discuss the major activities in oil and gas risk assessment, such as feasibility studies, design, transportation, utility, survey works, construction, permanent structure works, mechanical and electrical installations, and maintenance. Strongly advocating a world systems approach to managing oil and gas projects and programs, the book covers quantitative and qualitative techniques. It addresses technical and managerial aspects of projects and illustrates the concepts with case examples of applications of project management tools and techniques to real-life project scenarios that can serve as lessons learned for best practices. An in-depth examination of project management for oil and gas projects, the book is a handbook for professionals in the field, a guidebook for technical consultants, and a resource for students.

A comprehensive and example oriented text for the study of chemical process design and

simulation Chemical Process Design and Simulation is an accessible guide that offers information on the most important principles of chemical engineering design and includes illustrative examples of their application that uses simulation software. A comprehensive and practical resource, the text uses both Aspen Plus and Aspen Hysys simulation software. The author describes the basic methodologies for computer aided design and offers a description of the basic steps of process simulation in Aspen Plus and Aspen Hysys. The text reviews the design and simulation of individual simple unit operations that includes a mathematical model of each unit operation such as reactors, separators, and heat exchangers. The author also explores the design of new plants and simulation of existing plants where conventional chemicals and material mixtures with measurable compositions are used. In addition, to aid in comprehension, solutions to examples of real problems are included. The final section covers plant design and simulation of processes using nonconventional components. This important resource: Includes information on the application of both the Aspen Plus and Aspen Hysys software that enables a comparison of the two software systems Combines the basic theoretical principles of chemical process and design with real-world examples Covers both processes with conventional organic chemicals and processes with more complex materials such as solids, oil blends, polymers and electrolytes Presents examples that are solved using a new version of Aspen software, ASPEN One 9 Written for students and academics in the field of process design, Chemical Process Design and Simulation is a practical and accessible guide to the chemical process

design and simulation using proven software.

Historical Studies of Alberta and Beyond

Chemical Process Engineering Volume 1

A World System Approach

Thermodynamic Models for Industrial Applications

Informing, Interacting With, and Mobilising Voters

Sustainable Energy Conversion for Electricity and Coproducts

From 1928 to 1972, the Alberta Sexual Sterilization Act, Canada's lengthiest eugenic policy, shaped social discourses and medical practice in the province. Sterilization programs—particularly involuntary sterilization programs—were responding both nationally and internationally to social anxieties produced by the perceived connection between mental degeneration and heredity. *Psychiatry and the Legacies of Eugenics* illustrates how the emerging field of psychiatry and its concerns about inheritable conditions was heavily influenced by eugenic thought and contributed to the longevity of sterilization practices in Western Canada. Using institutional case studies, biographical accounts, and media developments from Western Canada and Europe, contributors trace the impact of eugenics on nursing practices, politics, and social attitudes, while investigating the ways in which eugenics discourses persisted unexpectedly and

remained mostly unexamined in psychiatric practice. This volume further extends historical analysis into considerations of contemporary policy and human rights issues through a discussion of disability studies as well as compensation claims for victims of sterilization. In impressive detail, contributors shed new light on the medical and political influences of eugenics on psychiatry at a key moment in the field's development. With contributions by Ashley Barlow, W. Mikkel Dack, Diana Mansell, Guel A. Russell, Celeste Tuong Vy Sharpe, Henderikus J. Stam, Douglas Wahlsten, Paul J. Weindling, Robert A. Wilson, Gregor Wolbring, and Marc Workman.

This is the most exhaustive study to date on natural gas hydrates. In spite of their importance, hydrates are misunderstood, and misconceptions abound. This book provides an accurate review of what hydrates are and under what conditions they will form, and it provides the engineer with the methods to predict the occurrences of hydrates. The petroleum industry spends millions every year to combat the formation of hydrates, the solid, crystalline compounds that form from water and small molecules, damaging equipment and plugging transmission lines. Understanding how, when, and where they form and using this knowledge to apply remedies in practical applications are crucial. * The most comprehensive study of natural gas hydrates * A manual for the engineer or textbook for the student * Contains cutting-

edge solutions to natural gas hydrate problems

The Law of Journalism and Mass Communication, Sixth Edition, by Robert Trager, Susan Dente Ross, and Amy Reynolds offers a clear and engaging introduction to media law with comprehensive coverage and analysis of key cases for future journalists and media professionals. You are introduced to key legal issues at the start of each chapter, building your critical thinking skills before progressing to real-world landmark cases that demonstrate how media law is applied today.

Contemporary examples, emerging legal topics, international issues, and cutting-edge research all help you to retain and apply principles of media law in practice. The thoroughly revised Sixth Edition has been reorganized and shortened to 12 chapters, streamlining the content and offering instructors more opportunities for classroom activities. This edition also goes beyond the judiciary—including discussions of tweets and public protests, alcohol ads in university newspapers, global data privacy and cybersecurity, libel on the internet, and free speech on college campuses—to show how the law affects the ways mass communication works and how people perceive and receive that work.

This is the fifth volume in a series of books focusing on natural gas engineering, focusing on the extraction and disposal of acid gas. This volume includes information for both upstream and downstream

operations, including chapters on modeling, carbon capture, chemical and thermodynamic models, and much more. Written by some of the most well-known and respected chemical and process engineers working with natural gas today, the chapters in this important volume represent the most cutting-edge and state-of-the-art processes and operations being used in the field. Not available anywhere else, this volume is a must-have for any chemical engineer, chemist, or process engineer working with natural gas. There are updates of new technologies in other related areas of natural gas, in addition to the extraction and disposal of acid gas, including testing, reservoir simulations, acid gas injection, and natural gas hydrate formations. Advances in Natural Gas Engineering is an ongoing series of books meant to form the basis for the working library of any engineer working in natural gas today. Every volume is a must-have for any engineer or library.

Future Energy

The Three Sisters

Common Operating Problems and Practical Solutions

An Engineering Data Book

A Single-Frequency Approach

Gas Treating

* Offers detailed description of process chemistry and thermodynamics and product by-product specifications of plants * Contributors are drawn from the largest petroleum

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producers in the world, including Chevron, Mobil, Shell, Exxon, UOP, and Texaco * Covers the very latest technologies in the field of petroleum refining processes * Completely updated 3rd Edition features 50% all new material

Aircraft Propulsion and Gas Turbine Engines, Second Edition builds upon the success of the book 's first edition, with the addition of three major topic areas: Piston Engines with integrated propeller coverage; Pump Technologies; and Rocket Propulsion. The rocket propulsion section extends the text 's coverage so that both Aerospace and Aeronautical topics can be studied and compared. Numerous updates have been made to reflect the latest advances in turbine engines, fuels, and combustion. The text is now divided into three parts, the first two devoted to air breathing engines, and the third covering non-air breathing or rocket engines.

Now in its sixth edition, Pipeline Rules of Thumb Handbook has been and continues to be the standard resource for any professional in the pipeline industry. A practical and convenient reference, it provides quick solutions to the everyday pipeline problems that the pipeline engineer, contractor, or designer faces. Pipeline Rules of Thumb Handbook assembles hundreds of shortcuts for pipeline construction, design, and engineering. Workable "how-to" methods, handy formulas, correlations, and curves all come together in this one convenient volume. Save valuable time and effort using the thousands of illustrations, photographs, tables, calculations, and formulas available in an easy to use format Updated and revised with new material on project scoping, plastic pipe data, HDPE pipe data, fiberglass pipe, NEC tables, trenching, and much more A book you will use day to day guiding every step of pipeline design and maintenance

From upstream to downstream, Heat Exchangers are utilized in every stage of the petroleum value stream. An integral piece of equipment, heat exchangers are among the most confusing and problematic pieces of equipment in the petroleum processing operations. This is especially true for engineers just entering the field or seasoned engineers that must keep up with the latest methods for in-shop and in-service inspection, repair, alteration and re-rating of equipment. Heat Exchanger Equipment Field Manual provides engineers and operators with an easy to understand working manual to the recent developments in heat exchanger technology and in the diagnosis and correction of operating problems. The objective of this book is to provide the reader with sufficient information to make better logical choices in designing and operating the system. Heat Exchanger Equipment Field Manual provides an indispensable means for the determination of possible failures and for the recognition of the optimization potential of the respective heat exchanger. Step-by-step procedure on how to design, perform in-shop and in-field inspections and repairs, perform alterations and re-rate equipment Select the correct heat transfer equipment for a particular application Apply heat transfer principles to design, select and specify heat transfer equipment Evaluate the performance of heat transfer equipment and recommend solutions to problems Control schemes for typical heat transfer equipment application

Flow Assurance Solids in Oil and Gas Production

Design, Analysis, Simulation, Integration, and Problem Solving with Microsoft Excel-UniSim Software for Chemical Engineers Computation, Physical Property, Fluid Flow, Equipment and Instrument Sizing

A Software-Defined GPS and Galileo Receiver

Emulsions and Oil Treating Equipment
Geopolymer Chemistry and Applications
Fundamentals of Natural Gas Processing

What can be done about the major concerns of our Global Economy on energy, global warming, sustainable development, user-friendly processes, and green chemistry? Here is an important contribution to the mastering of these phenomena today. Written by Joseph Davidovits, the inventor and founder of geopolymer science, it is an introduction to the subject for the newcomers, students, engineers and professionals. You will find science, chemistry, formulas and very practical information (including patents' excerpts) covering: - The mineral polymer concept: silicones and geopolymers, - Macromolecular structure of natural silicates and aluminosilicates, - Scientific Tools, X-rays, FTIR, NMR, - The synthesis of mineral geopolymers, Poly(siloxonate) and polysilicate, soluble silicate, Chemistry of (Na, K)-oligo-sialates: hydrous aluminosilicate gels and zeolites, Kaolinite / Hydrosodalite-based

geopolymer, Metakaolin MK-750-based geopolymer, Calcium-based geopolymer, Rock-based geopolymer, Silica-based geopolymer, Fly ash-based geopolymer, Phosphate-based geopolymer, Organic-mineral geopolymer, - Properties: physical, chemical and long-term durability, - Applications: Quality controls, Development of user-friendly systems, Castable geopolymer, industrial and decorative applications, Geopolymer / fiber composites, Foamed geopolymer, Geopolymers in ceramic processing, Manufacture of geopolymer cement, Geopolymer concrete, Geopolymers in toxic and radioactive waste management. It is a textbook, a reference book instead of being a collection of scientific papers. Each chapter is followed by a bibliography of the relevant published literature including 80 patents, 125 tables, 363 figures, 560 references, 720 authors cited, representing the most up to date contributions of the scientific community. The industrial applications of geopolymers with engineering procedures and design of processes are also covered in this

book

This book is concerned with the steady state hydraulics of natural gas and other compressible fluids being transported through pipelines. Our main approach is to determine the flow rate possible and compressor station horsepower required within the limitations of pipe strength, based on the pipe materials and grade. It addresses the scenarios where one or more compressors may be required depending on the gas flow rate and if discharge cooling is needed to limit the gas temperatures. The book is the result of over 38 years of the authors' experience on pipelines in North and South America while working for major energy companies such as ARCO, El Paso Energy, etc.

This guide provides state-of-the-art information in order to maximise the quality and minimise the risks during donation, procurement, testing, processing, preservation, storage and distribution of tissues and cells. As with all transplanted material of human origin, tissues and cells carry risks of disease transmission, which must be

controlled by the application of scrupulous donor selection criteria (including testing) and comprehensive quality systems. The idea behind this guide is to help professionals on a practical level by providing generic guidance that will help improve the rate of successful clinical application of tissues and cells. The guide makes reference to EU mandatory requirements where appropriate and describes generally-accepted good practice. It has been divided into two parts. Part A contains general requirements applicable to all establishments involved in the donation, procurement, testing, processing, preservation, storage and distribution of tissues and cells. Part B contains specific guidelines and requirements for the different tissue and/or cell types

This is the seventh volume in the series, Advances in Natural Gas Engineering, focusing on carbon dioxide (CO₂) capture and sequestration, acid gas injection, and enhanced oil recovery, the “three sisters” of natural gas engineering. This volume includes information for both

upstream and downstream operations, including chapters detailing the most cutting-edge techniques in acid gas injection, carbon capture, chemical and thermodynamic models, and much more. Written by some of the most well-known and respected chemical and process engineers working with natural gas today, the chapters in this important volume represent the most state-of-the-art processes and operations being used in the field. Not available anywhere else, this volume is a must-have for any chemical engineer, chemist, or process engineer in the industry. Advances in Natural Gas Engineering is an ongoing series of books meant to form the basis for the working library of any engineer working in natural gas today.

Law, Theory and Practice

Chemical Process Design and Simulation: Aspen Plus and Aspen Hysys Applications

Rules of Thumb, Process Planning, Scheduling, and Flowsheet Design, Process Piping Design, Pumps, Compressors, and

***Process Safety Incidents, Volume 2
Handbook of Liquefied Natural Gas
Community Detection and Mining in Social Media***

Comprehensive and a fundamental approach to the study of sustainable fuel conversion for the generation of electricity and for coproducing synthetic fuels and chemicals Both electricity and chemicals are critical to maintain our modern way of life however environmental impacts have to be factored in to sustain this type of lifestyle. "Sustainable Energy Conversion for Electricity and Coproducts" provides a unified, comprehensive and a fundamental approach to the study of sustainable fuel conversion in order to generate electricity and optionally coproduce synthetic fuels and chemicals. The book starts with an introduction to energy systems and describes the various forms of energy sources: natural gas, petroleum, coal, biomass, and other renewables and nuclear. Their distribution is discussed in order to emphasize the uneven availability and finiteness of some of these resources. Each topic in the book is covered in sufficient detail from a theoretical and practical applications standpoint essential for engineers involved in the development of the modern power plant. "Sustainable Energy Conversion for Electricity and Coproducts" features: "Impact on the environment along with an introduction to the supply chain and life cycle analyses in order to emphasize the holistic approach required for sustainability. Not only are the emissions of criteria pollutants addressed but also the major greenhouse gas CO₂ which is essential for the overall sustainability. Underlying principles of physics and their application to engineering including thermodynamics, fluid flow, and heat and mass transfer which form the foundation for the more technology specific chapters that follow. Details specific subjects within energy plants such as prime movers, systems engineering, Rankine cycle and the Brayton-Rankine combined cycle, and emerging

technologies such as high temperature membranes and fuel cells etc... Sustainable energy conversion is an extremely active field of research at this time. By covering the multidisciplinary fundamentals in sufficient depth, this book is largely self-contained suitable for the different engineering disciplines, as well as chemists working in this field of sustainable energy conversion. Ashok Rao, PhD, is a well-acknowledged national and international leader in the field of energy conversion and has made wide-ranging contributions in these fields over the past 40 years in industry as well as at the University of California's Advanced Power and Energy Program where he is currently its Chief Scientist for Power Systems. While working at Fluor as a Director in Process Engineering, he was honoured by being made a Senior Fellow. In 2011 he was invited to be the associate editor for the ASME Journal of Engineering for Gas Turbines and Power and a keynote speaker at the 2011 International Conference on Applied Energy, Perugia, Italy. He also has a number of patents to his credit in the field of energy conversion as well as numerous high quality publications.

A must-read for any practicing engineer or student in this area There is a renaissance that is occurring in chemical and process engineering, and it is crucial for today's scientists, engineers, technicians, and operators to stay current. This book offers the most up-to-date and comprehensive coverage of the most significant and recent changes to petroleum refining, presenting the state-of-the-art to the engineer, scientist, or student. Useful as a textbook, this is also an excellent, handy go-to reference for the veteran engineer, a volume no chemical or process engineering library should be without.

The emergence and refinement of techniques in molecular biology has changed our perceptions of medicine, agriculture and environmental management. Scientific breakthroughs in gene expression, protein engineering and cell fusion are being translated by a strengthening biotechnology industry into revolutionary new products and services. Many a student has been enticed by the promise of

biotechnology and the excitement of being near the cutting edge of scientific advancement. However, graduates trained in molecular biology and cell manipulation soon realise that these techniques are only part of the picture. Reaping the full benefits of biotechnology requires manufacturing capability involving the large-scale processing of biological material. Increasingly, biotechnologists are being employed by companies to work in co-operation with chemical engineers to achieve pragmatic commercial goals. For many years aspects of biochemistry and molecular genetics have been included in chemical engineering curricula, yet there has been little attempt until recently to teach aspects of engineering applicable to process design to biotechnologists. This textbook is the first to present the principles of bioprocess engineering in a way that is accessible to biological scientists. Other texts on bioprocess engineering currently available assume that the reader already has engineering training. On the other hand, chemical engineering textbooks do not consider examples from bioprocessing, and are written almost exclusively with the petroleum and chemical industries in mind. This publication explains process analysis from an engineering point of view, but refers exclusively to the treatment of biological systems. Over 170 problems and worked examples encompass a wide range of applications, including recombinant cells, plant and animal cell cultures, immobilised catalysts as well as traditional fermentation systems. * * First book to present the principles of bioprocess engineering in a way that is accessible to biological scientists * Explains process analysis from an engineering point of view, but uses worked examples relating to biological systems * Comprehensive, single-authored * 170 problems and worked examples encompass a wide range of applications, involving recombinant plant and animal cell cultures, immobilized catalysts, and traditional fermentation systems * 13 chapters, organized according to engineering sub-disciplines, are grouped in four sections - Introduction, Material and Energy Balances, Physical Processes, and Reactions and Reactors * Each chapter includes a set of problems and

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exercises for the student, key references, and a list of suggestions for further reading * Includes useful appendices, detailing conversion factors, physical and chemical property data, steam tables, mathematical rules, and a list of symbols used * Suitable for course adoption - follows closely curricula used on most bioprocessing and process biotechnology courses at senior undergraduate and graduate levels.

The most complete guide of its kind, this is the standard handbook for chemical and process engineers. All new material on fluid flow, long pipe, fractionators, separators and accumulators, cooling towers, gas treating, blending, troubleshooting field cases, gas solubility, and density of irregular solids. This substantial addition of material will also include conversion tables and a new appendix, " Shortcut Equipment Design Methods. " This convenient volume helps solve field engineering problems with its hundreds of common sense techniques, shortcuts, and calculations. Here, in a compact, easy-to-use format, are practical tips, handy formulas, correlations, curves, charts, tables, and shortcut methods that will save engineers valuable time and effort. Hundreds of common sense techniques and calculations help users quickly and accurately solve day-to-day design, operations, and equipment problems.

Guide to the Quality and Safety of Tissues and Cells for Human Application

Acid Gas Injection, Carbon Capture and Sequestration, and Enhanced Oil Recovery

Heat Exchanger Equipment Field Manual

14th International Symposium on Process Systems Engineering

Network-Oriented Modeling

Selection, Sizing and Troubleshooting

The Only Official Google Cloud Study Guide The Official Google Cloud Certified

Associate Cloud Engineer Study Guide, provides everything you need to prepare for this important exam and master the skills necessary to land that coveted Google Cloud Engineering certification. Beginning with a pre-book assessment quiz to evaluate what you know before you begin, each chapter features exam objectives and review questions, plus the online learning environment includes additional complete practice tests. Written by Dan Sullivan, a popular and experienced online course author for machine learning, big data, and Cloud topics, Official Google Cloud Certified Associate Cloud Engineer Study Guide is your ace in the hole for deploying and managing Google Cloud Services.

- *Select the right Google service from the various choices based on the application to be built*
- *Compute with Cloud VMs and managing VMs*
- *Plan and deploying storage*
- *Network and configure access and security*

Google Cloud Platform is a leading public cloud that provides its users to many of the same software, hardware, and networking infrastructure used to power Google services. Businesses, organizations, and individuals can launch servers in minutes, store petabytes of data, and implement global virtual clouds with the Google Cloud Platform. Certified Associate Cloud Engineers have demonstrated the knowledge and skills needed to deploy and operate infrastructure, services, and networks in the Google Cloud. This exam guide is designed to help you understand the Google Cloud Platform in depth so that you can meet the needs of those operating resources in the Google Cloud.

This book explore the use of new technologies in the area of satellite navigation receivers. In order to construct a reconfigurable receiver with a wide range of applications, the authors discuss receiver architecture based on software-defined radio techniques. The presentation unfolds in a user-friendly style and goes from the basics to cutting-edge research. The book is aimed at applied mathematicians, electrical engineers, geodesists, and graduate students. It may be used as a textbook in various GPS technology and signal processing courses, or as a self-study reference for anyone working with satellite navigation receivers.

"Steam, Its Generation and Use" by Babcock & Wilcox Company. Published by Good Press. Good Press publishes a wide range of titles that encompasses every genre. From well-known classics & literary fiction and non-fiction to forgotten—or yet undiscovered gems—of world literature, we issue the books that need to be read. Each Good Press edition has been meticulously edited and formatted to boost readability for all e-readers and devices. Our goal is to produce eBooks that are user-friendly and accessible to everyone in a high-quality digital format.

*Future EnergyImproved, Sustainable and Clean Options for our PlanetElsevier
Pocket Guide to Chemical Engineering*

Project Management for the Oil and Gas Industry

Campaigning on Facebook in the 2019 European Parliament Election

Handbook of Petroleum Refining Processes

A Manual of Quick, Accurate Solutions to Everyday Process Engineering Problems

Practical Onshore Gas Field Engineering

As the demand for global energy increases, fact-based evaluations of alternative energy sources are needed in order to address the growing interest in how energy is produced, provided, and transported in sustainable ways. Future Energy, Second Edition provides scientists and decision makers with the knowledge they need to understand the relative importance and magnitude of various energy production methods in order to make the energy decisions needed for sustaining development and dealing with climate change. The second edition of Future Energy looks at the present energy situation and extrapolates to future scenarios related to global warming and the increase of carbon dioxide and other greenhouse gases in the atmosphere. This thoroughly revised and updated edition contains over 30 chapters on all aspects of future energy, each chapter updated and expanded by expert scientists and engineers in their respective fields providing an unbiased and balanced view of the future of energy. Provides readers with an up-to-date overview of available energy options, both traditional and renewable, as well as the necessary tools to

make informed decisions regarding selection, use, and environmental impacts. Covers a wide spectrum of future energy resources presented in a single book with chapters written by experts of the particular field Eleven new chapters including chapters on: solar heating, energy resources in developing nations and frontiers in oil and gas, Arctic drilling and unconventional oil and gas sources, thorium in nuclear fission, ethanol and other options for future transport fuel, fracking, smart grids, new batteries, environmental issues and the energy options for China

The problem of removing water which is emulsified with produced oil has grown more widespread and often times more difficult as producers attempt to access more difficult reserves. This practical guide is designed to help engineers and operators develop a "feel" for selection, sizing, and troubleshooting emulsion equipment. These skills are of vital importance to ensure low operating costs and to meet crude export quality specifications. The book is written for engineers and operators, who need advanced knowledge of the numerous techniques and the equipment used to destabilize and resolve petroleum emulsions problems. In *Emulsions and Oil Treating Equipment: Selection, Sizing and Troubleshooting* the author provides engineers and operators with a guide to understanding emulsion

theory, methods and equipment, and practical design of a treating system. Comprehensive in its scope, the author explains methods such as: demulsifiers, temperature, electrostatics and non-traditional methods of modulated or pulsed voltage control, as well as equipment such as: electrostatic treater (dehydrator), separator, gunbarr heater-treater and free water knockout. Written in a "how to" format, it brings together hundreds of methods, handy formulas, diagrams and tables in one convenient book. Detailed coverage emulsion equipment and removal methods Tips for selecting, sizing, and operating emulsion equipment Overview of emulsion theory and factors affecting treatment methods Packed with equipment diagrams, worked out calculations covers equipment and removal methods Liquefied natural gas (LNG) is a commercially attractive phase of the commodity that facilitates the efficient handling and transportation of natural gas around the world. The LNG industry, using technologies proven over decades of development, continues to expand its markets, diversify its supply chains and increase its share of the global natural gas trade. The Handbook of Liquefied Natural Gas is a timely book as the industry is currently developing new large sources of supply and the technologies have evolved in recent years to enable offshore infrastructure to develop

and handle resources in more remote and harsher environments. It is the only book of its kind, covering the many aspects of the LNG supply chain from liquefaction to regasification by addressing the LNG industries' fundamentals and markets, as well as detailed engineering and design principles. A unique, well-documented, and forward-thinking work, this reference book provides an ideal platform for scientists, engineers, and other professionals involved in the LNG industry to gain a better understanding of the key basic and advanced topics relevant to LNG projects in operation and/or in planning and development. Highlights the developments in the natural gas liquefaction industries and the challenges in meeting environmental regulations Provides guidelines in utilizing the full potential of LNG assets Offers advices on LNG plant design and operation based on proven practices and design experience Emphasizes technology selection and innovation with focus on a "fit-for-purpose design Updates code and regulation, safety, and security requirements for LNG applications

Written by two of the most prolific and respected chemical engineers in the world, this groundbreaking two-volume set is the "new standard" in the industry, offering engineers and students alike the most up-to-date,

comprehensive, and state-of-the-art coverage of processes and best practices in the field today. This first new volume in a two-volume set explores and describes integrating new tools for engineering education and practice for better utilization of the existing knowledge on process design. Useful not only for students, professors, scientists and practitioners, especially process, chemical, mechanical and metallurgical engineers, it is also a valuable reference for other engineers, consultants, technicians and scientists concerned about various aspects of industrial design. The text can be considered as a complementary text to process design for senior and graduate students as well as a hands-on reference work or refresher for engineers at entry level. The contents of the book can also be taught in intensive workshops in the oil, gas, petrochemical, biochemical and process industries. The book provides a detailed description and hands-on experience on process design in chemical engineering, and it is an integrated text that focuses on practical design with new tools, such as Excel spreadsheets and UniSim simulation software. Written by two industry and university's most trustworthy and well-known authors, this book is the new standard in chemical, biochemical, pharmaceutical, petrochemical and petroleum refining.

Covering design, analysis, simulation, integration, and, perhaps most importantly, the practical application of Microsoft Excel-UniSim software, this is the most comprehensive and up-to-date coverage of all of the latest developments in the industry. It is a must-have for any engineer or student's library.

Rules of Thumb for Chemical Engineers

Acid Gas Extraction for Disposal and Related Topics

Global Corruption

Handbook of Petroleum Processing

Addressing Complexity of Cognitive, Affective and Social Interactions

Absorption Theory and Practice

This extensively updated second edition of the already valuable reference targets research chemists and engineers who have chosen a career in the complex and essential petroleum industry, as well as other professionals just entering the industry who seek a comprehensive and accessible resource on petroleum processing. The handbook describes and discusses the key components and processes that make up the petroleum refining industry. Beginning with the basics of crude oils and their nature, it continues with the commercial products derived from refining and with related issues concerning their environmental impact. More in depth coverage of many topics previously covered in the first edition, such as

hydraulic fracturing or fracking as it is often termed, help ensure this reference remains a relevant and up-to-date resource. At its core is a complete overview of the processes that make up a modern refinery, plus a brief history of the development of processes. Also described in detail are design techniques, operations and in the case of catalytic units, the chemistry of the reaction routes. These discussions are supported by calculation procedures and examples, which enable readers to use today's simulation-software packages. The handbook also covers off-sites and utilities, as well as environmental and safety aspects relevant to the industry. The chapter on refinery planning covers both operational planning and the decision making procedures for new or revamped processes. Major equipment used in the industry is reviewed along with details and examples of the process specifications for each. An extensive glossary and dictionary of the terms and expressions used in petroleum refining, plus appendices supplying data such as converging factors and selected crude oil assays, as well as an example of optimizing a refinery configuration using linear programming are all included to aid the reader. The 2nd edition of the Handbook of Petroleum Processing is an indispensable desk reference for chemists and engineers as well as an essential part of the libraries of universities with a chemical engineering faculty and oil refineries and engineering firms performing support functions or construction. The precipitation and deposition of solids are a major challenge in the production of oil and gas. Flow assurance solids are formed because of unavoidable changes in temperature, pressure and composition of the oil-gas-water flowstream, from

reservoir conditions to processing conditions. The advent of subsea production and the increased exploitation of heavy crudes have made flow assurance issues dominant in ensuring efficient and safe exploitation of hydrocarbon assets. Five troublesome flow assurance solids are described in the book: asphaltene, paraffin wax, natural gas hydrate, naphthenate and inorganic scale. These big-five solids are presented in stand-alone chapters. Each chapter is designed to be readable without clutter. Derivations of equations and descriptions of supporting details are given in several appendices. The book is intended for professional engineers and natural scientist working in E&P companies, engineering companies, service companies and specialized companies. An understanding of the big-five solids is required throughout the lifetime of oil and gas assets, from early development to abandonment. The technical, safety and environmental risks associated with deposition problems in near-wellbore formations, production tubing, wellhead equipment, flowlines and processing facilities, are relevant for decisions in the oil and gas industry and in outside regulatory and financial entities.

This book investigates how political parties from 12 European countries used Facebook to inform, interact with and mobilise voters at the 2019 European Parliament election. Following a joint theoretical framework and method, the results of a content analysis of more than 14,000 Facebook posts are presented. Country specific chapters are followed by analyses of European parties Facebook campaigning, the spread of populism and the use of Facebook ads by the parties. The final chapter compares all countries showing that campaigns are more

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strongly shaped by the national than by the European political context. Facebook is used for campaigning as usual; parties inform and persuade but neglect the platforms mobilisation and particularly interactive affordances.

A Guide for Engineers

The Law of Journalism and Mass Communication

Official Google Cloud Certified Associate Cloud Engineer Study Guide

Aircraft Propulsion and Gas Turbine Engines

Principles, Technologies, and Equipment