

Process Engineering Oil And Gas Handbook

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Shale Oil and Gas Handbook - Sohrab Zendehboudi 2016-11-22
Shale Oil and Gas Handbook: Theory, Technologies, and Challenges provides users with information on how shale oil and gas exploration has revolutionized today's energy industry. As activity has boomed and job growth continues to increase, training in this area for new and experienced engineers is essential. This book provides comprehensive information on both the engineering design and research aspects of this emerging industry. Covering the full spectrum of basic definitions, characteristics, drilling techniques, and processing and extraction technologies, the book is a great starting point to educate oil and gas personnel on today's shale industry. Critical topics covered include characterization of shale gas, theory and methods, typical costs, and obstacles for exploration and drilling, R&D and technology development in shale production, EOR methods in shale oil reservoirs, and the current status and impending challenges for shale oil and gas, including the inevitable future prospects relating to worldwide development. Reveals all the basic information needed to quickly understand today's shale oil and gas industry, including advantages and disadvantages, equipment and costs, flow diagrams, and processing stages Evenly distributes coverage between oil and gas into two parts, as well as upstream and downstream content Provides a practical handbook with real-world case

studies and problem examples, including formulas and calculations
Natural Gas Engineering and Safety Challenges - G.G. Nasr 2014-08-02
Providing a critical and extensive compilation of the downstream processes of natural gas that involve the principle of gas processing , transmission and distribution, gas flow and network analysis, instrumentation and measurement systems and its utilisation, this book also serves to enrich readers understanding of the business and management aspects of natural gas and highlights some of the recent research and innovations in the field. Featuring extensive coverage of the design and pipeline failures and safety challenges in terms of fire and explosions relating to the downstream of natural gas technology, the book covers the needs of practising engineers from different disciplines, who may include project and operations managers, planning and design engineers as well as undergraduate and postgraduate students in the field of gas, petroleum and chemical engineering. This book also includes several case studies to illustrate the analysis of the downstream process in the gas and oil industry. Of interest to researchers is the field of flame and mitigation of explosion: the fundamental processes involved are also discussed, including outlines of contemporary and possible future research and challenges in the different fields.

Shale Oil and Gas Handbook - Sohrab Zendehboudi 2016-11-19

Shale Oil and Gas Handbook: Theory, Technologies, and Challenges provides users with information on how shale oil and gas exploration has revolutionized today's energy industry. As activity has boomed and job growth continues to increase, training in this area for new and experienced engineers is essential. This book provides comprehensive information on both the engineering design and research aspects of this emerging industry. Covering the full spectrum of basic definitions, characteristics, drilling techniques, and processing and extraction technologies, the book is a great starting point to educate oil and gas personnel on today's shale industry. Critical topics covered include characterization of shale gas, theory and methods, typical costs, and obstacles for exploration and drilling, R&D and technology development in shale production, EOR methods in shale oil reservoirs, and the current status and impending challenges for shale oil and gas, including the inevitable future prospects relating to worldwide development. Reveals all the basic information needed to quickly understand today's shale oil and gas industry, including advantages and disadvantages, equipment and costs, flow diagrams, and processing stages Evenly distributes coverage between oil and gas into two parts, as well as upstream and downstream content Provides a practical handbook with real-world case studies and problem examples, including formulas and calculations

Dictionary of Oil, Gas, and Petrochemical Processing - Alireza Bahadori 2013-12-04

In industry, miscommunication can cause frustration, create downtime, and even trigger equipment failure. By providing a common ground for more effective discourse, the Dictionary of Oil, Gas, and Petrochemical Processing can help eliminate costly miscommunication. An essential resource for oil, gas, and petrochemical industry professionals, engineer *Fundamentals of Oil and Gas Processing* - Yasser Kassem 2018-11-25
The book includes: Basic information of oil and gas treatment, including process calculations. Gas properties, gas calculations, and process vessel sizing and selection. Operation and design of separators, heater treaters, desalters, stabilization and sweetening facilities. Basic of fluid

measurement, process instrumentation and control, and pressure relief systems. The book is very useful for Engineers, chemists, and technicians in oil and gas production and processing sections.

Rules of Thumb for Petroleum Engineers - James G. Speight 2017-02-28
Finally, there is a one-stop reference book for the petroleum engineer which offers practical, easy-to-understand responses to complicated technical questions. This is a must-have for any engineer or non-engineer working in the petroleum industry, anyone studying petroleum engineering, or any reference library. Written by one of the most well-known and prolific petroleum engineering writers who has ever lived, this modern classic is sure to become a staple of any engineer's library and a handy reference in the field. Whether open on your desk, on the hood of your truck at the well, or on an offshore platform, this is the only book available that covers the petroleum engineer's rules of thumb that have been compiled over decades. Some of these "rules," until now, have been "unspoken but everyone knows," while others are meant to help guide the engineer through some of the more recent breakthroughs in the industry's technology, such as hydraulic fracturing and enhanced oil recovery. The book covers every aspect of crude oil, natural gas, refining, recovery, and any other area of petroleum engineering that is useful for the engineer to know or to be able to refer to, offering practical solutions to everyday engineering problems and a comprehensive reference work that will stand the test of time and provide aid to its readers. If there is only one reference work you buy in petroleum engineering, this is it.

Handbook of Natural Gas Transmission and Processing - Saeid Mokhatab 2012-07-02

Acquire the tools and techniques that will help meet the world's growing natural gas demand. *Handbook of Natural Gas Transmission and Processing*, 2nd Edition gives engineers and managers complete coverage of natural gas transmission and processing in the most rapidly growing sector to the petroleum industry. Emphasizing the practical aspects of natural gas production over the theoretical, the authors provide a unique discussion of new technologies that are energy efficient and environmentally appealing at the same time. This 2nd edition

examines ways to select the best processing route for optimal design of gas-processing plants and includes three new chapters on dynamics of process controls, process modeling and simulation and optimal design of gas processing plants. Both Chapter 7 (Acid Gas Treating) and Chapter 9 (Natural Gas Dehydration) are heavily revised. The objective of this work is to provide plant designers and owners/operators methods to decrease construction costs and total cost of ownership while addressing reliability and availability.

Working Guide to Petroleum and Natural Gas Production Engineering - William Lyons 2009-09-16

Working Guide to Petroleum and Natural Gas Production Engineering provides an introduction to key concepts and processes in oil and gas production engineering. It begins by describing correlation and procedures for predicting the physical properties of natural gas and oil. These include compressibility factor and phase behavior, field sampling process and laboratory measurements, and prediction of a vapor-liquid mixture. The book discusses the basic parameters of multiphase fluid flow, various flow regimes, and multiphase flow models. It explains the natural flow performance of oil, gas, and the mixture. The final chapter covers the design, use, function, operation, and maintenance of oil and gas production facilities; the design and construction of separators; and oil and gas separation and treatment systems. Evaluate well inflow performance Guide to properties of hydrocarbon mixtures Evaluate Gas production and processing facilities

Refining Processes Handbook - Surinder Parkash, Ph. D 2003-10-16 Besides covering topics like catalytic cracking, hydrocracking, and alkylation, this volume has chapters on waste water treatment and the economics of managing or commissioning the design of a petroleum refinery. Found only in this volume is material on operating a jointly owned and operated refinery. (Over the last decade, the ownership of many refineries has shifted to small companies, from the large, integrated companies. Because of this shift, many refineries are now jointly owned and operated.) Filled with handy process flow diagrams, this volume is the only reference that a chemical engineer or process

manager in a petroleum refinery needs for answers to everyday process and operations questions. * Covers the technologies and operations of petroleum refineries * Provides material on operating a jointly owned and operated refinery * Gives readers a comprehensive introduction to petroleum refining, as well as a full reference to engineers in the field Handbook of Natural Gas Transmission and Processing - Saeid Mokhatab 2018-10-16

Written by an internationally-recognized team of natural gas industry experts, the fourth edition of Handbook of Natural Gas Transmission and Processing is a unique, well-researched, and comprehensive work on the design and operation aspects of natural gas transmission and processing. Six new chapters have been added to include detailed discussion of the thermodynamic and energy efficiency of relevant processes, and recent developments in treating super-rich gas, high CO₂ content gas, and high nitrogen content gas with other contaminants. The new material describes technologies for processing today's unconventional gases, providing a fresh approach in solving today's gas processing challenges including greenhouse gas emissions. The updated edition is an excellent platform for gas processors and educators to understand the basic principles and innovative designs necessary to meet today's environmental and sustainability requirement while delivering acceptable project economics. Covers all technical and operational aspects of natural gas transmission and processing. Provides pivotal updates on the latest technologies, applications, and solutions. Helps to understand today's natural gas resources, and the best gas processing technologies. Offers design optimization and advice on the design and operation of gas plants.

Handbook of Petroleum Refining Processes, Fourth Edition - Robert Meyers 2016-01-21

This fully revised resource presents the latest technologies and processes for petroleum refining from the world's leading producers. Handbook of Petroleum Refining Processes has become a key reference in the chemical and petroleum engineering markets. The book is unique in that it presents licensable technologies for the refining of petroleum

and production of environmentally acceptable fuels and petrochemical intermediates. The new edition covers the gamut of global refining technologies in light of recent changes to the sources of these fuels, as well as the most up-to-date global environmental regulations.

Contributions come from such major licensors of petroleum refining technology as UOP, Inc., Shell, ExxonMobil Research and Engineering Company (EMRE), Chevron Lummus Global, Phillips 66, Belco, BP, and others. The new edition shifts its emphasis to accommodate the increased production of shale gas and shale oil which is changing the overall mix of hydrocarbon feeds. Declining conventional crude production and the need for regional energy independence continues to drive demand to use lower-cost, alternate feedstocks such as coal, shale oil, and heavy crude. To use alternate feedstocks in existing refineries, many processes need to be modified. The increase in diesel demand and stricter fuel specifications is driving refiners to look for ways to produce higher yields from existing assets. The book reflects these factors, plus the increase in residue conversion; hydrocracking evolving as a primary conversion process; and hydrotreating increasing as a way to treat virgin and cracked middle distillate streams. Offers detailed description of process chemistry and thermodynamics and product by-product specifications of plants Contributors are drawn from the largest petroleum producers in the world, including Chevron, Shell, ExxonMobil, and UOP Covers the very latest technologies in the field of petroleum refining processes and the shift toward shale gas and oil A complete listing and explanation of licensable global technologies for the refining of petroleum and the production of environmentally acceptable fuels and petrochemical intermediates Provides product-by-product specifications and process economics - capital investment annualized capital costs and the price range for each product

Handbook of Petroleum Refining Processes - Robert A. Meyers 2004
Thoroughly revised and expanded by 50%, this edition of this handbook offers petroleum and chemical engineers a comprehensive guide to all aspects of petroleum refining processes. The book features new chapters from Chevron, Mobil, Shell, Exxon, UOP, and Texaco which define

technology, pollution-control, and economic aspects of 60 petroleum refining processes. Each chapter covers the process chemistry and thermodynamics, product and by-product specification of all plants. Also presented are estimates of capital and operating costs, and information on the design of additions to existing refineries and construction of new ones.

Standard Handbook of Petroleum and Natural Gas Engineering: - William C. Lyons 1996-10-16

Petroleum engineering now has its own true classic handbook that reflects the profession's status as a mature major engineering discipline. Formerly titled the Practical Petroleum Engineer's Handbook, by Joseph Zaba and W.T. Doherty (editors), this new, completely updated two-volume set is expanded and revised to give petroleum engineers a comprehensive source of industry standards and engineering practices. It is packed with the key, practical information and data that petroleum engineers rely upon daily. The result of a fifteen-year effort, this handbook covers the gamut of oil and gas engineering topics to provide a reliable source of engineering and reference information for analyzing and solving problems. It also reflects the growing role of natural gas in industrial development by integrating natural gas topics throughout both volumes. More than a dozen leading industry experts-academia and industry-contributed to this two-volume set to provide the best, most comprehensive source of petroleum engineering information available.

Handbook of Liquefied Natural Gas - Saeid Mokhatab 2013-10-15
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

Practical Onshore Gas Field Engineering - David Simpson 2017-07-10
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

Handbook of Offshore Oil and Gas Operations - James G. Speight
2014-10-22

Handbook of Offshore Oil and Gas Operations is an authoritative source providing extensive up-to-date coverage of the technology used in the exploration, drilling, production, and operations in an offshore setting. Offshore oil and gas activity is growing at an expansive rate and this must-have training guide covers the full spectrum including geology, types of platforms, exploration methods, production and enhanced recovery methods, pipelines, and environmental management and impact, specifically worldwide advances in study, control, and prevention of the industry's impact on the marine environment and its living resources. In addition, this book provides a go-to glossary for quick reference. Handbook of Offshore Oil and Gas Operations empowers oil and gas engineers and managers to understand and capture on one of the fastest growing markets in the energy sector today. Quickly become familiar with the oil and gas offshore industry, including deepwater operations Understand the full spectrum of the business, including environmental impacts and future challenges Gain knowledge and exposure on critical standards and real-world case studies

Handbook of Petroleum Processing - David S. J. Jones 2006-01-11
This handbook describes and discusses the features that make up the petroleum refining industry. It begins with a description of the crude oils and their nature, and continues with the saleable products from the refining processes, with a review of the environmental impact. There is a complete overview of the processes that make up the refinery with a brief history of those processes. It also describes design technique, operation, and, in the case of catalytic units, the chemistry of the reaction routes. These discussions are supported by calculation procedures and examples, sufficient to enable input to modern computer simulation packages.

Data Book on Hydrocarbons - J. B. Maxwell 1950

Physical constants. Characteristics of petroleum fractions. Molecular weight. Vapor pressure. Fugacity. Critical properties. Thermal

properties. Density. Viscosity. Combustion. Flow of fluids. Flow of heat. Equilibrium flash vaporization. Fractionating towers.

Handbook of Petroleum Processing - Steven A Treese 2015-08-04

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.

Performance Management for the Oil, Gas, and Process Industries - Robert Bruce Hey 2017-04-06

Performance Management for the Oil, Gas, and Process Industries: A Systems Approach is a practical guide on the business cycle and techniques to undertake step, episodic, and breakthrough improvement in performance to optimize operating costs. Like many industries, the oil, gas, and process industries are coming under increasing pressure to cut costs due to ongoing construction of larger, more integrated units, as well as the application of increasingly stringent environmental policies. Focusing on the 'value adder' or 'revenue generator' core system and the company direction statement, this book describes a systems approach which assures significant sustainable improvements in the business and operational performance specific to the oil, gas, and process industries. The book will enable the reader to: utilize best practice principles of good governance for long term performance enhancement; identify the most significant performance indicators for overall business improvement; apply strategies to ensure that targets are met in agreed upon time frames. Describes a systems approach which assures significant sustainable improvements in the business and operational performance specific to the oil, gas, and process industries Helps readers set appropriate and realistic short-term/ long-term targets with a pre-built facility health checker Elucidates the relationship between PSM, OHS, and Asset Integrity with an increased emphasis on behavior-based safety Discusses specific oil and gas industry issues and examples such as refinery and gas plant performance initiatives and hydrocarbon accounting

Essentials of Oil and Gas Utilities - Alireza Bahadori 2016-02-01

Every oil and gas refinery or petrochemical plant requires sufficient utilities support in order to maintain a successful operation. A comprehensive utilities complex must exist to distribute feedstocks, discharge waste streams, and remains an integrated part of the refinery's infrastructure. Essentials of Oil and Gas Utilities explains these support systems and provides essential information on their essential

requirements and process design. This guide includes water treatment plants, condensate recovery plants, high pressure steam boilers, induced draft cooling towers, instrumentation/plant air compressors, and units for a refinery fuel gas and oil systems. In addition, the book offers recommendations for equipment and flow line protection against temperature fluctuations and the proper preparation and storage of strong and dilute caustic solutions. Essentials of Oil and Gas Utilities is a go-to resource for engineers and refinery personnel who must consider utility system design parameters and associated processes for the successful operations of their plants. Discusses gaseous and liquid fuel systems used to provide heat for power generation, steam production and process requirements Provides a design guide for compressed air systems used to provide air to the various points of application in sufficient quantity and quality and with adequate pressure for efficient operation of air tools or other pneumatic devices. Explains the water systems utilized in plant operations which include water treatment systems or raw water and plant water system; cooling water circuits for internal combustion engines, reciprocating compressors, inter-cooling and after-cooling facilities; and "Hot Oil" and "Tempered Water" systems

Handbook of Petrochemical Processes - James G. Speight 2019-06-13

The petrochemical industry is a scientific and engineering field that encompasses the production of a wide range of chemicals and polymers. The purpose of this book is not only to provide a follow-on to form the later chapters of the highly successful Chemistry and Technology of Petroleum 5th Edition but also provides a simplified approach to a very diverse chemical subject dealing with the chemistry and technology of various petroleum and petrochemical process. Following from the introductory chapters, this book provides the readers with a valuable source of information containing insights into petrochemical reactions and products, process technology, and polymer synthesis. Provides readers with a valuable source of information containing insights into petrochemical reactions and products, process technology, and polymer synthesis Introduces the reader to the various petrochemical intermediates are generally produced by chemical conversion of primary

petrochemicals to form more complicated derivative products The reactions and processes involved in transforming petroleum-based hydrocarbons into the chemicals that form the basis of the multi-billion dollar petrochemical industry are reviewed and described The book includes information on new process developments for the production of raw materials and intermediates for petrochemicals Includes a description of the origin of the raw materials for the petrochemicals industry - including an overview of the coal chemicals industry

Petroleum Refining Design and Applications Handbook, Volume 3 - A. Kayode Coker 2022-06-21

PETROLEUM REFINING The third volume of a multi-volume set of the most comprehensive and up-to-date coverage of the advances of petroleum refining designs and applications, written by one of the world's most well-known process engineers, this is a must-have for any chemical, process, or petroleum engineer. This volume continues 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. This book provides the design of process equipment, such as vessels for the separation of two-phase and three-phase fluids, using Excel spreadsheets, and extensive process safety investigations of refinery incidents, distillation, distillation sequencing, and dividing wall columns. It also covers multicomponent distillation, packed towers, liquid-liquid extraction using UniSim design software, and process safety incidents involving these equipment items and pertinent industrial case studies. 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. Written by one of the world's foremost authorities, this book sets the standard for the industry and is an integral part of the petroleum refining renaissance. It is truly a must-have for any practicing engineer or student in this area. This groundbreaking new volume: Assists engineers in rapidly analyzing problems and finding effective design methods and select mechanical specifications Provides improved design manuals to methods and proven fundamentals of process design with related data

and charts Covers a complete range of basic day-to-day petroleum refining operations topics with new materials on significant industry changes Includes extensive Excel spreadsheets for the design of process vessels for mechanical separation of two-phase and three-phase fluids Provides UniSim ®-based case studies for enabling simulation of key processes outlined in the book Helps achieve optimum operations and process conditions and shows how to translate design fundamentals into mechanical equipment specifications Has a related website that includes computer applications along with spreadsheets and concise applied process design flow charts and process data sheets Provides various case studies of process safety incidents in refineries and means of mitigating these from investigations by the US Chemical Safety Board Includes a vast Glossary of Petroleum and Technical Terminology

Gas Sweetening and Processing Field Manual - Maurice Stewart
2011-10-26

Rigorous exposition of all natural gas sweetness processes.

Process Safety in Upstream Oil and Gas - CCPS (Center for Chemical Process Safety) 2021-04-13

The book makes the case for process safety and provides a brief overview of the upstream industry and of CCPS Risk Based Process Safety. The majority of the book focuses on the concepts of implementing process safety in wells, onshore, offshore, and projects. Topics include Overview of Upstream Operations; Overview of Risk Based Process Safety (RBPS); Application of RBPS in Drilling, Completions, Work-Overs & Interventions, Application of RBPS in Onshore Production, Application of RBPS in Offshore Production, Application of RBPS to Engineering Design, Installation, and Construction, Future Developments in the Field

Natural Gas - James G. Speight 2007-10-01
Natural gas represents nearly one-quarter of the world's energy resources. More than half of American homes rely on it as their main heating fuel. It serves as the raw material necessary in everyday paints, plastics, medicines and explosives. It produces the cleanest of all fossil fuels. It is natural gas—and everybody should acquire a basic understanding of it. This valuable easy-to-use reference supplies all the

basics that every person should know about the natural gas industry. Introductory engineers, managers and analysts will benefit from this informative, practical handbook. Natural gas remains a vital component of all energy sources, and with an increasing demand for information on this useful energy source, Natural Gas: A Basic Handbook is an essential tool for anyone involved in the energy industry.

Handbook of Fire and Explosion Protection Engineering Principles
- Dennis P. Nolan 2014-05-28

Written by an engineer for engineers, this book is both training manual and on-going reference, bringing together all the different facets of the complex processes that must be in place to minimize the risk to people, plant and the environment from fires, explosions, vapour releases and oil spills. Fully compliant with international regulatory requirements, relatively compact but comprehensive in its coverage, engineers, safety professionals and concerned company management will buy this book to capitalize on the author's life-long expertise. This is the only book focusing specifically on oil and gas and related chemical facilities. This new edition includes updates on management practices, lessons learned from recent incidents, and new material on chemical processes, hazards and risk reviews (e.g. CHAZOP). Latest technology on fireproofing, fire and gas detection systems and applications is also covered. An introductory chapter on the philosophy of protection principles along with fundamental background material on the properties of the chemicals concerned and their behaviours under industrial conditions, combined with a detailed section on modern risk analysis techniques makes this book essential reading for students and professionals following Industrial Safety, Chemical Process Safety and Fire Protection Engineering courses. A practical, results-oriented manual for practicing engineers, bringing protection principles and chemistry together with modern risk analysis techniques Specific focus on oil and gas and related chemical facilities, making it comprehensive and compact Includes the latest best practice guidance, as well as lessons learned from recent incidents

Petroleum Refining Design and Applications Handbook, Volume 1

- A. Kayode Coker 2018-09-05

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. With so many changes over the last few decades in equipment and processes, petroleum refining is almost a living document, constantly needing updating. With no new refineries being built, companies are spending their capital re-tooling and adding on to existing plants. Refineries are like small cities, today, as they grow bigger and bigger and more and more complex. A huge percentage of a refinery can be changed, literally, from year to year, to account for the type of crude being refined or to integrate new equipment or processes. This book is 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. Written by one of the world's foremost authorities, this book sets the standard for the industry and is an integral part of the petroleum refining renaissance. It is truly a must-have for any practicing engineer or student in this area.

Petroleum Production Engineering - Boyun Guo, 2017-02-10

Petroleum Production Engineering, Second Edition, updates both the new and veteran engineer on how to employ day-to-day production fundamentals to solve real-world challenges with modern technology. Enhanced to include equations and references with today's more complex systems, such as working with horizontal wells, workovers, and an entire new section of chapters dedicated to flow assurance, this go-to reference remains the most all-inclusive source for answering all upstream and midstream production issues. Completely updated with five sections covering the entire production spectrum, including well productivity, equipment and facilities, well stimulation and workover, artificial lift methods, and flow assurance, this updated edition continues to deliver the most practical applied production techniques, answers, and methods for today's production engineer and manager. In addition,

updated Excel spreadsheets that cover the most critical production equations from the book are included for download. Updated to cover today's critical production challenges, such as flow assurance, horizontal and multi-lateral wells, and workovers Guides users from theory to practical application with the help of over 50 online Excel spreadsheets that contain basic production equations, such as gas lift potential, multilateral gas well deliverability, and production forecasting Delivers an all-inclusive product with real-world answers for training or quick look up solutions for the entire petroleum production spectrum
Process Engineering Equipment Handbook - Claire Soares 2002
Texts Index.

Formulas and Calculations for Petroleum Engineering - Cenk Temizel 2019-08-15

Formulas and Calculations for Petroleum Engineering unlocks the capability for any petroleum engineering individual, experienced or not, to solve problems and locate quick answers, eliminating non-productive time spent searching for that right calculation. Enhanced with lab data experiments, practice examples, and a complimentary online software toolbox, the book presents the most convenient and practical reference for all oil and gas phases of a given project. Covering the full spectrum, this reference gives single-point reference to all critical modules, including drilling, production, reservoir engineering, well testing, well logging, enhanced oil recovery, well completion, fracturing, fluid flow, and even petroleum economics. Presents single-point access to all petroleum engineering equations, including calculation of modules covering drilling, completion and fracturing Helps readers understand petroleum economics by including formulas on depreciation rate, cashflow analysis, and the optimum number of development wells

Handbook of Petroleum Refining Processes - Robert A. Meyers 2003-10-14

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

Handbook of Fire and Explosion Protection Engineering Principles for Oil, Gas, Chemical, and Related Facilities - Dennis P. Nolan 2018-10-11
Handbook of Fire and Explosion Protection Engineering Principles for the Oil, Gas, Chemical, and Related Facilities, Fourth Edition, discusses high-level risk analysis and advanced technical considerations, such as process control, emergency shut-downs, and evaluation procedures. As more engineers and managers are adopting risk-based approaches to minimize risk, maximize profits, and keep operations running smoothly, this reference encompasses all the critical equipment and standards necessary for the process industries, including oil and gas. Updated with new information covering fire and explosion resistant systems, drainage systems, and human factors, this book delivers the equipment standards needed to protect today's petrochemical assets and facilities. Provides tactics on how to revise and upgrade company policies to support safer designs and equipment Helps readers understand the latest in fire suppression and explosion risks for a process plant in a single source Updates on how to evaluate concerns, thus helping engineers and managers process operating requests and estimate practical cost benefit factors

Petroleum Refining Design and Applications Handbook - A. Kayode Coker 2018-08-09

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. With so many changes over the last few decades in equipment and processes, petroleum refining is almost a living document, constantly needing updating. With no new refineries being built, companies are spending their capital re-tooling and adding on to existing plants. Refineries are like small cities, today, as they grow bigger and bigger and more and more complex. A huge percentage of a refinery can be changed, literally, from year to year, to account for the type of crude being refined or to integrate new equipment or processes. This book is 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. Written by one of the world's foremost authorities, this book sets the standard for the industry and is an integral part of the petroleum refining renaissance. It is truly a must-have for any practicing engineer or student in this area.

Basics of Gas Field Processing - Yasser Kassem 2019-07-26

The book includes the basics of physical properties of natural gas necessary to understand natural gas processing and process calculations. Items covered in the first chapter are gas molecular weight, density at operating conditions, heating value, compressibility factor, ..etc. The second chapter covers the basics of phase behavior. The third chapter covers a brief oil and gas separation where a detailed were presented in the first book (Fundamentals of Oil and Gas Processing). The fourth chapter covers Natural gas hydrates, prediction and inhibition. The fifth chapter covers dehydration of natural gas. The sixth chapter covers natural gas sweetening and sulfur recovery. The book includes the basics of physical properties of natural gas necessary to understand natural gas processing and process calculations. Items covered are gas molecular weight, density at operating conditions, heating value, compressibility factor, ..etc. The second chapter covers the basics of phase behavior. The third chapter covers a brief oil and gas separation where a detailed were presented in the first book (Fundamentals of Oil and Gas Processing). The fourth chapter covers Natural gas hydrates, prediction and inhibition. The fifth chapter covers dehydration of natural gas. The sixth chapter covers natural gas sweetening and sulfur recovery. and The seventh chapter covers hydrocarbon recovery.

Natural Gas Processing - Alireza Bahadori 2014-05-05

Natural gas is considered the dominant worldwide bridge between fossil fuels of today and future resources of tomorrow. Thanks to the recent shale boom in North America, natural gas is in a surplus and quickly becoming a major international commodity. Stay current with

conventional and now unconventional gas standards and procedures with Natural Gas Processing: Technology and Engineering Design. Covering the entire natural gas process, Bahadori's must-have handbook provides everything you need to know about natural gas, including: Fundamental background on natural gas properties and single/multiphase flow factors How to pinpoint equipment selection criteria, such as US and international standards, codes, and critical design considerations A step-by-step simplification of the major gas processing procedures, like sweetening, dehydration, and sulfur recovery Detailed explanation on plant engineering and design steps for natural gas projects, helping managers and contractors understand how to schedule, plan, and manage a safe and efficient processing plant Covers both conventional and unconventional gas resources such as coal bed methane and shale gas Bridges natural gas processing with basic and advanced engineering design of natural gas projects including real world case studies Digs deeper with practical equipment sizing calculations for flare systems, safety relief valves, and control valves

Oil & Gas Engineering Guide (The) - 2nd ED - BARON Hervé 2015-03-01
This book provides the reader with: • a comprehensive description of engineering activities carried out on oil & gas projects, • a description of the work of each engineering discipline, including illustrations of all common documents, • an overall view of the plant design sequence and schedule, • practical tools to manage and control engineering activities. This book is designed to serve as a map to anyone involved with engineering activities. It enables the reader to get immediately oriented in any engineering development, to know which are the critical areas to monitor and the proven methods to apply. It will fulfill the needs of anyone wishing to improve engineering and project execution. Table des matières : 1. Project Engineering. 2. The Design Basis. 3. Process. 4. Equipment/Mechanical. 5. Plant Layout. 6. Safety & Environment. 7. Civil Engineering. 8. Materials & Corrosion. 9. Piping. 10. Plant Model. 11. Instrumentation and Control. 12. Electrical. 13. Off-Shore. 14. The Overall Work Process. 15. BASIC, FEED and Detail Design. 16. Matching the Project Schedule. 17. Engineering Management. 18. Methods &

Tools. 19. Field Engineering. 20. Revamping.
Petroleum Refining Design and Applications Handbook, Volume 2 - A. Kayode Coker 2021-04-13

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.

Gas and Oil Reliability Engineering - Eduardo Calixto 2016-06-22
Gas and Oil Reliability Engineering: Modeling and Analysis, Second Edition, provides the latest tactics and processes that can be used in oil and gas markets to improve reliability knowledge and reduce costs to stay competitive, especially while oil prices are low. Updated with relevant analysis and case studies covering equipment for both onshore and offshore operations, this reference provides the engineer and manager with more information on lifetime data analysis (LDA), safety integrity levels (SILs), and asset management. New chapters on safety, more coverage on the latest software, and techniques such as ReBi (Reliability-Based Inspection), ReGBI (Reliability Growth-Based Inspection), RCM (Reliability Centered Maintenance), and LDA (Lifetime Data Analysis), and asset integrity management, make the book a critical resource that will arm engineers and managers with the basic reliability principles and standard concepts that are necessary to explain their use for reliability assurance for the oil and gas industry. Provides the latest tactics and processes that can be used in oil and gas markets to improve reliability knowledge and reduce costs Presents practical knowledge with over 20 new internationally-based case studies covering BOPs, offshore platforms, pipelines, valves, and subsea equipment from various locations, such as Australia, the Middle East, and Asia Contains expanded explanations of reliability skills with a new chapter on asset

integrity management, relevant software, and techniques training, such as THERP, ASEP, RBI, FMEA, and RAMS

Oil and Gas Production Handbook: An Introduction to Oil and Gas Production - Havard Devold 2013