

Hydrocarbon Processing Journal

Fundamentals of Petroleum Refining presents the fundamentals of thermodynamics and kinetics, and it explains the scientific background essential for understanding refinery operations. The text also provides a detailed introduction to refinery engineering topics, ranging from the basic principles and unit operations to overall refinery economics. The book covers important topics, such as clean fuels, gasification, biofuels, and environmental impact of refining, which are not commonly discussed in most refinery textbooks. Throughout the source, problem sets and examples are given to help the reader practice and apply the fundamental principles of refining. Chapters 1-10 can be used as core materials for teaching undergraduate courses. The first two chapters present an introduction to the petroleum refining industry and then focus on feedstocks and products. Thermophysical properties of crude oils and petroleum fractions, including processes of atmospheric and vacuum distillations, are discussed in Chapters 3 and 4. Conversion processes, product blending, and alkylation are covered in chapters 5-10. The

remaining chapters discuss hydrogen production, clean fuel production, refining economics and safety, acid gas treatment and removal, and methods for environmental and effluent treatments. This source can serve both professionals and students (on undergraduate and graduate levels) of Chemical and Petroleum Engineering, Chemistry, and Chemical Technology. Beginners in the engineering field, specifically in the oil and gas industry, may also find this book invaluable. Provides balanced coverage of fundamental and operational topics Includes spreadsheets and process simulators for showing trends and simulation case studies Relates processing to planning and management to give an integrated picture of refining Sustainable production of hydrocarbon biofuels from biomass, fuels that are fully compatible with existing internal combustion engines, will allow the global transport economy to transition to a sustainable energy source without the need for capital-intensive new infrastructures. Hydrocarbon Biorefinery: Sustainable Processing of Biomass for Hydrocarbon Biofuels presents a comprehensive and easy to understand consolidation of existing knowledge for the production of hydrocarbon biofuels from biomass. Three major areas for the

conversion of biomass to hydrocarbon biofuels are addressed: i) Chemical and thermochemical conversion processes, ii) Biological and biochemical conversion processes, and iii) Conversion processes of biomass-derived compounds. Additionally, the book includes process design, life cycle analysis of various processes, reaction engineering, catalysts, process conditions and process concepts, and is supported with detailed case studies. The economic viability of each process is specifically addressed to provide a clear guide for the economic development of future hydrocarbon biofuels. Hydrocarbon Biorefinery: Sustainable Processing of Biomass for Hydrocarbon Biofuels offers an all-in-one resource for researchers, graduate students, and industry professionals working in the area of bioenergy and will be of interest to energy engineers, chemical engineers, bioengineers, chemists, agricultural researchers, and mechanical engineers. Furthermore, this book provides structured foundational content on biorefineries for undergraduate and graduate students. Presents fundamental concepts and processes of hydrocarbon biofuel production, covering chemical, biological, and biomass-derived conversion processes Synthesizes the state-of-the-art research and commercial initiatives

of this emerging concept into stand-alone chapters, serving as a structured resource for researchers and practitioners Emphasizes the process design and economic feasibility of each process using life cycle assessments to support commercial development Presents information on the journal "Hydrocarbon Processing," published by Gulf Publishing Co. The journal reports on the hydrocarbon processing industry, including refining, petrochemicals, chemicals, gas, and syngas. Highlights the table of contents of the current issue. Includes subscription information.

Petroleum Refinery Process Economics

Indigeneity, Territory, and Hydrocarbon Politics in the Bolivian Chaco

Petrochemical Economics

A Definitive Guide to Investigating, Preventing, and Learning from Industrial Disasters

Limits to Decolonization

This compendium gives an overview of the technologies and economics in the production of olefins in the petrochemical industries. It highlights the options and costs for producing olefins using different technologies and different feedstocks at a time when the cost of carbon dioxide emissions are set to be included in the production cost. Industry

professionals, engineers, research scientists and financiers will find this title a valuable resource. Contents: World Ethylene Production by Steam Cracking Chemistry of Olefin Production Gaseous Feedstocks — Production and Price Liquid Feedstock, Production and Price Value of Products, Storage and Transport Carbon Dioxide Emissions Ethane Cracking LPG Cracking Liquid Feedstock Cracking Other Routes to Olefins from Hydrocarbons Routes to Olefins from Coal Readership: Academics, professionals and researchers in industrial chemistry, environmental economics/energy economics, chemical engineering, innovation/technology/knowledge management, energy studies and inorganic chemistry.

Keywords: Petrochemicals; Olefins; Aromatics; Economics; Ethane; LPG; Coal

Key Features: Describes a consistent methodology for estimating olefin production costs from any facility in any location Facilitates business development and investment decisions in the chemical industry

Risk Management in the Oil and Gas Industry: Offshore and Onshore Concepts and Case Studies delivers the concepts, strategies and good practices of offshore and onshore safety engineering that are applicable to petroleum engineering and immediately surrounding industries. Guided by the strategic risk management line, this reference organizes steps in order of importance and priority that should be given to the themes in the practical exercise of risk management activities, from the conceptual and design phase to

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operational and crisis management situations. Each chapter is packed with practical case studies, lessons learned, exercises, and review questions. The reference also touches on the newest techniques, including liquefied natural gas (cryogenics) operations and computer simulations that contemplate the influence of human behavior. Critical for both the new and experienced engineer, this book gives the best didactic tool to perform operations safely and effectively. Helps readers by presenting practical case studies and exercises that are included in every chapter Presents an understanding on how to approach and apply best practices specific to the oil and gas industry, both offshore and onshore Provides the knowledge needed to gain new techniques in computer simulation and human factors to apply to various sectors of the industry, including subsea and refineries

Hydrocarbon processing

Solid Fuels and Heavy Hydrocarbon Liquids: Thermal Characterization and Analysis

Practical Applications

Information Circular

Petrochemical Machinery Insights

Risk Management in the Oil and Gas Industry

A modern reference to the principles, operation, and applications of the most important compressor types Thoroughly addressing process-related

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information and a wider variety of the major compressor types of interest to process plants, *Compressors and Modern Process Applications* uniquely covers the systematic linkage of fluid processing machinery to the processes they serve. This book is a highly practical resource for professionals responsible for purchasing, servicing, or operating compressors. It describes the main features of over 300 petrochemical and refining schematics and associated process descriptions involving compressors and expanders in modern industry. The organized presentation of this reference covers first the basics of compressors and what they are, and then progresses to important operational and process issues. It then explains the underlying principles, operating modes, selection issues, and major hardware elements for compressors. Topics include double-acting positive displacement compressors, rotary positive displacement compressors, understanding centrifugal process gas compressors, power transmission and advanced bearing technology, centrifugal compressor performance, gas processing and turbo-expander applications, and compressors typically found in petroleum refining and other petrochemical processes. Suitable for plant operation personnel, machinery engineering specialists, process engineers, as well as undergraduate students of this subject, this book's special features include:

- * Flow schematics of modern process units and processes used in gas

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transport, gas conditioning, petrochemical manufacture, and petroleum refining * Listings of licensors for each process on the flow schematics * Identification of each process flow schematic of compressors, cryogenic, and hot gas expanders at their respective locations * Important overview of surge control, estimating compressor performance, applications for air separation and gas processing plants, petroleum refinery issues, and important criteria that govern compressor selection and application Placing hundreds of associated process flow schematics at the fingertips of professionals and students, author and industry expert Heinz Bloch facilitates comprehension of the workings of various petrochemical, oil refining, and product upgrading processes that are served by compressors. Petrochemical Machinery Insights is a priceless collection of solutions and advice from Heinz Bloch on a broad range of equipment management themes, from wear to warranty issues, organizational problems and oil mist lubrication, and professional growth and pre-purchase of machinery. The author draws on his industry experience to hone in on important problems that do not get addressed in other books, providing actionable details that engineers can use. Mechanical, reliability, and process engineers will find this book the next best thing to having Heinz Bloch on speed dial. Focuses on pieces of hard-won experience from the industry that are rarely included

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in other books Presents not just a guide to technical problems, but also to crucial themes in management and organization Includes an informal and honest style, making author Heinz Bloch's 40 years of experience accessible to a broad audience of readers Contains a unifying theme that successful asset management requires the separation of application and implementation details

In Chemistry of Petrochemical Processes, readers find a handy and valuable source of information containing insights into petrochemical reactions and products, process technology, and polymer synthesis. The book reviews and describes the reactions and processes involved in transforming petroleum-based hydrocarbons into the chemicals that form the basis of the multi-billion dollar petrochemical industry. In addition, the book includes information on new process developments for the production of raw materials and intermediates for petrochemicals that have surfaced since the book's first edition. Provides a quick understanding of the chemical reactions associated with oil and gas processing Contains insights into petrochemical reactions and products, process technology, and polymer synthesis
Petrochemical Processing, Hydrocarbon Technology and Green Engineering

From Hydrocarbons to Petrochemicals

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Thermal and Catalytic Processes in Petroleum Refining
Handbook of Petrochemical Processes

Handbook of Natural Gas Transmission and Processing gives engineers and managers complete coverage of natural gas transmission and processing in the most rapidly growing sector to the petroleum industry. The authors provide a unique discussion of new technologies that are energy efficient and environmentally appealing at the same time. It is an invaluable reference on natural gas engineering and the latest techniques for all engineers and managers moving to natural gas processing as well as those currently working on natural gas projects. Provides practicing engineers critical information on all aspects of gas gathering, processing and transmission First book that treats multiphase flow transmission in great detail Examines natural gas energy costs and pricing with the aim of delivering on the goals of efficiency, quality and profit

Written by an author with over 38 years of experience in

the chemical and petrochemical process industry, this handbook will present an analysis of the process steps used to produce industrial hydrocarbons from various raw materials. It is the first book to offer a thorough analysis of external factors effecting production such as: cost, availability and environmental legislation. An A-Z list of raw materials and their properties are presented along with a commentary regarding their cost and availability. Specific processing operations described in the book include: distillation, thermal cracking and coking, catalytic methods, hydroprocesses, thermal and catalytic reforming, isomerization, alkylation processes, polymerization processes, solvent processes, water removal, fractionation and acid gas removal. Flow diagrams and descriptions of more than 250 leading-edge process technologies An analysis of chemical reactions and process steps that are required to produce chemicals from various raw materials Properties, availability and environmental impact of various raw materials used in hydrocarbon

processing

Handbook of Industrial Hydrocarbon Processes, Second Edition, provides an analysis of the process steps required to produce hydrocarbons from various raw materials and how the choice of a process depends not only on technology, but also on external effects, such as social and economic developments, political factors affecting the availability of raw materials, and environmental legislation. This book qualitatively examines chemical processes and plant design by showing the factors determining process structures, including the underlying chemistry, feedstock, product specifications and reactor design. The book also compares the processes for different products based on raw materials and manufacturing processes based on their respective applications. With the addition of useful flowcharts that present an overview of the chemical processes, process design and equipment, this book is a valuable resource to industry professionals on how to understand how hydrocarbons are produced from different raw materials and

how to develop an instinct for the right process development strategy. Provides a qualitative analysis of chemical processes and plant design by showing the factors determining process structures Presents chemical processes in an organized, easy-to-read and understandable manner with the use of useful flowcharts and concise descriptions Includes updates on changes in existing technological and chemical processes, as well as possible future improvements or changes to other more economic or more readily available feedstocks

A Complete Guide for Physical, Chemical, and Biochemical Processes

Turboexpanders and Process Applications

The Changing Landscape of Hydrocarbon Feedstocks for Chemical Production

Handbook of Natural Gas Transmission and Processing
Petrochemistry

A guide for plant managers and maintenance engineers to aid understanding of the design parameters, application and economics of oil mist lubrication

technology. The information presented is based on years of profitability advantages of oil mist lubrication in a variety of industrial settings.

This book details three main topics: the screening and characterization of hydrocarbons from air, soil and water; technologies in the biodegradation of hydrocarbons; and the bioconversion of hydrocarbons for biofuel/chemicals, as well as recent developments in the remediation of hydrocarbons and their environmental benefits. The first section focuses on screening methods, qualitative and quantitative analysis of hydrocarbons from soil, air and water environments, speciation of hydrocarbons, and natural bioremediation strategies in such environments. The second section examines technologies for removing hydrocarbon contaminants from various environments, especially advanced technologies for the removal of hydrocarbons and in-situ and ex-situ remediation strategies and problems, as well as concrete case studies. The last section, covering the bioconversion of hydrocarbons for biofuel/chemicals, highlights the biochemicals and bioproducts developed from hydrocarbons, with a particular focus on biochemical and chemical technologies used to produce biopolymers, biofuel precursors and commodity chemicals from hydrocarbons.

The book is organized in three parts. Part I shows how the catalytic and electrochemical principles involve hydrogen production technologies. Part II is devoted to biohydrogen production and introduces gasification and fast

pyrolysis biomass, dark fermentation, microbial electrolysis and power production from algae. The last part of the book is concerned with the photo hydrogen generation technologies. Recent developments in the area of semiconductor-based nanomaterials, specifically semiconductor oxides, nitrides and metal-free semiconductors based nanomaterials for photocatalytic hydrogen production are extensively discussed in this part.

**Biodegradation and Bioconversion of Hydrocarbons
Implications for Catalysis: Proceedings of a Workshop
Hydrocarbon Biorefinery
Refining Processes Handbook**

Compressors and Modern Process Applications

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.

A decade ago, the U.S. chemical industry was in decline. Of the more than 40 chemical manufacturing plants being built worldwide in the mid-2000s with more than \$1 billion in capitalization, none were under construction in the United States. Today, as a result of abundant domestic supplies of affordable natural gas and natural gas liquids resulting from the dramatic rise in shale gas production, the U.S. chemical industry has gone from the world's highest-cost producer in 2005 to among the lowest-cost producers today. The low cost and increased supply of natural gas and natural gas liquids provides an opportunity to discover and develop new catalysts and processes to enable the direct conversion of natural gas and natural gas liquids into value-added chemicals with a lower carbon footprint. The economic implications of developing advanced technologies to utilize and process natural gas and natural gas liquids for chemical production could be significant, as commodity, intermediate, and fine chemicals represent a higher-economic-value use of shale gas compared with its use as a fuel. To better understand the opportunities for catalysis research in an era of shifting feedstocks for chemical production and to identify the gaps in the current research

portfolio, the National Academies of Sciences, Engineering, and Medicine conducted an interactive, multidisciplinary workshop in March 2016. The goal of this workshop was to identify advances in catalysis that can enable the United States to fully realize the potential of the shale gas revolution for the U.S. chemical industry and, as a result, to help target the efforts of U.S. researchers and funding agencies on those areas of science and technology development that are most critical to achieving these advances. This publication summarizes the presentations and discussions from the workshop.

Membrane materials allow for the selective separation of gas and vapour and for ion transport. Materials research and development continues to drive improvements in the design, manufacture and integration of membrane technologies as critical components in both sustainable energy and clean industry applications. Membrane utilisation offers process simplification and intensification in industry, providing low-cost, and efficient and reliable operation, and contributing towards emissions reductions and energy security. Advanced membrane science and technology for sustainable energy and environmental applications presents a comprehensive review of membrane utilisation and integration within energy and environmental industries. Part one introduces the topic of membrane science and engineering, from the fundamentals of membrane processes and separation to membrane characterization and economic analysis. Part two focuses on membrane utilisation for carbon dioxide (CO₂) capture in coal and gas power plants, including pre- and post-combustion and oxygen transport technologies. Part three reviews membranes for the petrochemical industry, with chapters covering hydrocarbon fuel, natural gas and synthesis gas processing, as well as advanced biofuels production. Part four covers membranes for alternative energy applications and

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energy storage, such as membrane technology for redox and lithium batteries, fuel cells and hydrogen production. Finally, part five discusses membranes utilisation in industrial and environmental applications, including microfiltration, ultrafiltration, and forward osmosis, as well as water, wastewater and nuclear power applications. With its distinguished editors and team of expert contributors, Advanced membrane science and technology for sustainable energy and environmental applications is an essential reference for membrane and materials engineers and manufacturers, as well as researchers and academics interested in this field. Presents a comprehensive review of membrane science and technology, focusing on developments and applications in sustainable energy and clean-industry Discusses the fundamentals of membrane processes and separation and membrane characterization and economic analysis Addresses the key issues of membrane utilisation in coal and gas power plants and the petrochemical industry, the use of membranes for alternative energy applications and membrane utilisation in industrial and environmental applications

Hydrocarbon processing [electronic journal].

Bibliography of Investment and Operating Costs for Chemical and Petroleum Plants, Oil and Gas Exploration, Development, and Production, and Related Mining Subjects, January-December 1970

Hydrogen Production Technologies

Sustainable Processing of Biomass for Hydrocarbon Biofuels

Gas Purification

Penelope Anthias ' s Limits to Decolonization addresses one of the most important

issues in contemporary indigenous politics: struggles for territory. Based on the experience of thirty-six Guaraní communities in the Bolivian Chaco, Anthias reveals how two decades of indigenous mapping and land titling have failed to reverse a historical trajectory of indigenous dispossession in the Bolivian lowlands. Through an ethnographic account of the "limits" the Guaraní have encountered over the course of their territorial claim—from state boundaries to landowner opposition to hydrocarbon development—Anthias raises critical questions about the role of maps and land titles in indigenous struggles for self-determination. Anthias argues that these unresolved territorial claims are shaping the contours of an era of "post-neoliberal" politics in Bolivia. *Limits to Decolonization* reveals the surprising ways in which indigenous peoples are reframing their territorial projects in the context of this hydrocarbon state and drawing on their experiences of the limits of state recognition. The tensions of Bolivia's "process of change" are revealed, as *Limits to Decolonization* rethinks current debates on cultural rights, resource politics, and Latin American leftist states. In sum, Anthias reveals the creative and pragmatic ways in which indigenous peoples contest and work within the limits of postcolonial rule in pursuit of their own visions of territorial autonomy.

Describes economic evaluations for both single processes and complete refineries, and illustrates how to use yield data, properties of products, and operating and capital costs in those evaluations. Two chapters on transportation fuels and environmental

concerns have been added to the second edition. Annotation copyrighted by Book News, Inc., Portland, OR.

The first strand involves a critical overview of the design of experimental methods used for examining the thermal behaviour of solid fuels [pyrolysis, liquefaction and gasification], while the second will emphasise chemical structures and molecular mass distributions of coal derived tars, extracts and pitches, petroleum-derived asphaltenes, and biomass derived heavy hydrocarbon liquids. Two major, interdependent strands in the study of fossil and renewable fuel utilisation are focused on within this text: (i) Thermal characterisation of solid fuels including various ranks of coals, biomass and waste, and, (ii) The analytical characterisation of heavy hydrocarbon liquids, covering coal, petroleum and biomass derived heavy fractions. Two major, interdependent strands in the study of fossil and renewable fuel utilisation are focused on within this text: (i) Thermal characterisation of solid fuels including various ranks of coals, biomass and waste, and, (ii) The analytical characterisation of heavy hydrocarbon liquids, covering coal, petroleum and biomass derived heavy fractions.

Rethinking Bhopal

Chemistry of Petrochemical Processes

Advanced Membrane Science and Technology for Sustainable Energy and Environmental Applications

Offshore and Onshore Concepts and Case Studies

Handbook of Industrial Hydrocarbon Processes

Advances in Oil-Water Separation: A Complete Guide for Physical, Chemical, and Biochemical Processes discusses a broad variety of chemical, physical and biochemical processes, including skimming, membrane separation, adsorption, onsite chemical reactions, burning and usage of suitable microbial strains for onsite degradation of oil. It critically reviews all current developments in oil-water separation processes and technologies, identifies gaps and illuminates the scope for future research and development in the field. This book provides researchers, engineers and environmental professionals working in oil recovery, storage and refineries with solutions for disposal of waste oil and separation of oil from water in a sustainable, environmentally-friendly way. As the book provides a complete state-of-art overview on oil-water separation technologies, it will also ease literature searches on oil-water separation technologies. Provides a comprehensive overview of state-of-the-art developments in oil-water separation methods Discusses the pros and cons of established processes Guides the reader towards the selection of the right technique/process for each oil-water separation problem Presents current developments on adsorbent based oil-water separation

A comprehensive textbook on petrochemical conversion processes for petroleum and natural gas fractions as produced by refinery operations This innovative textbook provides essential links between the chemical sciences and chemical technology, between petrochemistry and hydrocarbon technology. The book brings alive key concepts forming the basis of chemical technology and presents a solid background for innovative process development. In all chapters, the processes described are accompanied by simplified flow schemes, encouraging students to think in terms of conceptual process designs. Petrochemistry: Petrochemical

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Processing, Hydrocarbon Technology and Green Engineering introduces students to a variety of topics related to the petrochemical industry, hydrocarbon processing, fossil fuel resources, as well as fuels and chemicals conversion. The first chapter covers the fundamentals and principals for designing several of the processes in the book, including discussions on thermodynamics, chemical kinetics, reactor calculations, and industrial catalysts. The following chapters address recent advances in hydrocarbon technology, energy technology, and sources of hydrocarbons. The book then goes on to discuss the petrochemical industry based on four basic pillars, all derived from petroleum and natural gas: Production of lower alkenes; other sources of lower alkenes; petrochemicals from C2-C3 alkenes Production of BTX aromatics; chemicals from BTX aromatics C1 technology Diversification of petrochemicals The growing importance of sustainable technology, process intensification and addressing greenhouse gas emissions is reflected throughout the book. Written for advanced students working in the areas of petrochemistry, hydrocarbon technology, natural gas, energy materials and technologies, alternative fuels, and recycling technologies the book is also a valuable reference for industrial practitioners in the oil and gas industry.

The author, a highly respected consultant to major U.S. refineries, shares information on topics such as common coke quality questions, catalyst-feed mixing, light hydrocarbon distillation, steam to heater passes, haze in jet fuel, optimizing excess air, convection and radiation, reboiler-induced foaming, flooding and computer control consoles. Of special interest in the new section on gas drying and compression. A troubleshooting checklist accompanies each chapter. The author expertly combines field observations with engineering principles to unravel and solve specific process operation problems using an easy-to-understand style devoid of

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textbook terminology and excessive mathematics. Contents: Specific processes Process equipment Practical problems Gas drying and compression The process engineer's job Appendix.

Oil Mist Lubrication

Fundamentals of Lng Plant Design

Hydrocarbon Processing & Petroleum Refiner

Challenges and Opportunities

Processing of Heavy Crude Oils

Rethinking Bhopal: A Definitive Guide to Investigating, Preventing, and Learning from Industrial Disasters is the go-to source for anyone seeking to learn how to improve process safety management (PSM) through applying fundamental asset reliability and incident investigation concepts. The seeds that unified PSM on a global scale were planted in Bhopal, India on December 3, 1984. Since then, considerable progress has been made to protect both workers and communities from catastrophic industrial failures. Industry acknowledges its responsibility to create value with accrued operating experience and that using information received from previous failures is a direct way to prevent future incidents. With

this principle in mind, Bloch evaluates modern references related to the Bhopal Disaster, using recognized industrial asset reliability and incident investigation concepts. The practice of objective incident investigation offers a compelling insight into specific decisions and actions that resulted in history's worst industrial disaster. Recording a fully transparent sequence of events promotes a personal sense of accountability for anyone involved in the manufacturing industry. Lessons learned can be immediately implemented by those with direct PSM, management, engineering, and operating responsibilities. Case histories demonstrate how patterns observed in the timeline leading up to the Bhopal Disaster can be detected in modern incidents and by recognizing these patterns in present-day processes avoids counterproductive operating decisions and unprecedented destruction. This text is instrumental in helping existing organizations re-evaluate their own exposures and risks, and would be a valuable read for any member of a process safety management team. Rethinking

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Bhopal: A Definitive Guide to Investigating, Preventing, and Learning from Industrial Disasters provides an expansion of knowledge and understanding for the novice in PSM while also providing depth and application considerations to challenge more experienced industry professionals. Note: All royalties from this book go to the Process Safety Heritage Trust Scholarship at Lamar University in Beaumont, Texas, USA.

Learn how to improve Process Safety Management (PSM) performance by applying fundamental asset reliability and incident investigation concepts Understand your personal role in detecting and preventing Loss of Primary Containment (LOPC) incidents before they occur Take immediate action to stabilize processes under your control while promoting a systematic approach to eliminating persistent failure mechanisms Includes case histories to helpfully illustrate how to detect potentially destructive patterns in your own organization

Fouling in Refineries is an important and ongoing problem that directly affects energy efficiency resulting in

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increased costs, production losses, and even unit shutdown, requiring costly expenditures to clean up equipment and return capacity to positive levels. This text addresses this common challenge for the hydrocarbon processing community within each unit of the refinery. As refineries today face a greater challenge of accepting harder to process heavier crudes and the ongoing flow of the lighter shale oil feedstocks, resulting in bigger challenges to balance product stability within their process equipment, this text seeks to inform all relative refinery personnel on how to monitor fouling, characterize the deposits, and follow all available treatments. With basic modeling and chemistry of fouling and each unit covered, users will learn how to operate at maximum production rates and elongate the efficiency of their refinery's capacity. Presents an understanding of the breakdown of fouling per refinery unit, including distillation and coking units Provides all the factors, crude types, and refining blends that cause fouling, especially the unconventional feedstocks and high

acid crudes used today Helps users develop an analysis-based treatment and control strategy that empowers them to operate refinery equipment at a level that prevents fouling from occurring

"Updates fundamentals and applications of all modes of x-ray spectrometry, including total reflection and polarized beam x-ray fluorescence analysis, and synchrotron radiation induced x-ray emission. Promotes the accurate measurement of samples while reducing the scattered background in the x-ray spectrum."

Fouling in Refineries

Hydrocarbon processing

Troubleshooting Process Operations

Handbook of X-Ray Spectrometry

Bibliography of Investment and Operating Costs for Chemical and Petroleum Plants, January-December 1968

This text examines the thermal and catalytic processes involved in the refining of petroleum including visbreaking, coking, pyrolysis, catalytic cracking, oligomerization, alkylation, hydrofining, hydroisomerization, hydrocracking, and catalytic reforming. It

analyzes the thermodynamics, reaction mechanisms, and kinetics of each process, as well as

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

Full text engineering e-book.

Hydrocarbon Processing

Technology Selection in a Carbon Constrained World

Fundamentals of Petroleum Refining

Advances in Oil-Water Separation

Economic Diversification and Development in Saudi Arabia