
Production Of Olefin And Aromatic Hydrocarbons By

Mono-Olefins

Handbook of Petrochemicals Production Processes

The Chemistry of Petroleum Derivatives

Chemistry of Petrochemical Processes

Zeolites in Industrial Separation and Catalysis

Handbook of Petroleum Processing

Chemical Processing Handbook

Official Gazette of the United States Patent Office

Industrial and Process Furnaces

Hydrocracking Science and Technology

Handbook of Petroleum Refining Processes

Handbook of Petrochemical Processes

Fossil Energy Update

Converting Power into Chemicals and Fuels

Encyclopedia of Chemical Processing (Online)

Hydrocarbon Chemistry

Natural Gas Conversion V

Waste Biorefineries: Future Energy, Green Products and Waste Treatment

Chemicals and Fuels from Bio-Based Building Blocks

Gas Engineering

Chemicals and Fuels from Biomass via Fischer-Tropsch Synthesis

Handbook of Petroleum Processing

Oil and Gas Production Handbook: An Introduction to Oil and Gas Production

Modern Petrochemical Technology

Alkenes

Petrochemical Economics

Springer Handbook of Petroleum Technology

Official Gazette of the United States Patent and Trademark Office

Diameter-Transformed Fluidized Bed

Encyclopedia of Chemical Processing

Aromatic Hydrocarbons—Advances in Research and Treatment: 2013 Edition

Chemical Reactor Technology for Environmentally Safe Reactors and Products

Handbook of Membrane Separations

Efficient Petrochemical Processes

Novel Production Methods for Ethylene, Light Hydrocarbons, and Aromatics

Handbook of Industrial Chemistry and Biotechnology

Organic Geochemistry

CO₂ Capture, Utilization, and Sequestration Strategies

JERAMIAH OSBORN

Mono-Olefins CRC Press

Written by more than 40 world renowned authorities in the field, this reference presents information on plant design, significant chemical reactions, and processing operations in industrial use - offering shortcut calculation methods wherever possible.

Handbook of Petrochemicals Production Processes Elsevier
A GUIDE TO THE DESIGN, OPERATION, CONTROL, TROUBLESHOOTING, OPTIMIZATION AS WELL AS THE RECENT ADVANCES IN THE FIELD OF PETROCHEMICAL PROCESSES
Efficient Petrochemical Processes: Technology, Design and Operation is a guide to the tools and methods for energy optimization and process design. Written by a panel of experts on the topic, the book highlights the application of these methods on petrochemical technology such as the aromatics process unit. The authors describe practical approaches and tools that focus on improving industrial energy efficiency, reducing capital investment, and optimizing yields through better design, operation, and optimization. The text is divided into sections that cover the range of essential topics: petrochemical technology description; process design considerations; reaction and separation design; process integration; process system optimization; types of revamps; equipment assessment; common operating issues; and troubleshooting case analysis. This important book: Provides the basic knowledge related to fundamentals, design, and operation for petrochemical processes Applies process integration techniques and optimization techniques that improve process design and operations in the petrochemical process Provides practical methods and tools for industrial practitioners Puts the focus on improving industrial energy efficiency, reducing capital investment, and optimizing yields Contains information on the most recent advances in the field. Written for managers, engineers, and operators working in process industries as well as university students, Efficient Petrochemical Processes: Technology, Design and Operation

explains the most recent advances in the field of petrochemical processes and discusses in detail catalytic and adsorbent materials, reaction and separation mechanisms.

The Chemistry of Petroleum Derivatives Royal Society of Chemistry

This first book to offer a practical overview of zeolites and their commercial applications provides a practical examination of zeolites in three capacities. Edited by a globally recognized and acclaimed leader in the field with contributions from major industry experts, this handbook and ready reference introduces such novel separators as zeolite membranes and mixed matrix membranes. The first part of the book discusses the history and chemistry of zeolites, while the second section focuses on separation processes. The third and final section treats zeolites in the field of catalysis. The three sections are unified by an examination of how the unique properties of zeolites allow them to function in different capacities as an adsorbent, a membrane and as a catalyst, while also discussing their impact within the industry.

Chemistry of Petrochemical Processes Springer Science & Business Media

Offering practical treatment strategies for CO2 emission generated from various energy-related sources, CO2 Capture, Utilization, and Sequestration Strategies emphasizes carbon capture, utilization, and sequestration (CCUS) with special focus on methods for each component of the strategy. While other books mostly focus on CCS strategy for CO2, this book details the technologies available for utilization of CO2, showing how it can be a valuable renewable source for chemicals, materials, fuels, and power instead of a waste material damaging the environment. Highlights current and potential future commercially viable CCUS strategies Discusses applications for direct and the more complex indirect utilization of CO2 streams Examines viability of the mineral carbonation process and biological treatments to convert CO2 into useful biochemicals, biomaterials, and biofuels Explores heterogeneous catalysis for thermal and electrochemical conversion and solar energy-based thermal, photo-thermal, and photocatalytic conversion of CO2 Presents the

rapidly growing concept of plasma-activated catalysis for CO2 conversion CO2 Capture, Utilization, and Sequestration Strategies is a valuable reference for researchers in academia, industry, and government organizations seeking a guide to effective CCUS processes, technologies, and applications.

Zeolites in Industrial Separation and Catalysis CRC Press

This second edition Encyclopedia supplies nearly 350 gold standard articles on the methods, practices, products, and standards influencing the chemical industries. It offers expertly written articles on technologies at the forefront of the field to maximize and enhance the research and production phases of current and emerging chemical manufacturing practices and techniques. This collecting of information is of vital interest to chemical, polymer, electrical, mechanical, and civil engineers, as well as chemists and chemical researchers. A complete reconceptualization of the classic reference series the Encyclopedia of Chemical Processing and Design, whose first volume published in 1976, this resource offers extensive A-Z treatment of the subject in five simultaneously published volumes, with comprehensive indexing of all five volumes in the back matter of each tome. It includes material on the design of key unit operations involved with chemical processes; the design, unit operation, and integration of reactors and separation systems; process system peripherals such as pumps, valves, and controllers; analytical techniques and equipment; and pilot plant design and scale-up criteria. This reference contains well-researched sections on automation, equipment, design and simulation, reliability and maintenance, separations technologies, and energy and environmental issues. Authoritative contributions cover chemical processing equipment, engineered systems, and laboratory apparatus currently utilized in the field. It also presents expert overviews on key engineering science topics in property predictions, measurements and analysis, novel materials and devices, and emerging chemical fields. ALSO AVAILABLE ONLINE This Taylor & Francis encyclopedia is also available through online subscription, offering a variety of extra benefits for both researchers, students, and librarians, including: Citation tracking and alerts Active reference linking Saved searches and marked

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Handbook of Petroleum Processing Springer Science & Business Media

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

Chemical Processing Handbook Taylor & Francis US

Energy recovery from waste resources holds a significant role in the sustainable waste management hierarchy to support the concept of circular economies and to mitigate the challenges of waste originated problems of sanitation, environment, and public health. Today, waste disposal to landfills is the most widely used methodology, particularly in developing countries, because of limited budgets and lack of efficient infrastructure and facilities to maintain efficient and practical global standards. As a consequence, the dump-sites or non-sanitary landfills have become the significant sources of greenhouse gases emissions, soil and water contamination, unpleasant odors, leachate, and disease spreading vectors, flies, and rodents. However, waste can be utilized to produce a range of potential products such as energy, fuels and value-added products under waste biorefineries. A holistic and quantitative view, such as waste biorefinery, on waste management must be linked to the actual country, taking into account its socio-economic situation, local waste sources, and composition, as well as the available markets for the recovered energy and products. Therefore, it is critical to understand that solutions cannot be just copied from one region to the others. In

fact, all waste handling, transportation, and treatment can represent a burden to the cities' environment and macro and micro economics, except for the benefits obtained from recovered materials and energy. Equally significant is a clear and quantitative understanding of the industrial, and public potential of utilizing recovered materials and energy in the markets as these can be reached without exacerbating the environmental issues using excessive transport. The book explores new advancements and discoveries on the development of emerging waste-to-energy technologies, practical implementation, and lessons learned from sustainable wastemanagement practices under waste biorefinery concept, which will accelerate the growth of circular economies in the world. The articles presented in this book have been written by expert researchers and academics working in institutions at different countries across the world including Germany, Greece, Japan, South Korea, China, Saudi Arabia, Pakistan, Indonesia, Malaysia, Iran, and India. The research articles have been arranged into three main subject categories; 1) Resource recovery from waste, 2) Waste to energy technologies and 3) Waste biorefineries. This book will serve as an important resource for research students, academics, industry, policy makers, and government agencies working in the field of integrated waste management, energy and resource recovery, waste to energy technologies, waste biorefineries etc. The editorial team of this book is very grateful to all the authors for their excellent contributions and making the book successful.

Official Gazette of the United States Patent Office McGraw Hill Professional

This handbook provides a comprehensive but concise reference resource for the vast field of petroleum technology. Built on the successful book "Practical Advances in Petroleum Processing" published in 2006, it has been extensively revised and expanded to include upstream technologies. The book is divided into four parts: The first part on petroleum characterization offers an in-depth review of the chemical composition and physical properties of petroleum, which determine the possible uses and the quality of the products. The second part provides a brief overview of petroleum geology and upstream practices. The third part exhaustively discusses established and emerging refining technologies from a practical perspective, while the final part describes the production of various refining products, including

fuels and lubricants, as well as petrochemicals, such as olefins and polymers. It also covers process automation and real-time refinery-wide process optimization. Two key chapters provide an integrated view of petroleum technology, including environmental and safety issues. Written by international experts from academia, industry and research institutions, including integrated oil companies, catalyst suppliers, licensors, and consultants, it is an invaluable resource for researchers and graduate students as well as practitioners and professionals.

Industrial and Process Furnaces John Wiley & Sons

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

Hydrocracking Science and Technology CRC Press

CONVERTING POWER INTO CHEMICALS AND FUELS Understand the pivotal role that the petrochemical industry will play in the energy transition by integrating renewable or low-carbon alternatives Power into Chemicals and Fuels stresses the versatility of hydrogen as an enabler of the renewable energy

system, an energy vector that can be transported and stored, and a fuel for the transportation sector, heating of buildings and providing heat and feedstock to industry. It can reduce both carbon and local emissions, increase energy security and strengthen the economy, as well as support the deployment of renewable power generation such as wind, solar, nuclear and hydro. With a focus on power-to-X technologies, this book discusses the production of basic petrochemicals in such a way as to minimize the carbon footprint and develop procedures that save energy or use energy from renewable sources. Various different power-to-X system configurations are introduced with discussions on their performance, environmental impact, and cost. Technologies for sustainable hydrogen production are covered, focusing on water electrolysis using renewable energy as well as consideration of the remaining challenges for large scale production and integration with other technologies. Power into Chemicals and Fuels readers will also find: Discussion of recent advances in power-into-x technologies for the production of ethylene, propylene, formic acid, and more Coverage of every stage in the power-into-x process, from power generation to upgrading the final product Thermodynamic, techno-economic, and life cycle assessment analyses of each major process Power into Chemicals and Fuels is a valuable resource for scientists and engineers working in the petrochemicals and hydrocarbons industries, as well as for all industry professionals in these and related fields.

Handbook of Petroleum Refining Processes Lulu.com

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.

Handbook of Petrochemical Processes John Wiley & Sons

Alkenes, which have carbon-carbon double bonds, are chemicals and energy sources that play an important role in human life, including economics and the environment. This book examines the production and synthesis of alkenes, olefins, and polyolefins, as well as environmental issues faced during industrial production of these hydrocarbons. It also discusses eco-friendly and green

separation techniques.

Fossil Energy Update World Scientific

The Handbook of Membrane Separations: Chemical, Pharmaceutical, and Biotechnological Applications provides detailed information on membrane separation technologies as they have evolved over the past decades. To provide a basic understanding of membrane technology, this book documents the developments dealing with these technologies. It explores chemical, pharmaceutical, food processing and biotechnological applications of membrane processes ranging from selective separation to solvent and material recovery. This text also presents in-depth knowledge of membrane separation mechanisms, transport models, membrane permeability computations, membrane types and modules, as well as membrane reactors.

Converting Power into Chemicals and Fuels John Wiley & Sons

Aromatic Hydrocarbons—Advances in Research and Treatment: 2013 Edition is a ScholarlyEditions™ book that delivers timely, authoritative, and comprehensive information about Benzene. The editors have built Aromatic Hydrocarbons—Advances in Research and Treatment: 2013 Edition on the vast information databases of ScholarlyNews.™ You can expect the information about Benzene in this book to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Aromatic Hydrocarbons—Advances in Research and Treatment: 2013 Edition has been produced by the world's leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority, confidence, and credibility. More information is available at <http://www.ScholarlyEditions.com/>.

Encyclopedia of Chemical Processing (Online) BoD - Books on Demand

Modern Petrochemical Technology A text that explores the essence of petrochemicals and petrochemical technology Modern Petrochemical Technology: Methods, Manufacturing and Applications is a comprehensive resource that provides an overview of the uses for common petrochemical building blocks, a review of the marketplaces, and offers a survey of the technology

used to make the key petrochemical building blocks. The book contains both critical information the technologies used to produce petrochemicals, how the various petrochemicals are applied in industry, and provides illustrative examples and problems designed to reinforce the learning about the basic science, engineering, and use of petrochemicals. The book explores three separate petrochemical building block—olefin complexes, aromatic complexes and synthesis gas complexes—and examines the “interconnected” nature of these building blocks. The authors also include information on the olefins productions using steam cracking, paraffin dehydrogenation, and methanol to olefins technologies and describes various methods, commercial processes to produce aromatics such as benzene, toluene and xylene, and much more. This important book: Offers a guide to the critical information on petrochemical producing technologies Includes material on various petrochemicals from the industrial point-of-view Explores the separation processes, membrane technology, absorption technology, liquid-liquid extraction, and more Contains material from a team of noted experts Provides a survey of examples of commercialization applications of petrochemicals Written for chemical engineers, chemists in industry, membrane scientists, and process engineers, Modern Petrochemical Technology provides an overview of markets and uses for common petrochemical building blocks as well as includes a survey of the technology used to make the key petrochemical building blocks. Hydrocarbon Chemistry John Wiley & Sons

* 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

Natural Gas Conversion V McGraw-Hill Prof Med/Tech

This 3rd volume of 'Gas Engineering' introduces the concept of liquefied natural gas and the concept gas-to-liquids and also presents a review of the uses of gas streams and the effects of the various gases on the environment. This volume also describes the properties gas streams as they are related to corrosion effects are also presented. The relationship of the properties of gas

streams as they affect corrosion such as carburization and metal dusting as well as corrosion in steel and other materials used in refinery technology are also presented and the book summarizes key findings into corrosion processes in gas-processing equipment as well as corrosion in offshore structures. Each book contains references at the end of chapter which include information from the open literature and meeting proceedings to give a picture of where the gas processing technology stands as well as indicate some relatively new technologies that could become important in the future. Also, each book also contains a comprehensive glossary. The books are written in an easy-to-read style and offer a ready-at-hand (one-stop-shopping) guide to the many issues that are related to the engineering aspects of the properties and processing of natural gas as well as the effects of natural gas on various ecosystems as well as to pollutant mitigation and clean-up. The books present an overview, with a considerable degree of detail of the various aspects of natural gas technology. Any chemistry presented in the books is used as a means of explanation of a particular point but is maintained at an elementary level.

Waste Biorefineries: Future Energy, Green Products and Waste

Treatment Frontiers Media SA

Chemical reactor engineering, as a discipline, has a central role to play in helping with the development of adequate strategies and technologies that can deal effectively with the concerns of today's society, which are increasingly becoming attuned to the environment. The current challenge is how to adapt present processes and products to meet more rigorous environmental standards. *Chemical Reactor Technology for Environmentally Safe Reactors and Products* addresses these issues in three parts: I -- Fuels of the Future and Changing Fuel Needs; II -- Alternative Sources; III -- Emission Control, Chemical Reactor Safety and Engineering. Attention is also paid, throughout the text, to the fundamental technological aspects of reactor engineering and to possible strategies for bridging knowledge gaps.

Chemicals and Fuels from Bio-Based Building Blocks John Wiley & Sons

To meet changing market demands that have stringent emission standards and to ensure proper performance in refinery units, evaluation of novel catalyst designs and results from material characterization and testing of catalysts are of crucial importance for refiners as well as for catalyst manufacturers. This book highlights recent developments in the application of refinery

catalysts in selected units such as fluid catalytic cracking (FCC), hydrogen production for hydroprocessing units, hydrotreating, hydrocracking, and sustainable processing of biomass into biofuels.

Gas Engineering CRC Press

For many years, the subject matter encompassed by the title of this book was largely limited to those who were interested in the two most economically important organic materials found buried in the Earth, namely, coal and petroleum. The point of view of any discussions which might occur, either in scientific meetings or in books that have been written, was, therefore, dominated largely by these interests. A great change has occurred in the last decade. This change had as its prime mover our growing knowledge of the molecular architecture of biological systems which, in turn, gave rise to a more legitimate asking of the question: "How did life come to be on the surface of the Earth?" A second motivation arose when the possibilities for the exploration of planets other than the Earth-the moon, Mars, and other parts of the solar system-became a reality. Thus the question of the possible existence of life elsewhere than on Earth conceivably could be answered.

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