

Production Of Olefin And Aromatic Hydrocarbons By

From Hydrocarbons to Petrochemicals
 Chemistry of Petrochemical Processes
 Novel Production Methods for Ethylene, Light Hydrocarbons, and Aromatics
 Gas Engineering
 Ullmann's Energy
 Hydrocarbon Chemistry
 Chemical Processing Handbook
 Handbook of Petroleum Processing
 Zeolites and Zeolite-like Materials
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 Handbook of Membrane Separations
 Uranium Production Technology
 Alkenes
 The Changing Landscape of Hydrocarbon Feedstocks for Chemical Production
 Organic Geochemistry
 Waste Biorefineries: Future Energy, Green Products and Waste Treatment
 Aromatic Hydrocarbons—Advances in Research and Treatment: 2013 Edition
 From Zeolites to Porous MOF Materials - the 40th Anniversary of International Zeolite Conference, 2 Vol Set
 Springer Handbook of Petroleum Technology
 Handbook of Petroleum Refining Processes
 Handbook of Industrial Hydrocarbon Processes
 Modern Petrochemical Technology
 Hydrocracking Science and Technology
 Mono-Olefins
 Handbook of Industrial Chemistry and Biotechnology
 Oil and Gas Production Handbook: An Introduction to Oil and Gas Production
 Official Gazette of the United States Patent Office
 Customs Bulletin
 Converting Power into Chemicals and Fuels
 Industrial and Process Furnaces
 Petrochemical Economics
 Chemicals and Fuels from Bio-Based Building Blocks
 Chemicals and Fuels from Biomass via Fischer-Tropsch Synthesis
 Natural Gas Conversion V
 Advances in Refining Catalysis
 Handbook of Petroleum Processing
 Official Gazette of the United States Patent and Trademark Office
 Modern Petrochemical Technology
 Diameter-Transformed Fluidized Bed
 Handbook of Petrochemicals Production Processes

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RILEY QUINN

From Hydrocarbons to Petrochemicals Elsevier

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.

Chemistry of Petrochemical Processes McGraw Hill Professional

This book puts forward the concept of the Diameter-Transformed Fluidized Bed (DTFB): a fluidized bed characterized by the coexistence of multiple flow regimes and reaction zones, achieved by transforming the bed into several sections of different diameters. It reviews fundamental aspects, including computational fluid dynamics simulations and industrial practices in connection with DTFB. In particular, it highlights an example concerning the development of maximizing iso-paraffins (MIP) reactors for regulating complex, fluid catalytic cracking reactions in petroleum refineries. The book is a must-have for understanding how academic and industrial researchers are now collaborating in order to develop novel catalytic processes.

Novel Production Methods for Ethylene, Light Hydrocarbons, and Aromatics Elsevier

Integrating technological development and business development rationales to highlight the key technological developments that are necessary to industrialize biofuels on a global scale, this book focusses on the key challenges that still hinder the effective biomass use and the realization of zero fossil fuel.

Gas Engineering John Wiley & Sons

Presents advances in the field of hydrocracking. The volume includes catalytic materials, reaction mechanisms and pathways, as well as hydrocracking processes and applications. It discusses hydrocracking processes and hydrocracking technology in catalytic dewaxing, resid upgrading, and fluid catalytic cracking feedstock improvement

Ullmann's Energy Elsevier

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

Hydrocarbon Chemistry BoD - Books on Demand

* 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

Chemical Processing Handbook John Wiley & Sons

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.

Handbook of Petroleum Processing John Wiley & Sons

Substantially revising and updating the classic reference in the field, this handbook offers a valuable overview and myriad details on current chemical processes, products, and practices. No other source offers as much data on the chemistry, engineering, economics, and infrastructure of the industry. The Handbook serves a spectrum of individuals, from those who are directly involved in the chemical industry to others in related industries and activities. It provides not only the underlying science and technology for important industry sectors, but also broad coverage of critical supporting topics. Industrial processes and products can be much enhanced through observing the tenets and applying the methodologies found in chapters on Green Engineering and Chemistry (specifically, biomass conversion), Practical Catalysis, and Environmental Measurements; as well as expanded treatment of Safety, chemistry plant security, and Emergency Preparedness. Understanding these factors allows them to be part of the total process and helps achieve optimum results in, for example, process development, review, and modification. Important topics in the energy field, namely nuclear, coal, natural gas, and petroleum, are covered in individual chapters. Other new chapters include energy conversion, energy storage, emerging nanoscience and technology. Updated sections include more material on biomass conversion, as well as three chapters covering biotechnology topics, namely, Industrial Biotechnology, Industrial Enzymes, and Industrial Production of Therapeutic Proteins.

Zeolites and Zeolite-like Materials CRC Press

This unique reference is the only one-stop source for details on licensed petrochemical processes for the major organic chemicals, a \$200 billion annual market. With chapters prepared by some of the largest petrochemical and petroleum companies in the world, Handbook of Petrochemicals Production Processes provides in-depth process detail for commercial evaluation and covers plastics and polymers such as ethylene and polyethylene; propylene; ethylbenzene, styrene, and polystyrenes; vinyl chloride and polyvinyl chloride; and many others. This handbook answers questions on yields, unit operations, chemical and physical values, economics, and much more.

Efficient Petrochemical Processes ScholarlyEditions

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.

Handbook of Membrane Separations John Wiley & Sons

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

Uranium Production Technology Elsevier

Zeolites and Zeolite-like Materials offers a comprehensive and up-to-date review of the important areas of zeolite synthesis, characterization, and applications. Its chapters are written in an educational, easy-to-understand format for a generation of young zeolite chemists, especially those who are just starting research on the topic and need a reference that not only reflects the current state of zeolite research, but also identifies gaps and opportunities. The book demonstrates various applications of zeolites in heterogeneous catalysis and biomass conversion and identifies the endless possibilities that exist for this class of materials, their structures, functions, and future applications. In addition, it demonstrates that zeolite-like materials should be regarded as a living body developing towards new modern applications, thereby responding to the needs of modern technology challenges, including biomass conversion, medicine, laser techniques, and nanomaterial design, etc. The book will be of interest not only to zeolite-focused researchers, but also to a broad scientific and non-scientific audience. - Provides a comprehensive review of the literature pertaining to zeolites and zeolite-like materials since 2000 - Covers the chemistry of novel zeolite-like materials such as Metal-Organic Frameworks (MOFs), Covalent Organic Frameworks (COFs), hierarchical zeolite materials, new mesoporous and composite zeolite-like micro/mesoporous materials - Presents essential information of the new zeolite-like structures, with a balanced coverage of the most important areas of the zeolite research (synthesis, characterization, adsorption, catalysis, new applications of zeolites and zeolite-like materials) - Contains chapters prepared by known specialists who are members of the International Zeolite Association

Alkenes National Academies 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.

The Changing Landscape of Hydrocarbon Feedstocks for Chemical Production Elsevier

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.

Organic Geochemistry Gulf Professional Publishing

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.

Waste Biorefineries: Future Energy, Green Products and Waste Treatment Butterworth-Heinemann

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.

Aromatic Hydrocarbons—Advances in Research and Treatment: 2013 Edition McGraw-Hill Prof Med/Tech

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.

From Zeolites to Porous MOF Materials - the 40th Anniversary of International Zeolite Conference, 2 Vol Set CRC Press

On January 1988, the ascertained and economically accessible reserves of Natural Gas (NG) amounted to over 144,000 billion cubic meters worldwide, corresponding to 124 billion tons of oil equivalents (comparable with the liquid oil reserves, which are estimated to be 138 billion TOE). It is hypothesized that the volume of NG reserve will continue to grow at the same rate of the last decade. Forecasts on production indicate a potential increase from about 2,000 billion cubic meters in 1990 to not more than 3,300 billion cubic meters in 2010, even in a high economic development scenario. NG consumption represents only one half of oil: 1.9 billion TOE/y as compared to 3.5 of oil. Consequently, in the future gas will exceed oil as a carbon atom source. In the future the potential for getting energetic vectors or petrochemicals from NG will continue to grow. The topics covered in *Natural Gas Conversion V* reflect the large global R&D effort to look for new and economic ways of NG exploitation. These range from the direct conversion of methane and light paraffins to the indirect conversion through synthesis gas to fuels and chemicals. Particularly underlined and visible are the technologies already commercially viable. These proceedings prove that mature and technologically feasible processes for natural gas conversion are already available and that new and improved catalytic approaches are currently developing, the validity and feasibility of which will soon be documented. This is an exciting area of modern catalysis, which will certainly open novel and rewarding perspectives for the chemical, energy and petrochemical industries.

Springer Handbook of Petroleum Technology Springer

Hydrocarbons and their transformations play major roles in chemistry as raw materials and sources of energy. Diminishing petroleum supplies, regulatory problems, and environmental concerns constantly challenge chemists to rethink and redesign the industrial applications of hydrocarbons. Written by Nobel Prize-winner George Olah and hydrocarbon expert Árpád Molnár, the completely revised and expanded Second Edition of *Hydrocarbon Chemistry* provides an unparalleled contemporary assessment of the field, presenting basic concepts, current research, and future applications. *Hydrocarbon Chemistry* begins by discussing the general aspects of hydrocarbons, the separation of hydrocarbons from natural sources, and the synthesis from C1 precursors with recent developments for possible future applications. Each successive chapter deals with a specific type of hydrocarbon transformation. The Second Edition includes a new section on the chemical reduction of carbon dioxide—focusing on catalytic, ionic, electrocatalytic, photocatalytic, and enzymatic reductions—as well as a new chapter on new catalysts and activation methods, combinatorial chemistry, and environmental chemistry. Other topics covered include: Major processes of the petrochemical industry, such as cracking, reforming, isomerization, and alkylation Derivation reactions to form carbon-heteroatom bonds Hydrocarbon oxidations Metathesis Oligomerization and polymerization of hydrocarbons All chapters have been updated by adding sections on recent developments to review new advances and results. Essential reading for practicing scientists in industry, polymer and catalytic chemists, as well as researchers and graduate students, *Hydrocarbon Chemistry, Second Edition* remains the benchmark text in its field.

Handbook of Petroleum Refining Processes CRC Press

The Proceedings of the 15th International Zeolite Conference contain 291 full papers, including the full papers of 5 plenary lecture, 12 keynote lectures, and 4 invited lectures at the R. M. Barrer Symposium. The topics of these full papers include synthesis, modifications, structures, characterization, adsorption, separation and diffusion, catalysis, host-guest chemistry and advanced materials, industrial applications, theory and modeling, mesostructured materials, MOF materials, and natural zeolites. The other 271 full papers were selected from the about 1000 contributions submitted to the 15th IZC.- Most recent research results in zeolite science- Full indexes- Wide coverage of zeolite science and technology