Free ebook Materials selection for hydrocarbon and chemical plants (PDF)

Materials Selection for Hydrocarbon and Chemical Plants Control Techniques for Hydrocarbon and Organic Solvent Emissions from Stationary Sources In Situ Bioreclamation C4-Hydrocarbons and Derivatives The Gas-Phase Oxidation of Hydrocarbons Hydrocarbon Chemistry Hydrocarbon Pollution and its Effect on the Environment Analytical Advances for Hydrocarbon Research Fossil Hydrocarbon and Mineral Processing Data Book on Hydrocarbons Sand Injectites Remote Sensing for Hydrocarbon Exploration Fiscal Systems for Hydrocarbons Pipeline Design for Hydrocarbon Gases and Liquids Hydrocarbon Chemistry Future Air Force Requirements for Hydrocarbon Fuels C4-hydrocarbons and Derivatives Physical Constants of Hydrocarbon and Non-hydrocarbon Compounds The Yaws Handbook of Physical Properties for Hydrocarbons and Chemicals Biodegradation and Bioconversion of Hydrocarbons Inverse and Risking Methods in Hydrocarbon Exploration Hydrocarbon Biotechnology The Yaws Handbook of Thermodynamic Properties for Hydrocarbons and Chemicals Hydrocarbon and Lipid Microbiology Protocols Feasibility of Mossbauer Survey Meter for Hydrocarbon and Mineral Reserves Hydrocarbon and Oxidant Chemistry Observed at a Site Near St. Louis The Potential of Deep Seismic Profiling for Hydrocarbon Exploration Facies Models in Exploration and Development of Hydrocarbon and Ore Deposits Hydrocarbon Process Safety Flow Analysis for Hydrocarbon Pipeline Engineering Favorable and Potentially Favorable Areas for Hydrocarbon and Geothermal Energy Sources in Northeastern Arizona Conversion of Carbon Dioxide into Hydrocarbons Vol. 1 Catalysis Gas, oil and the Irish state TRC Thermodynamic Tables Unconventional Hydrocarbon Resources Advanced Algorithms for Mineral and Hydrocarbon Exploration Using Synthetic Aperture Radar Total Petroleum Hydrocarbons New Techniques for New Hydrocarbon Discoveries Surface Geochemical Surveys in the Lisbon and Lightning Draw Southeast Field Areas, San Juan County, Utah Hydrocarbon Chemistry, 2 Volume Set Hydrocarbon Exploration and Production

Materials Selection for Hydrocarbon and Chemical Plants

2017-11-22

describes the systematic procedure for using process and mechanical design information to select construction materials suitable for a range of chemical and hydrocarbon processing plants the volume features tables for locating the american society for testing and materials astm product form specifications for construction materials that have code allowable design stresses it analyzes threshold values for degradation phenomena involving thermal damage

Control Techniques for Hydrocarbon and Organic Solvent Emissions from Stationary Sources

1970

in situ bioreclamation applications and investigations for hydrocarbon and contaminated site remediation is a collection of selected papers submitted by participants to the international symposium in situ and on site bioreclamation held in san diego california in march 1991 the book consists of articles which represent a substantial technical contribution and technical notes and brief technology descriptions or reports of preliminary or less substantial studies that proposes and exposes various solutions for the biological treatment of contaminated soil water and gas this volume is one of two that represent the most complete and up to date set of papers at the time the book covers the most comprehensive collection of treatises that presents practices in the reversal of damages to the environment solutions vary from proven commercially available technologies for some applications such as reactor treatment of petroleum hydrocarbons in aqueous steams to fundamental research in others such as genetic engineering to develop strains of biodegradable xenobiotics environmentalists scientists students of natural sciences civil engineers and those concerned with the preservation and restoration of nature will find this book invaluable

In Situ Bioreclamation

2013-10-22

the book treats the c hydrocarbons and their secondary products as a contribution 4 to chemical engineering economics applying this field of teaching and research to the technical processes for making and processing this group of products so important to the chemical industry as early as tpe 1950s the then director of the institute for technical chemistry of the berlin technical university professor herbert kolbel took the initiative in the domain of chemical engineering economics and began systematic studies of project engineering and cost estimation in connection with chemical plants he also started a course on technical chemical processes in 1966 properties production procedures plant equipment and also the uses of technically interesting products are the central features of chemical technology the information is to be found in the large encyclopedias of technical chemistry on the other hand chemical engineering economics deals with all the economic conditions of usage of the raw materials possibilities of utilizing co products and the integration of these products into definite production programmes from the stand point of the chemical and technical fundamentals of the processes further important viewpoints are the costs of the products taking into consideration important and variable influences on these costs the situation and development of the market for the products and of increasing significance also the ecological global conditions for procuring raw materials and the production and marketing of the particular products

C4-Hydrocarbons and Derivatives

2012-12-06

the gas phase oxidation of hydrocarbons reviews research on the mechanism of oxidation of paraffins naphthenes olefines and aromatic hydrocarbons and explains in detail the phenomena and theories with significant kinetic equations and graphs this book first presents a study of the development of research on the gaseous phase oxidation of hydrocarbons the non chain schemes for the oxidation of hydrocarbons such as hydroxylation peroxidation and aldehyde and dehydrogenation schemes are then discussed this book also presents experimental investigations and important topics such as oxidation of methane and olefinic hydrocarbons this selection will be invaluable to students and experts in the field of chemistry and related disciplines

The Gas-Phase Oxidation of Hydrocarbons

2016-07-29

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 ? rp? d moln? r 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 EZYMATIC 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

Hydrocarbon Chemistry

2003-09-10

THIS BOOK COVERS HYDROCARBON POLLUTION MEASUREMENT TECHNIQUES FOR HYDROCARBONS RISK ASSESSMENT AND ENVIRONMENTAL IMPACT THIS COMPREHENSIVE BOOK TAKES A BROAD VIEW OF THE SUBJECT AND INTEGRATES A WIDE VARIETY OF APPROACHES THIS BOOK ATTEMPTS TO ADDRESS THE NEEDS OF GRADUATE AND POSTGRADUATE STUDENTS AND OTHER PROFESSIONALS OR READERS INTERESTED IN FOOD SOIL WATER AND AIR POLLUTION THE AIM OF THIS BOOK IS TO EXPLAIN AND CLARIFY IMPORTANT STUDIES AND COMPARE AND DEVELOP THE NEW AND GROUNDBREAKING MEASUREMENT TECHNIQUES WRITTEN BY LEADING EXPERTS IN THEIR RESPECTIVE AREAS THE BOOK IS HIGHLY RECOMMENDED TO PROFESSIONALS INTERESTED IN ENVIRONMENTAL AND HUMAN HEALTH BECAUSE IT PROVIDES SPECIFIC AND COMPREHENSIVE EXAMPLES

Hydrocarbon Pollution and its Effect on the Environment

2019-12-04

DETERMINING THE COMPOSITION AND PROPERTIES OF COMPLEX HYDROCARBON MIXTURES IN PETROLEUM SYNTHETIC FUELS AND PETROCHEMICAL PRODUCTS USUALLY REQUIRES A BATTERY OF ANALYTICAL TECHNIQUES THAT DETECT AND MEASURE SPECIFIC FEATURES OF THE MOLECULES SUCH AS BOILING POINT MASS NUCLEAR MAGNETIC RESONANCE FREQUENCIES ETC THERE HAVE ALWAYS BEEN A NEED FOR NEW AND IMPROVED ANALYTICAL TECHNOLOGY TO BETTER UNDERSTAND HYDROCARBON CHEMISTRY AND PROCESSES THIS BOOK PROVIDES AN OVERVIEW OF RECENT ADVANCES AND FUTURE CHALLENGES IN MODERN ANALYTICAL TECHNIQUES THAT ARE COMMONLY USED IN HYDROCARBON APPLICATIONS EXPERTS IN EACH OF THE AREAS COVERED HAVE REVIEWED THE STATE OF THE ART THUS CREATING A BOOK THAT WILL BE USEFUL TO READERS AT ALL LEVELS IN ACADEMIC INDUSTRY AND RESEARCH INSTITUTIONS

Analytical Advances for Hydrocarbon Research

2012-12-06

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

Fossil Hydrocarbon and Mineral Processing

1968

ACCOMPANYING CD ROM CONTAINS COLOR ILLUSTRATIONS CF PAGE 4 OF COVER

Data Book on Hydrocarbons

1950

THIS BOOK PROVIDES INSIGHTS INTO THE BENEFITS OF USING REMOTE SENSING DATA FROM A GEOSCIENTIST S PERSPECTIVE BY INTEGRATING THE DATA WITH THE UNDERSTANDING OF EARTH S SURFACE AND SUBSURFACE IN 3 SECTIONS THE BOOK TAKES A DETAILED LOOK AT WHAT DATA EXPLORATIONISTS USE WHEN THEY EXPLORE FOR HYDROCARBON RESOURCES ASSESS DIFFERENT TERRAIN TYPES FOR PLANNING AND HAZARDS AND EXTRACT PRESENT DAY GEOLOGIC ANALOGS FOR SUBSURFACE GEOLOGIC SETTINGS THE BOOK PRESENTS THE USAGE OF REMOTE SENSING DATA IN EXPLORATION IN A STRUCTURED WAY BY DETECTING INDIVIDUAL GEOLOGIC FEATURES AS BUILDING BLOCKS FOR COMPLEX GEOLOGIC SYSTEMS THIS CONCEPT ENABLES READERS TO BUILD THEIR OWN WORKFLOWS FOR THE ASSESSMENT OF COMPLEX GEOLOGIC SYSTEMS USING VARIOUS COMBINATIONS OF REMOTE SENSING DATA SECTION 1 INTRODUCES READERS TO THE FOUNDATIONS OF REMOTE SENSING FOR EXPLORATION COVERS VARIOUS METHODS OF IMAGE PROCESSING AND STUDIES DIFFERENT DIGITAL ELEVATION AND BATHYMETRY MODELS SECTION 2 PRESENTS THE CONCEPT OF GEOMORPHOLOGY AS A MEANS TO INTEGRATE SURFACE AND SUBSURFACE DATA DIFFERENT ASPECTS OF RENDERING IN 2D AND 3D ARE EXPLAINED AND USED FOR THE INTERPRETATION AND EXTRACTION OF GEOLOGIC FEATURES THAT ARE USED IN EXPLORATION SECTION 3 ADDRESSES REMOTE SENSING FOR HYDROCARBON EXPLORATION IN DETAIL FROM GEOPHYSICAL DATA ACQUISITION TO DEVELOPMENT AND INFRASTRUCTURE PLANNING THE ORGANIZATION OF THIS CHAPTER FOLLOWS AN EXPLORATION WORKFLOW FROM REGIONAL TO LOCAL MODELING STUDYING BASIN AND PETROLEUM SYSTEM MODELING AS WELL AS LOGISTICS PLANNING OF SEISMIC SURVEYS AND NEAR SURFACE MODELING ASPECTS OF FIELD DEVELOPMENT AND INFRASTRUCTURE PLANNING COMPRISE MULTI TEMPORAL AND DYNAMIC MODELING THE SECTION CLOSES WITH A STRUCTURED APPROACH TO EXTRACTING GEOLOGIC ANALOGS FROM INTERPRETED REMOTE SENSING DATA THE BOOK WILL BE OF INTEREST TO PROFESSIONALS AND STUDENTS WORKING IN EXPLORATION FOR HYDROCARBONS AND WATER RESOURCES AS WELL AS GEOSCIENTISTS AND ENGINEERS USING REMOTE SENSING FOR

INFRASTRUCTURE PLANNING HAZARD ASSESSMENT AND DYNAMIC ENVIRONMENTAL STUDIES

Sand Injectites

2007

ALTHOUGH HOST GOVERNMENTS AND INVESTORS MAY SHARE ONE COMMON OBJECTIVE THE DESIRE FOR PROJECTS TO GENERATE HIGH LEVELS OFF REVENUE THEIR OTHER GOALS ARE NOT ENTIRELY ALIGNED HOST GOVERNMENTS AIM TO MAXIMIZE RENT FOR THEIR COUNTRY OVER TIME WHILE ACHIEVING OTHER DEVELOPMENT AND SOCIOECONOMIC OBJECTIVES INVESTORS AIM TO ENSURE THAT THE RETURN ON INVESTMENT IS CONSISTENT WITH THE RISK ASSOCIATED WITH THE PROJECT AND WITH THEIR CORPORATIONS STRATEGIC OBJECTIVES TO RECONCILE THESE OFTEN CONFLICTING OBJECTIVES MORE AND MORE COUNTRIES RELY ON TRANSPARENT INSTITUTIONAL ARRANGEMENTS AND FLEXIBLE NUETRAL FISCAL REGIMES THIS PAPER EXAMINES THE KEY ELEMENTS OF THE LEGAL AND FISCAL FRAMEWORKS UTILIZED IN THE PETROLEUM SECTOR AND AIMS TO OUTLINE DESIRABLE FEATURES THAT SHOULD BE CONSIDERED IN THE DESIGN OF FISCAL POLICY WITH THE OBJECTIVE OF OPTIMIZING THE HOST GOVERNMENT S BENEFITS TAKING INTO ACCOUNT THE EFFECT THIS WOULD HAVE ON THE PRIVATE SECTOR S INVESTMENT

Remote Sensing for Hydrocarbon Exploration

2022

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 HYDROCARBONS ARE UBIQUITOUS INGREDIENTS OF THE CHEMICAL COMPOSITION OF THE TROPOSPHERE WHILE PRESENT AS TRACE COMPONENTS THEY MAKE A MAJOR CONTRIBUTION TOWARD THE PRODUCTION OF OZONE AND OTHER OXIDANTS SUCH AS PEROXYACETYL NITRATE PAN AND HYDROGEN PEROXIDE H202 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 CARBON AND HYDROGEN THE TWO BASIC BUILDING UNITS CAN BE COMBINED IN A MILLION DIFFERENT WAYS TO GIVE A PLETHORA OF FASCINATING ORGANIC COMPOUNDS

Fiscal Systems for Hydrocarbons

2007-01-01

THE TWO HYDROCARBON STRUCTURES EXHIBITING THE MOST PROMISE AS CANDIDATE HIGH TEMPERATURE FUELS ARE THE ALKYL SUBSTITUTED MONOCYCLICS AND THE ALKYL SUBSTITUTED CONDENSED BICYCLICS FOR SPECIALIZED FUELS THE ISOPARAFFIN STRUCTURE BEST SUITS THE REQUIREMENTS FOR A WEIGHT LIMITED FUEL APPLICATION WHEREAS FOR AN EXTREME HIGH DENSITY FUEL THE CONDENSED TRICYCLIC STRUCTURE EXHIBITS THE BEST COMPROMISE OF PROPERTIES THE PRELIMINARY RESULTS OF A VAPOR FUELS STUDY INDICATE THAT THE BASIC CONDENSED BICYCLIC STRUCTURE ONCE AGAIN OFFERS THE MOST PROMISE FOR AN ADVANCED VAPOR FUEL RESEARCH HAS INDICATED THAT A VAPOR FUEL WILL EXTEND THE FLIGHT SPEED OF ADVANCED SYSTEMS BEYOND MACH 5 FOR GREATER SPEEDS OR FOR DESIRABLE ADDITIONAL COOLING BELOW MACH 5 A TYPE OF ENDOTHERMIC FUEL WILL BE REQUIRED THE PRIMARY CONTRIBUTION OF THE ENDOTHERMIC FUELS PROGRAM IS THAT THE FEASIBILITY OF CONDUCTING THIS TYPE OF REACTION UNDER CONDITIONS TO BE ENCOUNTERED IN ADVANCED AIR BREATHING SYSTEMS IS ESTABLISHED AND THAT THE REACTION PRODUCTS WILL PERFORM SATISFACTORILY IN THE COMBUSTOR

Pipeline Design for Hydrocarbon Gases and Liquids

1975

THE LETTER SYMBOLS FOR THE CONCEPTS MOST WIDELY USED IN CHEMICAL ENGINEERING ARE LISTED ON THE FOLLOWING PAGES

Hydrocarbon Chemistry

2015-08

REFINERIES AND PETROCHEMICAL ENGINEERS TODAY ARE ACCEPTING MORE UNCONVENTIONAL FEEDSTOCKS SUCH AS HEAVY OIL AND SHALE CAUSING UNIQUE CHALLENGES ON THE PROCESSING SIDE OF THE BUSINESS TO CREATE MORE RELIABLE ENGINEERING DESIGN OF PROCESS EQUIPMENT FOR THE PETROCHEMICAL INDUSTRY PETROLEUM ENGINEERS AND PROCESS MANAGERS ARE FORCED TO STUDY THE PHYSICAL PROPERTIES AND COMPOUNDS OF THESE PARTICULAR HYDROCARBONS INSTEAD OF LOOKING UP EACH COMPOUND S INFORMATION THE YAWS HANDBOOK OF PHYSICAL PROPERTIES FOR HYDROCARBONS AND CHEMICALS SECOND EDITION PRESENTS AN EASY TO USE FORMAT WITH RAPID ACCESS TO SEARCH FOR THE PARTICULAR COMPOUND AND UNDERSTAND ALL THE COMPLEX CALCULATIONS IN ONE TABULAR FORMAT UNDERSTANDING THE COMPOSITION OF HYDROCARBONS IS NOT EASY TO CALCULATE QUICKLY OR ACCURATELY BUT THIS MUST HAVE REFERENCE LEADS THE ENGINEER TO BETTER ESTIMATED PROPERTIES AND FRACTIONS FROM EASILY MEASURED COMPONENTS EXPANDED TO COVER MORE TOTAL COMPOUNDS AND RELEVANT FUNCTIONS THE YAWS HANDBOOK OF PHYSICAL PROPERTIES FOR HYDROCARBONS AND CHEMICALS SECOND EDITION REMAINS A NECESSARY REFERENCE TOOL FOR EVERY PETROCHEMICAL AND PETROLEUM ENGINEERS LIBRARY COVERAGE ADDED ON ELEMENTS FOR HYDROCARBONS AND CHEMICALS WITH MORE THAN 200 REAL WORLD CASES INCLUDED FOR PRACTICALITY INCREASED COMPOUND COVERAGE FROM 41 000 TO 54 000 TOTAL COMPOUNDS TO QUICKLY ACCESS FOR EVERYDAY USE NEW FUNCTIONS ADDED SUCH AS TESTING BOILING POINT TEMPERATURE AND NEW DATA ON DENSITY AND REFRACTORY INDEX

Future Air Force Requirements for Hydrocarbon Fuels

1962

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

C4-hydrocarbons and Derivatives

1989

this book looks at how modern developments have enhanced the utility of basin analysis in hydrocarbon exploration a major factor is modern computing power which enables complex monte carlo type calculations to be rapidly carried out a second is the transfer of concepts from the economic arena to the theatre of hydrocarbon production for example setting risking procedures to cope with data uncertainties in addition now there are available powerful methods for handling the determination of parameters in the highly non linear world of equations describing various facets of basin analysis th

Physical Constants of Hydrocarbon and Non-hydrocarbon Compounds

1991

this volume offers environmentally friendly technical solutions that can be implemented to solve problems throughout the value chain of the fossil fuel industry this new book presents an up to date view of hydrocarbon microbiology and biotechnology presented by experts around the world with interest in how our expanding understanding of hydrocarbonoclast ecology and physiology can translate to better tools for bioremediation oil recovery bio upgrading of unconventional crudes the development of biorefining technologies and the production of hydrogen and electricity from hydrocarbon wastes the common theme across the chapters in this book is an interest in how developing hydrocarbon biotechnologies may reduce our impact on the global environment written by eminent scientists from both academia and industry the book starts with a historical perspective on hydrocarbon chemistry and formation petroleum microbiology and biotechnology this is followed by a review of recent research developments in bioremediation and other biotechnologies for hydrocarbons the principal constituents of petroleum and natural gas

The Yaws Handbook of Physical Properties for Hydrocarbons and Chemicals

2015-01-06

petroleum and chemical engineers are constantly looking for reliable data yet don t have the time to search through multiple sources and articles to get the most accurate pieces of data the yaws handbook of thermodynamic properties for hydrocarbons and chemicals 2nd edition brings a one stop database reference for engineers to quickly gain access on over 12 000 compounds simple and complex fluids and an extensive list of properties all to validate and improve on their thermodynamic modeling enhanced with eight new chapters covering more equation of state parameters yaws product continues to remain a go to source to crosscheck critical properties available on process simulators or pvt software and estimate these properties based on the group contribution methods described in the different chapters the yaws handbook of thermodynamic properties for hydrocarbons and chemicals 2nd edition stands as the trusted database to optimize petrochemical processes equipment and operations provides a reliable database reference for thermodynamic properties even varied by temperature as well as simple and complex fluids mixtures and property calculations updated with eight additional new chapters covering a modern platform of practical applications in modelling both pure fluids and mixtures with cubic equations of state delivers accurate and quick options and solutions to size or simulate petrochemical processes and develop better predictive models

Biodegradation and Bioconversion of Hydrocarbons

2016-11-10

this volume presents methods for analysing and quantifying petroleum hydrocarbons and lipids based on their chemical and physical properties as well as their biological effects it features protocols for extracting hydrocarbons from solid matrices water and air and a dedicated chapter focusing on volatile organic compounds several approaches for separating and detecting diverse classes of hydrocarbons and lipids are described including

TANDEM GAS CHROMATOGRAPHY GC COUPLED WITH MASS SPECTROMETRY MS OR FLAME IONISATION DETECTION FOURIER TRANSFORM INDUCTION COUPLED RESONANCE MS AND FLUORESCENCE BASED TECHNIQUES THE BOOK DETAILS HIGH PERFORMANCE LIQUID CHROMATOGRAPHY MS FOR MICROBIAL LIPIDS AS WELL AS A COMBINATION OF TECHNIQUES FOR NAPHTHENIC ACIDS TWO CHAPTERS FOCUS ON QUANTIFYING BIOAVAILABLE HYDROCARBON FRACTIONS BY USING CYCLODEXTRIN SORBENTS AND BACTERIAL BIOREPORTERS RESPECTIVELY WHILE A CLOSING CHAPTER EXPLAINS HOW COMPOUND SPECIFIC STABLE ISOTOPE ANALYSIS CAN BE USED TO MEASURE THE FATE OF HYDROCARBONS IN THE ENVIRONMENT HYDROCARBON AND LIPID MICROBIOLOGY PROTOCOLS THERE ARE TENS OF THOUSANDS OF STRUCTURALLY DIFFERENT HYDROCARBONS HYDROCARBON DERIVATIVES AND LIPIDS AND A WIDE ARRAY OF THESE MOLECULES ARE REQUIRED FOR CELLS TO FUNCTION THE GLOBAL HYDROCARBON CYCLE WHICH IS LARGELY DRIVEN BY MICROORGANISMS HAS A MAJOR IMPACT ON OUR ENVIRONMENT AND CLIMATE MICROBES ARE RESPONSIBLE FOR CLEANING UP THE ENVIRONMENTAL POLLUTION CAUSED BY THE EXPLOITATION OF HYDROCARBON RESERVOIRS AND WILL ALSO BE PIVOTAL IN REDUCING OUR RELIANCE ON FOSSIL FUELS BY PROVIDING BIOFUELS PLASTICS AND INDUSTRIAL CHEMICALS GAINING AN UNDERSTANDING OF THE RELEVANT FUNCTIONS OF THE WIDE RANGE OF MICROBES THAT PRODUCE CONSUME AND MODIFY HYDROCARBONS AND RELATED COMPOUNDS WILL BE KEY TO RESPONDING TO THESE CHALLENGES THIS COMPREHENSIVE COLLECTION OF CURRENT AND EMERGING PROTOCOLS WILL FACILITATE ACQUISITION OF THIS UNDERSTANDING AND EXPLOITATION OF USEFUL ACTIVITIES OF SUCH MICROBES

Inverse and Risking Methods in Hydrocarbon Exploration

2005

EXPLORATION OF NATURAL RESOURCES IS BECOMING MORE AND MORE EXPENSIVE THIS MEANS THAT MORE SCIENTIFIC APPROACHES ARE NEEDED USING THE BEST TECHNIQUES AVAILABLE HOWEVER NO SINGLE TECHNIQUE CAN COVER ANY OF THE OBJECTIVES REGIONAL APPROACHES NECESSARY TO OUTLINE A PROSPECTIVE AREA LACK THE DETAIL REQUIRED FOR EXPLORATION DETAILED METHODS AND TECHNIQUES LACK PROPER OVERVIEW A COMBINATION OF BOTH TYPES OF APPROACHES AND SEVERAL TECHNIQUES WITHIN ARE REQUIRED TO DO OPTIMAL EXPLORATION THIS BOOK PROVIDES A NUMBER OF EXAMPLES MODELS OF DIFFERENT APPROACHES AND STYLES FROM DIFFERENT PARTS OF THE WORLD GIVING THE READER NOT ONLY NEW INFORMATION BUT ALSO A VIEW OF HOW DIFFERENT COUNTRIES EMPHASIZE THEIR EXPLORATION

Hydrocarbon Biotechnology

2022-11-24

THE VITALLY IMPORTANT SUBJECT OF PROCESS SAFETY IN THE HYDROCARBON INDUSTRY IS ADDRESSED IN THIS BOOK THE COVERAGE IS BROAD AND THE AUTHOR HAS INTEGRATED THE VARIOUS ASPECTS SO THAT THE BOOK WILL BE READILY ACCESSIBLE TO READERS OF DIVERSE BACKGROUNDS A GRASP OF THE MATERIAL REQUIRES ONLY FAMILIARITY WITH PHYSICAL AND ORGANIC CHEMISTRY AT FIRST YEAR UNDERGRADUATE LEVEL AND WITH HEAT TRANSFER AND FLUID FLOW AT THE SAME LEVEL THE TEXT IS COMPLEMENTED BY MANY NUMERICAL EXAMPLES WITH FULL SOLUTIONS CONTENTS FOREWORD BY DR DONALD OLANDER GOODRICH CORPORATION PREFACE BACKGROUND TO THE OIL AND GAS INDUSTRY HYDROCARBON LEAKAGE AND DISPERSION THE COMBUSTION BEHAVIOUR OF HYDROCARBONS OFFSHORE OIL AND GAS PRODUCTION PHYSICAL OPERATIONS ON HYDROCARBONS AND ASSOCIATED HAZARDS CHEMICAL OPERATIONS ON HYDROCARBONS AND HYDROCARBON DERIVATIVES HAZARDS ASSOCIATED WITH PARTICULAR HYDROCARBON PRODUCTS SOME RELEVANT DESIGN PRINCIPLES SOME RELEVANT MEASUREMENT PRINCIPLES TOXICITY HAZARDS SAFE DISPOSAL OF UNWANTED HYDROCARBON MEANS OF OBTAINING HYDROCARBON OTHER THAN FROM CRUDE OIL AND RELATED SAFETY ISSUES APPENDIX OUTLINE OF THE CANVEY STUDY SOLUTIONS TO NUMERICAL PROBLEMS SELF TEST QUESTIONS INDEX

The Yaws Handbook of Thermodynamic Properties for Hydrocarbons and Chemicals

2018-02-01

FLOW ANALYSIS FOR HYDROCARBON PIPELINE ENGINEERING GIVES ENGINEERS A TOOL TO HELP THEM DETERMINE FLUID DYNAMICS THE BOOK DESCRIBES HYDROCARBON FLUID TRANSPORT IN PIPELINES BY PRESENTING USEFUL APPLIED THERMODYNAMIC DERIVATIONS SPECIALIZED FOR PIPELINES ALL TRANSPORT PHENOMENA IS COVERED SUCH AS HEAT MOMENTUM AND MASS TRANSPORT MOVING PAST THE FUNDAMENTALS THE REFERENCE ADDRESSES THE COMPLEXITY OF THESE FLUIDS AND DEDICATES A CHAPTER ON MULTIPHASE MIXTURES INCLUDING SLUGGING HYDRATES WAX AND SAND ROUNDING OUT WITH PRACTICAL CASE STUDIES THIS BOOK DELIVERS A CRITICAL REFERENCE FOR ENGINEERS AND FLOW ASSURANCE EXPERTS THAT WILL HELP THEM CORRELATE BASIC FLUID PRINCIPLES WITH APPLIED ENGINEERING PRACTICES INCLUDES DISCUSSIONS ON SUSTAINABLE OPERATIONS SUCH AS CO2 TRANSPORT IN PIPELINES UTILIZED IN CARBON CAPTURE AND HYDROCARBON RECOVERY OPERATIONS DELIVERS MULTIPLE CASE STUDIES FOR PRACTICAL APPLICATIONS AND LESSONS LEARNED DESCRIBES HYDROCARBON FLUID TRANSPORT IN PIPELINES BY PRESENTING USEFUL APPLIED THERMODYNAMIC DERIVATIONS SPECIALIZED FOR PIPELINES

Hydrocarbon and Lipid Microbiology Protocols

2017-01-09

THIS BOOK PRESENTS THE CATALYTIC CONVERSION OF CARBON DIOXIDE INTO VARIOUS HYDROCARBONS AND OTHER PRODUCTS USING PHOTOCHEMICAL ELECTROCHEMICAL AND THERMO CHEMICAL PROCESSES PRODUCTS INCLUDE FORMATE FORMIC ACID ALCOHOLS LOWER AND HIGHER HYDROCARBONS GASES SUCH AS HYDROGEN CARBON MONOXIDE AND SYNGAS

Feasibility of Mossbauer Survey Meter for Hydrocarbon and Mineral Reserves

1975

gas and oil are pivotal to the functioning of modern societies yet the ownership control production and consumption of hydrocarbons often provokes intense disputes with serious ramifications gas oil and the irish state examines the dynamics and conflicts of state hydrocarbon management and provides the first comprehensive study of the irish model interpreting the corrib gas conflict as a microcosm of the irish state s approach to hydrocarbon management the book articulates environmental health and safety concerns underpinning community resistance to the project it emphasises how the dispute exposed broader issues such as the privatisation of irish hydrocarbons in exchange for one of the lowest rates of government take in the world and served to problematise how the state functions its close relationship with capital and its deployment of coercive force to repress dissent analysis of these issues occurs within an original account of decision making and policy formation around irish hydrocarbons from 1957 to 2014 the book traces the development of the state s approach in tandem with occurrences in irish political economy and examines the impact of global trends on different approaches to hydrocarbon management a comparative case study of norway reveals ideological political social and economic forces which influence how states manage their hydrocarbons factors which the book uses as the basis for a rigorous critique of the irish model

Hydrocarbon and Oxidant Chemistry Observed at a Site Near St. Louis

1977

a comprehensive textbook presenting techniques for the analysis and characterization of shale plays significant reserves of hydrocarbons cannot be extracted using conventional methods improvements in techniques such as horizontal drilling and hydraulic fracturing have increased access to unconventional hydrocarbon resources ushering in the shale boom and disrupting the energy sector unconventional hydrocarbon resources techniques for reservoir engineering analysis covers the geochemistry petrophysics geomechanics and economics of unconventional shale oil plays the text uses a step by step approach to demonstrate industry standard workflows for calculating resource volume and optimizing the extraction process volume highlights include methods for rock and fluid characterization of unconventional shale plays a workflow for analyzing wells with stimulated reservoir volume regions an unconventional approach to understanding of fluid flow through porous media a comprehensive summary of discoveries of massive shale resources worldwide data from eagle ford woodford wolfcamp and the bakken shale plays examples homework assignments projects and access to supplementary online resources hands on teaching materials for use in petroleum engineering software applications the american geophysical union promotes discovery in earth and space science for the benefit of humanity its publications disseminate scientific knowledge and provide resources for researchers students and professionals

The Potential of Deep Seismic Profiling for Hydrocarbon Exploration

1990

advanced algorithms for mineral and hydrocarbon exploration using synthetic aperture radar is a research and practically based reference that bridges the gap between the remote sensing industry and the mineral and hydrocarbon exploration industry in this context the book explains how to commercialize the applications of synthetic aperture radar and quantum interferometry synthetic aperture radar qinsar for mineral and hydrocarbon exploration this multidisciplinary reference is useful for oil and gas companies the mining industry geoscientists and coastal and petroleum engineers presents both theoretical and practical applications of various types of remote sensing for hydrocarbon and mineral exploration covers specific problems for exploration professionals and provides applications for solving each problem includes more than 100 images and figures to help explain the concepts and applications described in the book

Facies Models in Exploration and Development of Hydrocarbon and Ore Deposits

1991-06

the term total petroleum hydrocarbons tphs is used for any mixture of several hundred hydrocarbons found in crude oil and they represent the sum of volatile petroleum hydrocarbons and extractable petroleum hydrocarbons the petrol range organics include hydrocarbons from c6 to c10 while diesel range organics are c10 c28 hydrocarbons environmental pollution by petroleum hydrocarbons is one of the major global concerns particularly in oil yielding countries in fact there are more than five million potentially contaminated areas worldwide that represent in general a lost economic opportunity and a threat to the health and well being of humans and the environment petroleum contaminated sites constitute almost one third of the total sites polluted with chemicals around the globe the land contamination caused by industrialization was recognized as early as the 1960s but less than a tenth of potentially contaminated lands have been remediated due to the nature of the contamination cost technical impracticability and insufficient land legislation and enforcement this book is the first single source that provides comprehensive information on the different aspects of tphs such as sources and range of products methods of analysis fate and bioavailability ecological implications including impact on human

health potential approaches for bioremediation such as risk based remediation and regulatory assessment procedures for tph contaminated sites as such it is a valuable resource for researchers graduate students technicians in the oil industry and remediation practitioners as well as policy makers

Hydrocarbon Process Safety

2003

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