

# Free reading Fluid catalytic cracking handbook second edition .pdf

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Industry Catalytic Cracking of Hydrocarbons with Novel Metal Traps [microform]  
Synthesis and Cracking of Hydrocarbons Handbook of Refinery Desulfurization

# **Fluid Catalytic Cracking Handbook**

2000-06-08

full text engineering e book

# **Fluid Catalytic Cracking Handbook**

2015-08

this is providing practical information and tools that engineers can use to maximize the profitability and reliability of their fluid catalytic cracking operations the updated chapters and new content deliver expertise and know how to an industry that faces significant cost cutting in capital expenditure and r d along with the retirement of technical specialists who are taking existing knowledge out of the industry with them this fcc handbook provides a valuable easy to understand resource for both experienced and inexperienced engineers and anyone else associated with the fcc process fluid catalytic cracking fcc is one of the most important conversion processes used in petroleum refineries it is widely used to convert the high boiling high molecular weight hydrocarbon fractions of petroleum crude oils to more valuable gasoline olefinic gases and other products 1 2 3 cracking of petroleum hydrocarbons was originally done by thermal cracking which has been almost completely replaced by catalytic cracking because it produces more gasoline with a higher

octane rating it also produces byproduct gases that are more olefinic and hence more valuable than those produced by thermal cracking

## **Fluid Catalytic Cracking**

1993-07-23

the primary focus of this book as a whole is on performance performance of the catalyst of its surface of the fcc unit of the feedstocks employed of the analytical methods used to characterize the catalysts and of environmentally directed regulations that govern the production of transportation fuels from petroleum the emphasis on catalyst performance particularly commercial performance essentially dictated that the chapter authors be experienced industrial catalytic chemists and engineers however each author approached the task with a clear cut obligation to connect the roots of the science of fcc catalysis with the technology fluid catalytic cracking science and technology has been written for workers in industrial catalysis and academia including graduate students in chemistry or chemical engineering who are interested in acquiring an overall knowledge of one of the world s most important areas of catalysis the book is concise each topic is treated briefly complete all aspects of fcc catalysis are covered and clear anyone involved in this field will find topics of interest

# ***Petroleum Processing Handbook***

1992-04-30

a reference that details the pertinent chemical reactions and emphasizes the plant design and operations of petroleum processing procedures the handbook is divided into four sections products refining manufacturing processes and treating processes wherever possible shortcut methods of calcula

## **Fluid Catalytic Cracking VI: Preparation and Characterization of Catalysts**

2004-07-06

this volume looks at the recent progress of this technology as reported in the 21 papers presented during the 219th national meeting of the acs in new york september 5 11 2003 in addition the volume focuses on the use of modern spectroscopic techniques for the generation of detailed structural analysis required for the advancement of the science of fcc design other chapters look at the use and importance of solid state nuclear magnetic resonance nmr microcalorimetry and atomic force microscopy afm to the study of fccs and discussing strategies to control pollutant emissions from a refinery fccu and looking at

advances in fcc preparation

## **Fluid Catalytic Cracking Technology and Operations**

1997

fluid catalytic cracking fcc is the dominant conversion process in petroleum refineries and the major contributor to value added in the refining process successful operation of the fcc unit is critical to the operation of the fcc unit is critical to the operating success of most refineries this book provides a complete and in depth view of fcc process design and operating principles and the current fcc technologies available to the refining industry

## **Catalytic cracking**

1986

since 1987 the petroleum division of the american chemical society acs has sponsored at 3 year intervals an international symposium on fluid cracking catalysts fcc technology this volume collects the recent progress of this technology as reported in the papers presented during the 232th national meeting of the acs in san francisco september 10 14 2006 sixty six years after the introduction of the fluid cracking catalyst process it remains the main process of gasoline generation for the estimated 237 millions cars on us roads catalysts

testing and evaluation still remains a subject of interest debate and controversy lambda sweep testing testing of sox nox and combustion promoters have been discussed in details together with catalyst evaluation for atmospheric residues and metal contaminated oils cracking of particular interest has been the introduction of novel concept in process design aimed at improving cracked product selectivity such as two stage risers for better gasoline and olefins production and downer technology for high severity processes the importance of solid state nuclear magnetic resonance nmr in the study of crude oils catalysts and reaction products are illustrated by several examples two contributions describe the use of predictive methods to understand fcc aging and deactivation and personal overviews of the development of sox and combustion promoters technology are presented presents findings from the tri annual international symposium on fluid cracking catalysts fcc technology sponsored by the petroleum division of the american chemical society acs two contributions describe the use of predictive methods to understand fcc aging and deactivation personal overviews by the authors of the development of sox and combustion promoters technology

## **Fluid Catalytic Cracking VII:**

2011-09-22

catalyst production for the transformation of crudes into gasoline and other fuel products is a billion dollar year business and fluid cracking catalysts fccs represent almost half of

the refinery catalyst market during the cracking reactions the fcc surface is contaminated by metals ni v fe cu na and by coke deposition as a result the catalyst activity and product selectivity is reduced to unacceptable levels thus forcing refiners to replace part of the recirculating equilibrium fcc inventory with fresh fcc to compensate for losses in catalyst performance about 1 100 tons day of fcc are used worldwide in over 200 fluid cracking catalyst units fccus it is for these reasons that refiners interest in fcc research has remained high through the years almost independantly of crude oil prices however recent oil company mergers and the dissolution of research laboratories have drastically decreased the number of researchers involved in petroleum refining research projects as a result the emphasis of research has shifted from new materials to process improvements and this trend is clearly reflected in the type of papers contained in this volume modern spectroscopic techniques continue to be essential in the understanding of catalyst performance and several chapters in the book describe the use of  $^{27}\text{Al}$   $^{29}\text{Si}$  and  $^{13}\text{C}$  nmr to study variation in fcc acidity during aging and coke deposition in addition several chapters have been dedicated to the modeling of fcc deactivation and to the understanding of contact times on fcc performance refiners efforts to conform with environmental regulations are reflected in chapters dealing with sulfur removal metals contaminants and olefin generation



# **Fluid Catalytic Cracking with Zeolite Catalysts**

1979

reviews recent accomplishments in the field of fluid cracking catalysts fcc discusses the development of more specialized and effective catalysts and processes as well as the modification of current technology to meet future challenges in fuel refining written by nearly 50 internationally recognized experts from academia and industry

## ***Fluid Catalytic Cracking V***

2001-04-27

there is a renaissance that is occurring in chemical and process engineering and it is crucial for today s scientists engineers technicians and operators to stay current with so many changes over the last few decades in equipment and processes petroleum refining is almost a living document constantly needing updating with no new refineries being built companies are spending their capital re tooling and adding on to existing plants refineries are like small cities today as they grow bigger and bigger and more and more complex a huge percentage of a refinery can be changed literally from year to year to account for the type of crude being refined or to integrate new equipment or processes this book is the most up to date and comprehensive coverage of the most significant and recent changes to

petroleum refining presenting the state of the art to the engineer scientist or student useful as a textbook this is also an excellent handy go to reference for the veteran engineer a volume no chemical or process engineering library should be without written by one of the world s foremost authorities this book sets the standard for the industry and is an integral part of the petroleum refining renaissance it is truly a must have for any practicing engineer or student in this area

## **Fluid Cracking Catalysts**

1998-01-05

refiners efforts to conform to increasingly stringent laws and a preference for fuels derived from renewable sources have mandated changes in fluid cracking catalyst technology advances in fluid catalytic cracking testing characterization and environmental regulations explores recent advances and innovations in this important component of petr

## **Petroleum Refining Design and Applications Handbook**

2018-07-31

petroleum asphalt is a sticky black and highly viscous liquid or semi solid that is present in most petroleum crude oils and in some natural deposits petroleum crude oil is a complex mixture of a great many different hydrocarbons refined petroleum products are derived from crude oils through processes such as catalytic cracking and fractional distillation refining is a necessary step before oil can be burned as fuel or used to create end products residual fuel oil is a complex mixture of hydrocarbons prepared by blending a residuum component with a flux stock which is a distillate component diluent to give the desired viscosity of the fuel oil produced petroleum refining is the process of separating the many compounds present in crude petroleum an oil refinery or petroleum refinery is an industrial process plant where crude oil is processed and refined into more useful products the global petroleum asphalt market is valued at usd 48.8 billion in 2017 and is expected to reach usd 77.67 billion by the end of 2024 growing at a growth rate of 6.87 between 2017 and 2024 the global bunker fuel market was valued at 137.215.5 million in 2017 and is expected to reach 273.050.4 million by 2025 registering a cagr of 9.4 from 2018 to 2025 some of the fundamentals of the book are composition of radiation effects on lubricants thermal cracking of pure saturated hydrocarbons petroleum asphalts refinery products refinery feedstocks blending and compounding oil refining residual fuel oils distillate heating oils formulations of petroleum photographs of machinery with suppliers contact details a total guide to manufacturing and entrepreneurial success in one of today's most lucrative petroleum industry this book is one stop guide to one of the fastest growing sectors of the petroleum industry where opportunities abound for manufacturers retailers and entrepreneurs this is the only complete handbook on the commercial production of

petroleum products it serves up a feast of how to information from concept to purchasing equipment

## **Fluid Catalytic Cracking II**

1991

the primary focus of this book as a whole is on performance performance of the catalyst of its surface of the fcc unit of the feedstocks employed of the analytical methods used to characterize the catalysts and of environmentally directed regulations that govern the production of transportation fuels from petroleum the emphasis on catalyst performance particularly commercial performance essentially dictated that the chapter authors be experienced industrial catalytic chemists and engineers however each author approached the task with a clear cut obligation to connect the roots of the science of fcc catalysis with the technology fluid catalytic cracking science and technology has been written for workers in industrial catalysis and academia including graduate students in chemistry or chemical engineering who are interested in acquiring an overall knowledge of one of the world s most important areas of catalysis the book is concise each topic is treated briefly complete all aspects of fcc catalysis are covered and clear anyone involved in this field will find topics of interest source inconneue

# **Fluid Catalytic Cracking**

1988

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society acs two contributions describe the use of predictive methods to understand fcc aging and deactivation personal overviews by the authors of the development of sox and combustion promoters technology

## **Advances in Fluid Catalytic Cracking**

2010-11-30

technical guide to electrostatic precipitators in fluidized catalytic cracking units

## **Petroleum & Petroleum Products Technology Handbook**

2019-05-04

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

## **Fluid Catalytic Cracking**

1993

petroleum refining involves refining crude petroleum as well as producing raw materials for the petrochemical industry this book covers current refinery processes and process types that are likely to come on stream during the next three to five decades the book includes 1 comparisons of conventional feedstocks with heavy oil tar sand bitumen and bio feedstocks 2 properties and refinability of the various feedstocks 3 thermal processes versus hydroprocesses and 4 the influence of refining on the environment

## **Fluid Catalytic Cracking VII**

2007

much has been written about fundamental aspects of catalysis yet despite their universal applications details concerning commercial catalysts and information about actual operating conditions are not readily available this book provides up to date reviews and references to guide those working on industrial catalysts it will be an invaluable guide for catalysis researchers in industry and academia and for students

## ***FCCU Electrostatic Precipitator Handbook***

2013-06-28

discusses the formulation characterization microactivity and pilot plant testing and product analysis of fluid cracking catalysts examines the use of modern spectroscopic techniques such as infrared spectroscopy solid state nuclear magnetic resonance spectroscopy and x ray photoelectron spectroscopy for the analysis of fcc catalysts presents the first use of atomic force microscopy in the study of fcc catalysts studies the impact of environmental laws on the discovery of novel fcc catalysts

## **Handbook of Petroleum Refining Processes**

1986

besides covering topics like catalytic cracking hydrocracking and alkylation this volume has chapters on waste water treatment and the economics of managing or commissioning the design of a petroleum refinery found only in this volume is material on operating a jointly owned and operated refinery over the last decade the ownership of many refineries has shifted to small companies from the large integrated companies because of this shift many refineries are now jointly owned and operated filled with handy process flow diagrams this volume is the only reference that a chemical engineer or process manager in



a petroleum refinery needs for answers to everyday process and operations questions covers the technologies and operations of petroleum refineries provides material on operating a jointly owned and operated refinery gives readers a comprehensive introduction to petroleum refining as well as a full reference to engineers in the field

## **Handbook of Petroleum Refining**

2016-10-26

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

## **Modern Fluid Catalytic Cracking**

1997-05-15

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 Catalysts**

2011-07-26

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

## **Fluid Catalytic Cracking III**

1994

this handbook describes and discusses the features that make up the petroleum refining industry it begins with a description of the crude oils and their nature and continues with the saleable products from the refining processes with a review of the environmental impact there is a complete overview of the processes that make up the refinery with a brief history of those processes it also describes design technique operation and in the case of catalytic units the chemistry of the reaction routes these discussions are supported by calculation procedures and examples sufficient to enable input to modern computer simulation packages

# **Refining Processes Handbook**

2003-10-16

covers elements of pollution prevention programs identifying pollution prevention options for chemical processes selecting the best pollution prevention options and pollution prevention case study modules with solved problems suitable for use in short courses training sessions and as a supplementary text in university based engineering design courses 50 charts and tables

# **Springer Handbook of Petroleum Technology**

2017-12-20

thoroughly revised and expanded by 50 this edition of this handbook offers petroleum and chemical engineers a comprehensive guide to all aspects of petroleum refining processes the book features new chapters from chevron mobil shell exxon uop and texaco which define technology pollution control and economic aspects of 60 petroleum refining processes each chapter covers the process chemistry and thermodynamics product and by product specification of all plants also presented are estimates of capital and operating costs and information on the design of additions to existing refineries and construction of new ones

# Fluid Catalytic Cracking III

1994

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

# **New and Future Developments in Catalysis**

2013-07-18

this new handbook provides a series of reference guides to cleaner production methods technologies and practices for key industry sectors each volume covers for each industry sector the manufacturing technologies waste management pollution methods for estimating and reporting emissions treatment and control technologies worker and community health risk exposures cost data for pollution management cleaner production and prevention alternatives best practices in the petroleum industry provides an overview of refineries and gas plant operations and identifies the key environmental aspects supported by case studies of major incidents that resulted in catastrophic releases of oil and refined products and a critical assessment of the methodology and calculation procedures that the industry relies on in preparing emissions inventories the authors offer alternative approaches to providing more accurate emissions estimates and guidelines on cleaner production and pollution prevention practices for improving overall environmental performance overview of the key environmental aspects of gas plant operations and refineries case studies of major incidents that resulted in catastrophic releases of oil and refined products including the santa barbara oil spill of 1969 and the exxon valdez incident provides guidelines on cleaner production and pollution prevention practices for improving overall environmental performance

# ***Handbook of Industrial Hydrocarbon Processes***

2010-12-24

nickel and vanadium poison fcc catalysts with destruction of zeolites this is reflected by a lower gas oil conversion and lower gasoline selectivity ni and v also affect hydrogen transfer resulting in more coke formation and reducing light gases

## **Hydrocracking Science and Technology**

1996-08-06

handbook of refinery desulfurization describes the operation of the various desulfurization process units in a petroleum refinery it also explains the processes that produce raw materials for the petrochemical industry it illustrates all the possible processes to lower the sulfur contents in petroleum and its fractions to decrease emissions of sulfur oxides this book introduces you to desulfurization concepts including biodesulfurization as well as technology giving guidance on how to accomplish desulfurization in various refining processes it contains background chapters on the composition and evaluation of feedstocks and includes diagrams and tables of feedstocks and their respective produce it also outlines how to decide which method should be employed to remove sulfur from different feedstocks a practical and thorough discussion of the field handbook of refinery

desulfurization gives you a strong grasp of the various processes involved with industrial desulfurization while giving you pointers on which procedures to use under certain conditions

## ***Mass transport characteristics of zeolite cracking catalysts***

1978

## ***Handbook of Catalyst Manufacture***

1978

## **Handbook of Petroleum Processing**

2006-01-11



## ***Pollution Prevention for Chemical Processes***

1994

## **Handbook of Petroleum Refining Processes**

2004

## **Handbook of Petrochemical Processes**

2019-06-13

## **Handbook of Pollution Prevention and Cleaner Production Vol. 1: Best Practices in the Petroleum Industry**

2009-09-22

# **Catalytic Cracking of Hydrocarbons with Novel Metal Traps [microform]**

1993

# **Synthesis and Cracking of Hydrocarbons**

1980

# **Handbook of Refinery Desulfurization**

2015-09-18

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