<< Chemical Process Tec>>

图书基本信息

书名: <<Chemical Process Technology化学处理技术>>

13位ISBN编号: 9780471630098

10位ISBN编号: 0471630098

出版时间:2001-5

出版时间:吉林长白山

作者: Jacob A. Moulijn 著

页数:453

版权说明:本站所提供下载的PDF图书仅提供预览和简介,请支持正版图书。

更多资源请访问:http://www.tushu007.com

<<Chemical Process Tec>>

内容概要

Chemical Process Technology is a comprehensive introduction, examining both the fundamental concepts and applied nature of this subject. Modern process development relies on a knowledge of many different disciplines and an application and integration of this knowledge. Chemical Process Technology provides an essential bridge between the chemical sciences and the chemical industry. It enables the reader to integrate fundamental knowledge of the basic disciplines, to understand the most important chemical processes, and to apply this knowledge and understanding to industrial processes. This innovative textbook examines both large-scale and small-scale chemical and biotechnology industries and aims to bring to life the concepts that form the basis of the process industry. Starting with a general look at the industry, subsequent chapters examine different processes in greater detail. Emphasis tends to be placed on chemical reactions and the reactor, both at the heart of each process, but coverage also includes feed pre-treatment and product separation. Features: A comprehensive and balanced introduction, providing an essential link between chemistry and the chemical industry problems with their solutions to encourage a fuller understanding of the project. Many examples and case studies taken from a variety of modern industries Richly illustrated chapters, with many clearly developed flow diagrams and numerous figures Chemical Process Technology will be invaluable to all students of chemical engineering, biotechnology and industrial chemistry who need a modern introduction to chemical reactions and processes. The book will also be of interest to researchers and professionals needing a concise, up-to-date text on this diverse subject.

<< Chemical Process Tec>>

书籍目录

Preface1 Introduction2 The Chemical Industry 2.1 Introduction 2.2 Structure of the chemical industry 2.3.1 Fossil fuel consumption and reserves 2.3 Raw materials and energy 2.3.2 Energy and the 2,3.3 Composition of fossil fuels 2.4 Base chemicals 3 Processes in the Oil Refinery chemical industry Oil refinery - an overview 3.2 Physical processes 3.2.1 Desalting/dehydration 3.2.2 Crude 3.2.3 Propane deasphalting 3.3 Thermal processes 3.3.1 Visbreaking 3.3.2 Delayed coking 3.4 Catalytic processes 3.4.1 Catalytic cracking 3.4.2 Hydrotreating 3.4.3 3.4.5 Alkylation 3.5 Conversion of heavy residues Hydrocracking 3.4.4 Catalytic reforming 3.5.1 Flexicoking 3.5.2 Catalytic hydrogenation of residues 3.6 Treatment of refinery gas streams Removal of H2S from refinery exhaust gases 3.6.2 Recovery of hydrogen from refinery gas streams 3.6.1 3.7 Current and future trends in oil refining 3.7.1 Reformulated gasoline 3.7.2 Diesel 3.7.3 The use of zeolites for shape selectivity in the oil refinery 3.7.4 Alternative technology and fuels4 Steam Cracking: Production of Lower Alkenes 4.1 Introduction 4.2 Cracking reactions 4.2.1 Thermodynamics 4.2.2 Mechanism 4.2.3 Kinetics 4.3 Industrial process 4.3.1 Influence of feedstock on steam cracker operation and products 4.3.2 Cracking furnace 4.3.3 Heat exchanger 4.3.4 Coke 4.4 Product processing 4.5 Current and future developments 4.5.1 Selective dehydrogenation 4.5.2 Other sources of lower alkenes5 Synthesis Gas 5.1 Introduction 5.2 Synthesis Reactions and thermodynamics 5.2.2 Steam reforming process gas from natural gas 5.2.1 5.2.3 Advances in steam reforming 5.2.4 Autothermic reforming 5.2.5 Novel developments 5.3 Coal gasification 5.3.1 Gasification reactions 5.3.2 Thermodynamics 5.3.3 Current coal gasification 5.3.5 Applications 5.4 Purification and adjustment of processes 5.3.4 Recent developments 5.4.2 Gas purification 6 Bulk Chemicals and 5.4.1 Conversion of carbon monoxide synthesis das Synthetic Fuels Derived from Synthesis Gas 6.1 Ammonia Background information 6.1.1 **Thermodynamics** 6.1.3 Commercial ammonia synthesis reactors 6.1.4 Ammonia synthesis loop 6.1.5 Integrated ammonia plant 6.1.6 Applications of ammonia 6.2 Methanol Background information Thermodynamics 6.2.3 Synthesis gas for methanol production 6.2.2 6.2.4 Methanol synthesis 6.2.5 Applications of methanol 6.3 Fischer-Tropsch process 6.3.2 Reactors used in Fischer-Tropsch synthesis......7 Inorganic Bulk Reactions and thermodynamics Chemicals8 Homogeneous Catalysis9 Heterogeneous Catalysis-Concepts and Examples10 Fine Chemistry11 Polymerization Processes12 Biotechnology13 Process DevelopmentAppendix A:Chcemical industry-FiguresAppendix B:Main Symbols used in Flow SchemesIndex

<< Chemical Process Tec>>

版权说明

本站所提供下载的PDF图书仅提供预览和简介,请支持正版图书。

更多资源请访问:http://www.tushu007.com