Catalise Heterogenea Figueiredo

YADIRA LANEY

Surface Chemistry of Froth Flotation Springer Science & Business Media
The book summarizes the current state of the know-how in the field of perovskite materials: synthesis, characterization, properties, and applications. Most chapters include a review on the actual knowledge and cutting-edge research results. Thus, this book is an essential source of reference for scientists with research fields in energy, physics, chemistry and materials. It is also a suitable reading material for graduate students.
Characterization of Heterogeneous Catalysts CATALISE HETEROGENEACatalysis from Theory to Application: An Integrated Course
This 5th edition of the Zeolite Powder Pattern Collection contains calculated patterns of 218 zeolite materials representing 174 framework topologies. The almost exponential growth of new zeolite topologies reflects the continued success of zeolite synthesis researchers in producing novel materials. Collection of Simulated XRD Powder Patterns for Zeolites includes materials of interest to zeolite scientists following the policies established at recent IZA conferences. The materials included have corner-sharing tetrahedral frameworks with no restrictions on chemical composition. Covers an increase of 41 new topologies since the 4th edition in 2001 Data collected from diverse literature sources Represents an extensive compilation of data
Progress in Catalyst Deactivation Digitaliza Conteudo
This book presents highlighted results coming up from NanoCarbon2011, a Brazilian Carbon event. The topics cover the latest advances in Brazilian basic and applied research related to different carbon materials. The chapters address reviews on their fundamental and outstanding properties and describe various classes of new promising high-tech applications for carbon materials.
Chemical Reaction Engineering Springer Science & Business Media
The first English edition of this book was published in 2014. This book was originally intended for undergraduate and graduate students and had one major objective: teach the basic concepts of kinetics and reactor design. The main reason behind the book is the fact that students frequently have great difficulty to explain the basic phenomena that occur in practice. Therefore, basic concepts with examples and many exercises are presented in each topic, instead of specific projects of the industry. The main objective was to provoke students to observe kinetic phenomena and to think about them. Indeed, reactors cannot be designed and operated without knowledge of kinetics. Additionally, the empirical nature of kinetic studies is recognized in the present edition of the book. For this reason, analyses related to how experimental errors affect kinetic studies are performed and illustrated with actual data. Particularly, analytical and numerical solutions are derived to represent the uncertainties of reactant conversions in distinct scenarios and are used to analyze the quality of the obtained parameter estimates. Consequently, new topics that focus on the development of analytical and numerical procedures for more accurate description of experimental errors in reaction systems and of estimates of kinetic parameters have been included in this version of the book. Finally, kinetics requires knowledge that must be complemented and tested in the laboratory. Therefore, practical examples of reactions performed in bench and semi-pilot scales are discussed in the final chapter. This edition of the book has been organized in two parts. In the first part, a thorough discussion regarding reaction kinetics is presented. In the second part, basic

equations are derived and used to represent the performances of batch and continuous ideal reactors, isothermal and non-isothermal reaction systems and homogeneous and heterogeneous reactor vessels, as illustrated with several examples and exercises. This textbook will be of great value to undergraduate and graduate students in chemical engineering as well as to graduate students in and researchers of kinetics and catalysis.
Perovskite Materials CRC Press
It has become a tradition that every four years, the Université Catholique de Louvain and the Katholieke Universiteit Leuven jointly organize a symposium devoted to the scientific bases for the preparation of heterogeneous catalysts. These meetings bring together researchers from academia and industry and offer a forum for discussions on the chemistry involved in the preparation of industrial heterogeneous catalysts. This volume containing the Proceedings of the 8th International Symposium on Scientific Bases for the Preparation of Heterogeneous Catalysts consists of papers summarizing most of the 139 oral communications and posters selected by the international scientific committee, composed of 27 experts in the field of catalyst preparation, holding an industrial or academia appointment. The contributions focus on the aspects of catalyst preparation. The main topics are: new approaches in catalyst preparation; advanced preparations of nanoporous and mesoporous catalysts; catalysts preparation for special performances and purposes; catalysts for environmental purposes; and molecular catalysis. Emphasis is put on the role that catalysis can play as an essential element of sustainable development.
Metallopolymer Nanocomposites Springer Nature
This book entitled "Biodiesel: Quality, Emissions and By-products" covers topics related to biodiesel quality, performance of combustion engines that use biodiesel and the emissions they generate. New routes to determinate biodiesel properties are proposed and the process how the raw material source, impurities and production practices can affect the quality of the biodiesel is analyzed. In relation to the utilization of biofuel, the performance of combustion engines fuelled by biodiesel and biodiesels blends are evaluated. The applications of glycerol, a byproduct of the biodiesel production process as a feedstock for biotechnological processes, and a key compound of the biorefinery of the future is also emphasized.
Carbon Materials for Catalysis BoD – Books on Demand
The process of froth flotation is an outstanding example of applied surface chemistry. It is extensively used in the mining, mineral, metallurgical, and chemical industries for separation and selective concentration of individual minerals and other solids. Substances so concentrated serve as raw materials for producing appropriate metals and chemicals. The importance of flotation in technology is chiefly due to the ease with which it can be made selective and versatile and to the economy of the process. The objective of this book is to review the fundamentals of surface chemistry together with the relevant aspects of organic and inorganic chemistry that-in the opinion of the author-are important ~ control of the froth flotation process. The review updates the information that had been available in books by Sutherland and Wark (1955), Gaudin (1957), Klassen and Mokrousov (1963), and Glembotsky et al. (1963). It emphasizes mainly the surface chemical aspects of the process, leaving other relevant topics such as hydrodynamics, mechanical and electrical technology, cir cuit design and engineering, operations research, instrumentation tech nology, modeling, etc., to appropriate specialized treatments.
Fundamentals of industrial catalytic processes Elsevier
The contributions in this book present an overview of cutting edge research on natural gas which is a vital component of world's supply of energy. Natural gas is a combustible mixture of hydrocarbon gases, primarily methane but also heavier gaseous hydrocarbons such as ethane, propane and butane. Unlike other fossil fuels, natural gas is clean burning and emits lower levels of potentially harmful by-products into the air. Therefore, it is considered as one of the cleanest, safest, and most useful of all energy sources applied in variety of residential, commercial and industrial fields. The book is organized in 25 chapters that cover various aspects of natural gas research: technology, applications, forecasting, numerical simulations, transport and risk assessment.
Catalysis from Theory to Application: An Integrated Course FEUP edições
Most catalysts used in the chemical and petrochemical indus tries are strongly affected by one or another form of deactivation, leading to poor performances and reduced life. The increasing num ber of scientific communications devoted to the subject in recent years, and culminating with an International Symposium held in Antwerp in October 1980, is a measure of the interest it arouses in both the industrial and academic communities. A stage has been reached whereby it was thought that a NATO Advanced Study Institute on "Catalyst Deactivation" might be fruit ful in establishing the state of the art and in stimulating a more systematic research on the phenomenon. Such a meeting was held ~n Lagos, Portugal, from 18 to 29 May 1981. The purpose of the Institute was to present and discuss in a didatic and systematic way the various processes that lead to cata lyst deactivation, namely coking, poisoning and solid state trans formations, and at the same time to promote the exchange of ideas and experiences among the participants, drawn from industry and uni versity. The lectures presented at the Institute are collected in this volume with the exception of Dr. L.L.Hegedus "Catalyst Poisoning", which has been previously published (Catalysis Reviews, Science md Engineering, 23, 377-476, 1981).
Advanced Powder Technology VIII Springer Science & Business Media
Este livro é um excelente testemunho do elevado e altamente meritório contributo que a feup - Faculdade de Engenharia da Universidade do Porto, desde os primórdios da sua génese, prestou ao ensino da Engenharia Química em Portugal e à investigação das respetivas matérias científicas.
Biolubricants Editora E-papers
Este livro foi pensado como um recurso complementar a literatura apresentada ao longo de seus capítulos e gostaria que os leitores se debruçassem sobre as obras citadas ao final do livro e percebessem a genialidade de certos autores, especialmente os das décadas de 40, 50 e 60. Cinética heterogênea é um tema considerado espinhoso em muitos cursos de engenharia química. Os livros texto generalistas (que abordam cálculo de reatores de forma integral) abordam o tema de forma sintética e se atém ao mais essencial. E nos livros de catálise heterogênea, há exceções, abordam o tema de cinética de forma superficial. Pelo fato de que os especialistas em catálise, por regras focarem-se em caracterização e utilizam os testes catalíticos apenas para a avaliação do desempenho do catalisador. Este livro aborda de forma didática o tema cinética heterogênea e os fenômenos de transferência relacionados.
Adsorption, Surface Area, and Porosity Springer Science & Business Media
A Catálise Heterogênea desempenha um papel relevante na vida moderna, em especial, na fabricação de combustíveis e produtos químicos utilizados em larga escala e em processos de abatimento da poluição. Há grande interesse no desenvolvimento da Catálise Heterogênea, pois ela permite o estabelecimento de processos químicos mais adequados do ponto de vista do desenvolvimento sustentável. Catálise Heterogênea, de autoria do Prof. Martin Schmal, apresenta os princípios da Catálise Heterogênea, sendo um texto valioso para estudantes de graduação e pós-graduação em Química, Física, Engenharia Química e Engenharia de Materiais e para profissionais atuantes na área. O autor é um dos pioneiros da Catálise no Brasil e responsável pela formação de muitos profissionais da academia e do setor produtivo. O livro reflete a visão empolgante e atual do autor em relação ao assunto. Os métodos de preparação e de caracterização são expostos tendo como base uma forte fundamentação teórica. O autor privilegia uma abordagem microscópica do assunto, dando especial ênfase aos métodos de caracterização dos catalisadores sob condições reais de uso, os chamados métodos in situ. São apresentados diversos resultados derivados das pesquisas realizadas no laboratório do autor e de outros grupos nacionais, demonstrando o desenvolvimento alcançado no Brasil na área. São notáveis também as colaborações com pesquisadores internacionais de alto nível. Há ampla integração entre interesse de aplicação prática e rigor científico, uma receita que autor tem seguido e indicado aos seus alunos em sua carreira de sucesso.
Boletim de bibliografia portuguesa Academic Press
CATALISE HETEROGENEACatalysis from Theory to Application: An Integrated CourseImprensa da Universidade de Coimbra / Coimbra University Press
Chemistry on Modified Oxide and Phosphate Surfaces: Fundamentals and Applications Springer
Conventional synthetic materials, like metals, ceramics or glass, are usually isotropic substances, and their suitability for structural applications is achieved by morphological design and combination in the macroscopic scale. However, in modem engineering this is often not acceptable. As an alternative, the use of non-homogeneous, anisotropic materials, with significant stiffness and strength only in the directions these mechanical properties are really needed, can lead to enormous material (and weight) savings. This is the case of multiphase systems called composite materials. In these composites, different material parts are added and arranged geometrically, under clearly designed and controlled conditions. Usually, a structure of fibers provides strength and stiffness and a matrix helds them together, whilst providing the geometric form. Carbon fibers are among the high-performance fibers employed in these advanced structural composites, which are profoundly changing many of today's high technology industries. New research and development challenges in this area include upgrading the manufacturing process of fibers and composites, in order to improve characteristics and reduce costs, and modifying the interfacial properties between fibers and matrix, to guarantee better mechanical properties. The interdisciplinary nature of this "new frontier" is obvious, involving chemistry, materials science, chemical and mechanical engineering. Other topics, which more often are treated separately, are also important for the understanding of the processes of fiber production. Carbon filaments is one such topic, as the study of their mechanisms of nucleation and growth is clearly quite relevant to the production of vapour-grown carbon fibers.
Catálise Heterogênea Elsevier
Studies in Surface Science and Catalysis is one of the oldest and most cited series in the field. It offers a privileged view of the topic covering the theory, applications and engineering of all topics of catalysis, including Heterogeneous-Homogeneous, Biocatalysis and Catalysis for Polymerization. This volume provides an invaluable source of information for academics and industrialists as well as graduate students.
Porous Materials John Wiley & Sons
A universidade tem duas missões primordiais, a de transmitir conhecimento através do ensino e a de o criar através da investigação. Raramente da combinação destas duas missões se adquirem novas perspetivas no conhecimento científico que têm reflexos na formação básica de alunos universitários. O ensino da cinética química desde cedo se processou através da Teoria do Estado de Transição (TST), a base de entendimento da velocidade de processos cinéticos elementares. Desde meados do século XIX que os químicos reconhecem que a velocidade das transformações químicas depende da estrutura molecular de reagentes e produtos. Mas faltava esta importante ligação entre TST e estrutura molecular para completar o entendimento da reatividade química. A barreira de energia da maioria das reações químicas não podia ser facilmente estimada a partir das estruturas moleculares. E variações neste parâmetro fenomenológico dão conta de mudanças de velocidade de reação na ordem das 30 ordens de grandeza. A partir de uma preocupação pedagógica, que remonta aos inícios da década de 70, os progressos científicos conduziram a um programa de investigação a partir de 1985 que só se completou em 2003. Assim se criou uma teoria ISM que associada à TST permite dar conta da formação e quebra de ligações químicas, o mais essencial da transformação química. Havia pois que rever todo o ensino da Cinética Química à luz deste novo entendimento. Eis o objetivo desta obra com interesse para estudante de licenciatura e de pós-graduação.
Biodiesel Elsevier
Chemical Reaction Engineering: Essentials, Exercises and Examples presents the essentials of kinetics, reactor design and chemical reaction engineering for undergraduate students. Concise and didactic in its approach, it features over 70 resolved examples and many exercises.The work is organized in two parts: in the first part kinetics is presented
Scientific Bases for the Preparation of Heterogeneous Catalysts Synergia
Chemistry on Modified Oxide and Phosphate Surfaces: Fundamentals and Applications is in the authoritative Interface Science and Technology Series and presents the key features and applications of modified oxide and phosphate surfaces. Examines both basic and applied aspects Incorporates examples from recent publications
CATALISE HETEROGENEA Alex Vazzoler
This book aims to introduce the basic concepts involved in industrial catalytic processes. It is profusely illustrated with experimental results with the main objective of guiding how to select a suitable catalyst for specific processes. The book is divided in two parts. In the first part the basic concepts are addressed, regarding the existing theories, activity patterns and adsorption-desorption phenomena. In the second part the key experimental methods for the physicochemical characterization of catalysts are presented, as well as the currently used catalyst pre and post treatments. The last chapter describes some important in situ characterization techniques (e.g. XPS and TEM) and surface model patterns related to surface modifications occurring during the reaction. Thoroughly illustrated with microscopy images, spectroscopy data and schematics of reaction mechanisms, the book

provides a powerful learning tool for students in undergraduate and graduate level courses on the field of catalysis. Exercises and resolved problems are provided, as well as experimental procedures to support laboratory classes. Furthermore, the content is presented in a carefully chosen sequence, reflecting the 30 year teaching experience of the author. The author, Professor Martin Schmal, sees the present book as a way of conveying basic knowledge needed for the development of more efficient catalysts (i.e. nanostructured materials) and novel industrial chemical processes in the fields of environmental chemistry, fine chemistry, hydrotreating of heavy oils, hydrogen production and biomass processing.
Cinética química: estrutura molecular e reactividade química Elsevier

This book Catalysis from Theory to Application. An Integrated Course encompasses the lectures of an integrated course on Catalysis (CIC2006) organized in the University of Coimbra according to the guidelines set up by the ERA-Net ACENET (Applied Catalysis European Network). The book is subdivided in five sections: heterogeneous, homogeneous, photo- and electro-catalysis and a fifth section covering experimental design and planning.The course and the lectures presented in this book intend to offer a broad and comprehensive survey on the different subjects of catalysis. Indeed, most graduate students in Chemistry or Chemical Engineering have only fragmented knowledge. Accordingly, the book is intended for undergraduate and post-graduate students or Industrial Researchers of Chemistry and Chemical Engineering interested in acquiring integrated knowledge in this field.