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New Directions in Sorption Technology

Butterworths



New Directions In Sorption Technology

C.A. Costa, Joaquim S. Cabral



New Directions In Sorption Technology:

New Directions in Sorption Technology George E. Keller, Ralph T. Yang, 2013-10-22 New Directions in Sorption Technology focuses on the developments in sorption technology including sorbents chromatography pressure swing adsorption and bioseparations involving sorption The selection first offers information on coherence concept an overview of coherence in the chromatographic movement of surfactant mixtures and technological maturity of sorption processes and sorbents The book then ponders on kinetic separation of air by pressure swing adsorption conception of a new adsorption process for purifying landfill gas at the Kapiteltal Landfill Site in West Germany and sizing of vacuum pumps for desorption in PSA systems The manuscript takes a look at the evaluation of macroreticular resins as gas vapor sorbents to rival active carbons and use of surfactant enhanced carbon regeneration to remove volatile organics from spent activated carbon Discussions focus on characterization of pores development of porous polymers cleaning and resin preparation The novel applications of continuous annular chromatography and chromatographic study of aqueous phase adsorption on activated carbon fiber with bacterial growth are also mentioned The selection is a valuable source material for chemists and readers interested in sorption technology

Chromatographic and Membrane Processes in Biotechnology C.A. Costa, Joaquim S. Cabral, 2012-12-06 Separation processes in biotechnology are of increasing industrial importance since they entail the major costs of bioprocessing especially when high purity is required Chromatography and membranes are two of the most important technologies used for direct treatment of fermentation broths as well as for high resolution steps in product purification The theoretical foundations of chromatographic and membrane processes are well understood for the case of small molecules Nevertheless there is a need to adapt and further develop that knowledge to the processing of large biological molecules This is being achieved with the contribution of other areas like molecular biology and materials science The objective of this NATO Advanced Study Institute is to present an updated treatment of the fundamentals of chromatographic and membrane processes with special relevance in bioprocessing This volume collects the lectures presented at this Institute The lectures are arranged in five chapters Chapter I deals with chromatographic processes covering topics like equilibrium kinetics and contacting devices Membrane processes and some applications in biotechnology are treated in chapter 2 Chapter 3 is devoted to affinity chromatographic and membrane processes Chapter 4 considers the current developments on chromatographic supports and membranes both from the constitutive materials and form points of view Scale up optimization and reaction separation integration are the topics covered in chapter 5 We are very grateful to all lecturers and participants that made possible this Institute Financial support from NATO Scientific Affairs Division INIC JNICT FLAD University of Ac ores and DRT Ac ores is gratefully acknowledged

Adsorption Technology and Design W John Thomas, FEng, Barry Crittenden, 1998-04-27 The aim of this book is to provide all those involved in designing and running adsorption processes with a guide to adsorption technology and design

Preparative Chromatography for Separation of

Proteins Arne Staby, Anurag S. Rathore, Satinder Ahuja, 2017-02-02 Preparative Chromatography for Separation of Proteins addresses a wide range of modeling techniques strategies and case studies of industrial separation of proteins and peptides Covers broad aspects of preparative chromatography with a unique combination of academic and industrial perspectives Presents Combines modeling with compliance using of Quality by Design QbD approaches including modeling Features a variety of chromatographic case studies not readily accessible to the general public Represents an essential reference resource for academic industrial and pharmaceutical researchers

Applications in Industry, 1998-12-17 Volume I contains a brief review of adsorption history and its development for practical purposes up until now It also presents some important information on adsorbents and catalysts as well as on the methods of their characterization The part of this volume dealing with practical industrial applications includes chapters presenting advanced technical tools for high capacity adsorption separation of liquid and gas mixtures development of new adsorbents for removal of hazardous contaminants from combustion flue gases and wastewaters degasification of coal seams and fabrication of inorganic membranes and their applications A comprehensive review is also included on contemporary utility of self assembled monolayers adsorption proteins and their role in modern industry adsorption methods in technology of optical fibre glasses sol gel technology solid desiccant dehumidification systems etc The articles give both the scientific backgrounds of the phenomena discussed and emphasize their practical aspects The chapters give not only brief current knowledge about the studied problems but are also a source of topical literature on the subject A comprehensive bibliography on adsorption principles design data and adsorbent materials for industrial applications for the period 1967 1997 concludes the book

Preparative and Production Scale Chromatography G. Ganetsos, P.E. Barker, 2019-11-11 Describes the latest developments in the scaling up and application of chromatographic operations and demonstrates that production scale chromatography is a powerful and invaluable separation process The book covers every important process design and reveals actual immediately applicable techniques and is designed to appeal to design chemical biochemical and research and development engineers process development managers bioprocess technologists analytical and clinical chemists and biochemists pharmacists and upper level undergraduate graduate and continuing education students in these disciplines

Albright's Chemical Engineering Handbook Lyle Albright, 2008-11-20 Taking greater advantage of powerful computing capabilities over the last several years the development of fundamental information and new models has led to major advances in nearly every aspect of chemical engineering Albright's Chemical Engineering Handbook represents a reliable source of updated methods applications and fundamental concepts that will continue to play a significant role in driving new research and improving plant design and operations Well rounded concise and practical by design this handbook collects valuable insight from an exceptional diversity of leaders in their respective specialties Each chapter provides a clear review of basic information case examples and references to additional more in depth information They explain essential principles calculations and issues relating to topics

including reaction engineering process control and design waste disposal and electrochemical and biochemical engineering The final chapters cover aspects of patents and intellectual property practical communication and ethical considerations that are most relevant to engineers From fundamentals to plant operations Albright s Chemical Engineering Handbook offers a thorough yet succinct guide to day to day methods and calculations used in chemical engineering applications This handbook will serve the needs of practicing professionals as well as students preparing to enter the field **Precision Process**

Technology M.P.C. Weijnen,A.A.H. Drinkenburg,2012-12-06 New process technology strategies are required to cope with the future Fossil feedstocks are losing ground in favour of renewable feedstocks and secondary resources Conventional processing routes using thermal sledgehammer techniques are replaced by highly selective bio catalytic conversions The future process engineer is neither allowed to think in terms of unit operations nor to take for granted the conventional practice of continuous steady state processing Hybrid systems and transient operations are more and more frequently encountered The continuing impressive progress being made in process modelling and control will revolutionize the process industries In the new generation of chemical production processes the keyword is precision Precision in terms of selectivity and of efficiency is required to maximize the utilisation of materials and energy Moreover enhanced precision is needed to exploit the quality of materials and energy to the full extent Only by reducing the squandering of materials energy and quality will a harmonious relationship be established between the process industries the economy and the environment Process integration as well as an integrated effort by the disciplines involved in process technology will be of crucial importance in attaining the goals of precision process technology These emerging strategies involve an active exchange of tools and ideas between a variety of disciplines not only in plant design and operation but even more in the early stages of process development and design By looking from various angles at what the future has in store for the process industries this volume systematically lifts the corners of the veil and may inspire to establish a new tradition of precision in process technology **Encyclopedia of Separation Technology** Douglas M. Ruthven,1997-05-08 This two volume alphabetically organized encyclopedia is a compendium of the gases liquids and solids phase separation processes used industrially and in the laboratory Based on the Kirk Othmer Encyclopedia of Chemical Technology the authoritative reviews written by experts in the field include both the technology and the underlying science of separations Practical advice concerning choice of separation process is also given Energy considerations and the role of economics in undertaking separations are discussed Close to 60% of the material is reprinted 30 percent is substantially revised or completely new *Encyclopedia of Chemical Technology: A to alkalo*ids Raymond Eller Kirk,Donald Frederick Othmer,Jacqueline I. Kroschwitz,Mary Howe-Grant,1991

Principles of Chemical Separations with Environmental Applications Richard D. Noble,Patricia A. Terry,2004-03-25 Chemical separations are of central importance in many areas of environmental science whether it is the clean up of polluted water or soil the treatment of discharge streams from chemical processes or modification of a specific

process to decrease its environmental impact This book is an introduction to chemical separations focusing on their use in environmental applications The authors first discuss the general aspects of separation technology as a unit operation They also describe how property differences are used to generate separations the use of separating agents and the selection criteria for particular separation techniques The general approach for each technology is to present the chemical and or physical basis for the process and explain how to evaluate it for design and analysis The book contains many worked examples and homework problems It is an ideal textbook for undergraduate and graduate students taking courses on environmental separations or environmental engineering

Low-level Measurements Of Radioactivity In The Environment : Techniques And Applications - Proceedings Of The Third International Summer School M Garcia-leon,R Garcia-tenorio,1994-07-27 This book contains the lectures seminars and abstracts of short communications delivered at the above summer school The talks are an updated account of the methods used in the detection of radioactivity in nature and in the study of its spread in the environment Index of Conference Proceedings British Library. Document Supply Centre,1989-07

Chemical Engineering Progress ,1991 *Catalysis and Adsorption by Zeolites* G. Öhlmann,H. Pfeifer,R. Fricke,1991-06-19 The proceedings of ZEOCAT 90 reflect the wide ranging aspects of the rapidly expanding field of zeolite science and technology The invited plenary lectures given by eminent zeolite scientists summarize current knowledge and address topical areas of zeolite research including a contribution on the use of zeolites as membranes The field of investigations described in the submitted articles in this volume covers a wide area of problems ranging from the influence of the synthesis process on the properties to questions of acidity adsorption diffusion and catalysis Of special interest are the newly developed applications of zeolites in the synthesis of fine chemicals the use of zeolites for sensors and solid electrolytes and the sophisticated zeolite based separation processes

Biotechnology Progress ,1990 **Current Opinion in Biotechnology** ,1993 Enzyme Engineering ,1990 Consists of papers presented at the 1st 3d Engineering Foundation Conference on Enzyme Engineering Bibliography of Agriculture with Subject Index ,1993-07 **Abstracts of Papers** American Chemical Society,1988

Adopting the Beat of Appearance: An Mental Symphony within **New Directions In Sorption Technology**

In a world eaten by monitors and the ceaseless chatter of instant connection, the melodic elegance and psychological symphony developed by the prepared word often diminish into the back ground, eclipsed by the relentless noise and disruptions that permeate our lives. But, situated within the pages of **New Directions In Sorption Technology** an enchanting fictional value overflowing with organic thoughts, lies an immersive symphony waiting to be embraced. Crafted by a masterful musician of language, this captivating masterpiece conducts readers on an emotional journey, well unraveling the concealed songs and profound affect resonating within each cautiously crafted phrase. Within the depths of the emotional examination, we shall examine the book is main harmonies, analyze its enthralling writing model, and submit ourselves to the profound resonance that echoes in the depths of readers souls.

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