

Basic Principles of Membrane Technology

second edition

Marcel Mulder



Kluwer Academic Publishers

Basic Principles Of Membrane Technology Second Edition

SJ Ball



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Membrane Technology for Sustainability Rizwan Nasir, Danial Qadir, Hafiz Abdul Mannan, 2025-09-30 This book is a comprehensive assessment of the pivotal role that membrane technology plays in addressing ongoing environmental and sustainability challenges It covers various aspects of membrane technology with a focus on gas separation and water treatment membranes and explains their principles design and applications Readers interested in sustainable engineering will learn about membrane materials fabrication techniques performance optimization and system integration along with a holistic perspective on the capabilities and limitations of membranes This book presents real world case studies and success stories highlighting the practical implementation of membrane technologies in various industries Features Explains the use of membrane technology and its transformative potential for a greener and more resilient environment Discusses membrane technology and its applications in gas and water treatment Includes case studies that illustrate the performance of membrane processes in different applications with regard to sustainability Provides insights into the challenges and opportunities of using membrane technology to improve gas and water treatment Includes information on new membrane materials processes applications and future trends This book is a great reference for researchers and graduate students in environmental engineering water engineering and chemical engineering It is also an excellent resource for environmental engineers and professionals in the water and gas industry interested in sustainability

Basic Principles of Membrane Technology J. Mulder, 2013-04-18 Membranes play a central role in our daily life or as indicated by one of my foreign colleagues Richard Bowen If you are tired of membranes you are tired of life Biological membranes are hardly used in industrial applications but separations with synthetic membranes have become increasingly important Today membrane processes are used in a wide range of applications and their numbers will certainly increase

Therefore there is a need for well educated and qualified engineers chemists scientists and technicians who have been taught the basic principles of membrane technology However despite the growing importance of membrane processes there are only a few universities that include membrane technology in their regular curricula One of the reasons for this may be the lack of a comprehensive textbook For me this was one of the driving forces for writing a textbook on the basic principles of membrane technology which provides a broad view on the various aspects of membrane technology I realise that membrane technology covers a broad field but nevertheless I have tried to describe the basic principles of the various disciplines Although the book was written with the student in mind it can also serve as a first introduction for engineers chemists and technicians in all kind of industries who wish to learn the basics of membrane technology

Liquid Separations with Membranes Karl W. Böddeker,2007-12-14 The plan of this book is to present the relevant thermodynamic features of fluid mixtures in contact with semipermeable barriers then to apply this information in deriving the design requirements of individual membrane separation processes The membranes by this approach are introduced by way of the mass transport and selectivity demands which they are to meet This book gives a survey in systematic order of the terms and concepts by which barrier separations operate

Nanocomposite Membrane Technology P.K. Tewari,2015-12-02 Nanocomposite Membrane Technology Fundamentals and Applications is the first book to deliver an extensive exploration of nanocomposite membrane technology This groundbreaking text offers an eloquent introduction to the field as well as a comprehensive overview of fundamental aspects and application areas Approaching the subject from the material

Membranes and Membrane Technologies III Juan Manuel Peralta-Hernández,2024-03-15 Aggregated Book

Hydrogen Purification and Separation Mohammad Reza Rahimpour,Mohammad Amin Makarem,Parvin Kiani,2024-11-06 The purification of hydrogen is necessary to fulfill purity standards of a wide variety of prospective uses and it is also a key concern regarding the efficient supply of hydrogen Hydrogen Purification and Separation reviews various hydrogen separation methods as well as membranes used in hydrogen separation It discusses absorption and adsorption methods as well as novel technologies such as cryogenic methods and plasma assisted technology and the related economic assessments and environmental challenges Introduces miscellaneous membrane assisted processes for hydrogen separation Provides different physiochemical absorption methods for hydrogen purification Discusses application of sorbents and swing technologies in hydrogen purification Uniquely covers hydrogen separation using novel methods Includes economic assessments and environmental challenges of hydrogen purification in detail Part of the multivolume Handbook of Hydrogen Production and Applications this standalone book guides researchers and academics in chemical environmental energy and related areas of engineering interested in development and implementation of hydrogen production technologies

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Describes established technology along with cutting edge topics of interest in the wide field of chemical technology
International Books in Print ,1997 Chemical Analysis David D. Cunningham,Julie A. Stenken,1941

Nanotechnology Applications for Clean Water Nora Savage,2009 In this truly unique reference over 80 leading experts from the global scientific community share their research and knowledge to address the global challenges of water quality and remediation in the hopes that nanotechnology can ensure that clean water is available to everyone BOOK JACKET

Electromembrane Processes Luboš Novák,2022 The book is a comprehensive view of all electromembrane processes including electromembrane processes for energy conversion a currently very significant problem The necessary theory and basic information needed for understanding the technology are explained in Part I Materials used for ion selective membranes and separation processes are described in Part II and the applications for synthesis and energy conversion in Part III

Chemical Engineering Progress ,2009 *Food Australia* ,1999 Development and Modification of Polyethersulfone Hollow Fiber Membrane for Water Purification of Ground Water in Tsunami Affected Area of Banda Aceh

Nasrul Arahman,2010 *Encyclopedia of Polymer Science and Technology, Part 1* Herman F. Mark,2003 This completely new Third Edition of the Mark Encyclopedia of Polymer Science and Technology brings the state of the art to the 21st century with coverage of nanotechnology new imaging and analytical techniques new methods of controlled polymer architecture biomimetics and more Whereas earlier editions published one volume at a time the third edition is being published in 3 Parts of 4 volumes each Each of these 4 volume Parts is an A Z selection of the latest in polymer science and technology as published in the updated online edition of the Mark Encyclopedia of Polymer Science and Technology available at www.mrw.interscience.wiley.com/epst Order the 12 volume set ISBN 0471275077 now for the best value and receive each of the 4 volume Parts as they publish The complete list of titles to appear in Part 1 of this new third print edition can be viewed at www.mrw.interscience.wiley.com/epst and clicking on What's New Check this website often as new articles are added periodically **Encyclopedia of Polymer Science and Technology: v. 12. Surface analysis to Yield and crazing in polymers**

Herman Francis Mark,2003 This completely new Third Edition of the Mark Encyclopedia of Polymer Science and Technology brings the state of the art to the 21st century with coverage of nanotechnology new imaging and analytical techniques new methods of controlled polymer architecture biomimetics and more Whereas earlier editions published one volume at a time the third edition is being published in 3 Parts of 4 volumes each Each of these 4 volume Parts is an A Z selection of the latest in polymer science and technology as published in the updated online edition of the Mark Encyclopedia of Polymer Science and Technology available at www.mrw.interscience.wiley.com/epst Order the 12 volume set ISBN 0471275077 now for the best value and receive each of the 4 volume Parts as they publish The complete list of titles to appear in Part 1 of this new third print edition can be viewed at www.mrw.interscience.wiley.com/epst and clicking on What's New Check this website often as new articles are added periodically *Cellulose Acetates: Properties and Applications*

Paul Rustemeyer,2004-08-13 To mark the 100th anniversary of cellulose diacetate in 2004 academic expertise on the physical and chemical properties of cellulose acetates CA is combined in this volume with industrial knowledge on technology and product properties Numerical Model for Hemodialysis Andrew W. Siefert,2009

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