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second edition

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Basic Principles Of Membrane Technology Second Edition

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Advanced Materials for Membrane Preparation Maria Giovanna Buonomenna, G. Golemme, 2012 The need to reduce pollution and the waste of energy and resources imposes a wider diffusion of environmentally friendly membrane systems. The expanding domain of membrane operations demands tailored materials with unprecedented performances and resistances.

<u>Progress in Filtration and Separation</u>, 2014-10-14 Progress in Filtration and Separation contains reference content on fundamentals core principles technologies processes and applications. It gives detailed coverage of the latest technologies and research models applications and standards practical implementations case studies best practice and process selection. Extensive worked examples are included that cover basic calculations through to process design including the effects of key

variables Techniques and topics covered include pervaporation electrodialysis ion exchange magnetic LIMS HIMS HGMS ultrasonic and more Solves the needs of university based researchers and R D engineers in industry for high level overviews of sub topics within the solid liquid separation field Provides insight and understanding of new technologies and methods Combines the expertise of several separations experts Hollow Fiber Membrane Contactors Anil K. Pabby, S. Ranil Wickramasinghe, Kamalesh K. Sirkar, Ana-Maria Sastre, 2020-11-23 This book on hollow fiber contractors presents an up to date compilation of the latest developments and milestones in this membrane technology Hollow Fiber Membrane Contactors Module Fabrication Design and Operation and Potential Applications provides a comprehensive discussion of hollow fiber membrane applications including a few case studies in biotechnology chemical food and nuclear engineering. The chapters in this book have been classified using the following based on different ways of contacting fluids with each other Gas liquid contacting Liquid liquid contacting Supported liquid membrane Supported gas membrane Fluid fluid contacting Other features include Discusses using non dispersive solvent extraction hollow fiber strip dispersion hollow fiber supported liquid membranes and role of process intensification in integrated use of these processes Provides technical and economic perspectives with several case studies related to specific scenarios Demonstrates module fabrication design operation and maintenance of hollow fiber contactors for different applications and performance Presents discussion on newer concepts like membrane emulsification membrane nanoprecipitation membrane crystallization and membrane condenser Special focus on emerging areas such as the use of hollow fiber contactor in back end of nuclear fuel cycle membrane distillation dehumidification of air and gas absorption and stripping Discusses theoretical analysis including computational modeling of different hollow fiber membrane processes and presents emphasis on newly developed area of hollow fiber membrane based analytical techniques Presents discussion on upcoming area dealing with hollow fiber contactors based technology in fermentation and enzymatic transformation and in chiral separations This book is equally suited for newcomers to the field as well as for engineers and scientists that have basic knowledge in this field but are interested in obtaining more information about specific future applications Handbook of Membrane Separations Anil Kumar Pabby, Syed S.H. Rizvi, Ana Maria Sastre Requena, 2015-04-09 The Handbook of Membrane Separations Chemical Pharmaceutical Food and Biotechnological Applications Second Edition provides detailed information on membrane separation technologies from an international team of experts The handbook fills an important gap in the current literature by providing a comprehensive discussion of membrane application Membranverfahren Thomas Melin, Robert Rautenbach, 2007-08-15 Membranverfahren sind unentbehrlich fr Wasser Lebensmittel und Medizintechnik Mit hohen Wachstumsraten in Umweltschutz und Chemie gehren sie zu den Schl sseltechnologien des 21 Jahrhunderts Bei Rautenbach nachlesen sagen Praktiker bereinstimmend wenn es um die konkrete Anwendung einen Verfahrensvergleich Pilotversuche oder die Interpretation geht Die 3 Auflage beh lt die erfolgreiche Kombination von Handbuch und Lehrbuch bei Basic Equations of Mass Transport Through a Membrane

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description key unit operations systems design and costs plant equipment description equipment installation safety and maintenance process control plant start up and operation and troubleshooting It is supplemented by case studies and engineering rules of thumb The author is a chemical engineer with extensive experience in the field and his technical knowledge and practical know how in the water purification industry are summarized succinctly in this new edition This book will inform you which membranes to use in water purification and why where and when to use them It will help you to troubleshoot and improve performance and provides case studies to assist understanding through real life examples Membrane Technology section updated to include forward osmosis electrodialysis and diffusion dialysis Hybrid Membrane Systems expanded to cover zero liquid discharge salt recovery and removal of trace contaminants Includes a new section on plant design energy and economics *Unit Operations in Environmental Engineering* Louis Theodore, R. Ryan Dupont, Kumar Ganesan, 2017-09-18 The book presents the principles of unit operations as well as the application of these principles to real world problems The authors have written a practical introductory text exploring the theory and applications of unit operations for environmental engineers that is a comprehensive update to Linvil Rich s 1961 classic work Unit Operations in Sanitary Engineering The book is designed to serve as a training tool for those individuals pursuing degrees that include courses on unit operations Although the literature is inundated with publications in this area emphasizing theory and theoretical derivations the goal of this book is to present the subject from a strictly pragmatic introductory point of view particularly for those individuals involved with environmental engineering This book is concerned with unit operations fluid flow heat transfer and mass transfer Unit operations by definition are physical processes although there are some that include chemical and biological reactions. The unit operations approach allows both the practicing engineer and student to compartmentalize the various operations that constitute a process and emphasizes introductory engineering principles so that the reader can then satisfactorily predict the performance of the various unit operations equipment This is a definitive work on Unit Operations one of the most important subjects in environmental engineering today It is an excellent reference well written easily read and comprehensive I believe the book will serve well those working in engineering disciplines including those beyond just environmental and chemical engineering Bottom line A must for any technical library Kenneth J Skipka CCM ICOST 2019 Sri Harini ,Hafsan,Sahara,Isna Rasdianah Aziz,Robbi Rahim,2020-06-14 We are delighted to introduce the proceeding of the first edition of the International Conference on Science and Technology ICoST that was held in Claro Hotel May 2 3 2019 It was organized by Faculty of Science and Technology Universitas Islam Negeri Alauddin Makassar in partnership with Forum Dekan Fakultas Sains dan Teknologi PTKIN The theme of the ICoST is Roles and Challenges of Science and Technology in Guaranteeing Halal Products in the Industrial Revolution 4 0 The Indonesian government has begun to respond this industrial change by launching the roadmap of Making Indonesia 4 0 as a strategy to ease Indonesia's steps to become one of the new powers in Asia in April 2018 This roadmap provides a clear direction for the

movement of the national industry in the future including a focus on developing priority sectors that will become Indonesia s strength towards Industry 4 0 The proceeding of ICoST contains the scientific research written by the academicians researchers practitioners and government elements who have the same thoughts about the effort to develop the society s ability to adapt the advancement of science and technology in the global competition to face the industrial revolution 4 0 We are also very grateful to all keynote speakers and committee members willing to act as referee for their time and efforts to keep our conference going well In the future we expect the ICoST will be able to provide another scientific atmosphere and stimulate more participants to join this conference Mass Transfer Operations for the Practicing Engineer Louis Theodore, Francesco Ricci, 2011-12-06 An invaluable guide for problem solving in mass transfer operations This book takes a highly pragmatic approach to providing the principles and applications of mass transfer operations by offering a valuable easily accessible guide to solving engineering problems Both traditional and novel mass transfer processes receive treatment As with all of the books in this series emphasis is placed on an example based approach to illustrating key engineering concepts The book is divided into two major parts It starts with the principles underlying engineering problems showing readers how to apply general engineering principles to the topic of mass transfer operations. It then goes on to provide step by step guidance for traditional mass transfer operations including distillation absorption and stripping and adsorption plus novel mass transfer processes Essential topics for professional engineering exams are also covered Geared towards chemical environmental civil and mechanical engineers working on real world industrial applications Mass Transfer Operations for the Practicing Engineer features Numerous sample problems and solutions with real world applications Clear precise explanations on how to carry out the basic calculations associated with mass transfer operations Coverage of topics from the ground up for readers without prior knowledge of the subject Overview of topics relevant to the ABET Accreditation Board for Engineering and Technology for those taking the Professional Engineering PE exams Appendix containing relevant mass transfer operation charts and tables Herbicides Marcelo Larramendy, Sonia Soloneski, 2011-01-08 The content selected in Herbicides Theory and Applications is intended to provide researchers producers and consumers of herbicides an overview of the latest scientific achievements Although we are dealing with many diverse and different topics we have tried to compile this raw material into three major sections in search of clarity and order Weed Control and Crop Management Analytical Techniques of Herbicide Detection and Herbicide Toxicity and Further Applications The editors hope that this book will continue to meet the expectations and needs of all interested in the methodology of use of herbicides weed control as well as problems related to its use abuse and misuse Membrane Gas Separation Benny Freeman, Yuri Yampolskii, 2011-06-20 Gas separation membranes offer a number of benefits over other separation technologies and they play an increasingly important role in reducing the environmental impacts and costs of many industrial processes This book describes recent and emerging results in membrane gas separation including highlights of nanoscience and technology novel polymeric and inorganic

membrane materials new membrane approaches to solve environmental problems e g greenhouse gases aspects of membrane engineering and recent achievements in industrial gas separation It includes Hyperbranched polyimides amorphous glassy polymers and perfluorinated copolymers Nanocomposite mixed matrix membranes Polymeric magnetic membranes Sequestration of CO2 to reduce global warming Industrial applications of gas separation Developed from sessions of the most recent International Congress on Membranes and Membrane Processes Membrane Gas Separation gives a snapshot of the current situation and presents both fundamental results and applied achievements Innovation in Food Engineering Maria Laura Passos, Claudio P. Ribeiro, 2016-04-19 Consumer driven products have kept the food industry at the forefront of technological innovations For example the redefinition of the once accepted compromise between convenience and quality is just one of the current issues driving the development of new products An overview of a range of solutions for these challenges Innovation in Food Engi

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