1. Record Nr. UNINA9911020351903321

Autore	Freeman B. D (Benny D.)
Titolo	Membrane gas separation / / Yuri Yampolskii, Benny Freeman
Pubbl/distr/stampa	Hoboken, NJ, : Wiley, 2010
ISBN	9786612653858 9781119956587 1119956587 9781282653856 1282653857 9780470665626 0470665629 9780470665633 0470665637
Descrizione fisica	1 online resource (394 p.)
Altri autori (Persone)	IAmpolskiiIU. P (IUrii Pavlovich)
Disciplina	660/.043
Soggetti	Gas separation membranes Polyamide membranes Gases - Separation
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Membrane Gas Separation; Contents; Preface; Contributors; Part I: Novel Membrane Materials and Transport in Them; 1: Synthesis and Gas Permeability of Hyperbranched and Cross-linked Polyimide Membranes; 2: Gas Permeation Parameters and Other Physicochemical Properties of a Polymer of Intrinsic Microporosity (PIM-1); 3: Addition-type Polynorbornene with Si(CH3)3 Side Groups: Detailed Study of Gas Permeation, Free Volume and Thermodynamic Properties; 4: Amorphous Glassy Perfluoropolymer Membranes of Hyflon AD®: Free Volume Distribution by Photochromic Probing and Vapour Transport Properties 5: Modelling Gas Separation in Porous MembranesPart II: Nanocomposite (Mixed Matrix) Membranes; 6: Glassy Perfluorolymer-Zeolite Hybrid Membranes for Gas Separations; 7: Vapor Sorption and

Diffusion in Mixed Matrices Based on Teflon® AF 2400; 8: Physical and Gas Transport Properties of Hyperbranched Polyimide-Silica Hybrid Membranes; 9: Air Enrichment by Polymeric Magnetic Membranes; Part III: Membrane Separation of CO2 from Gas Streams; 10: Ionic Liquid Membranes for Carbon Dioxide Separation
11: The Effects of Minor Components on the Gas Separation Performance of Polymeric Membranes for Carbon Capture12: Tailoring Polymeric Membrane Based on Segmented Block Copolymers for CO2 Separation; 13: CO2 Permeation with Pebax®-based Membranes for Global Warming Reduction; Part IV: Applied Aspects of Membrane Gas Separation; 14: Membrane Engineering: Progress and Potentialities in Gas Separations; 15: Evolution of Natural Gas Treatment with Membrane Systems; 16: The Effect of Sweep Uniformity on Gas Dehydration Module Performance; Index

Sommario/riassunto

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 polyimide