1. Record Nr. UNINA9910298608503321

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Titolo	Gas Separation Membranes [[electronic resource]] : Polymeric and Inorganic / / by Ahmad Fauzi Ismail, Kailash Chandra Khulbe, Takeshi Matsuura
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2015
ISBN	3-319-01095-6
Edizione	[1st ed. 2015.]
Descrizione fisica	1 online resource (340 p.)
Disciplina	54 541.2 541.2254 546 620.44 660
Soggetti	Chemical engineering Polymers Inorganic chemistry Materials—Surfaces Thin films Nanochemistry Industrial Chemistry/Chemical Engineering Polymer Sciences Inorganic Chemistry Surfaces and Interfaces, Thin Films
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	Introduction -- Fundamentals of Gas Permeation through Membranes -- Gas Separation Membrane Materials and Structures -- Membrane Fabrication/Manufacturing Techniques -- Membrane Modules and Process Design -- Application of Gas Separation Membranes -- Characterization of Membranes.
Sommario/riassunto	This book describes the tremendous progress that has been made in

the development of gas separation membranes based both on inorganic and polymeric materials. Materials discussed include polymer inclusion membranes (PIMs), metal organic frameworks (MOFs), carbon based materials, zeolites, as well as other materials, and mixed matrix membranes (MMMs) in which the above novel materials are incorporated. This broad survey of gas membranes covers material, theory, modeling, preparation, characterization (for example, by AFM, IR, XRD, ESR, Positron annihilation spectroscopy), tailoring of membranes, membrane module and system design, and applications. The book is concluded with some perspectives about the future direction of the field.