1. Record Nr. UNINA9910967943103321

Autore	Bientinesi M (Miguel), <1950->
Titolo	Preparation of thin film Pd membranes for H2 separation from synthesis gas and detailed design of a permeability testing unit / / M. Bientinesi and L. Petarca
Pubbl/distr/stampa	New York, : Nova Science Publishers, c2010
ISBN	1-61122-688-0
Edizione	[1st ed.]
Descrizione fisica	1 online resource (94 p.)
Collana	Chemical engineering methods and technology
Altri autori (Persone)	PetarcaL <1945-> (Luca)
Disciplina	665.8/1
Soggetti	Hydrogen - Separation Palladium Membranes (Technology) Gasoline, Synthetic
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 (p. [71]-74) and index.
Nota di contenuto	Intro -- PREPARATION OF THIN FILM PD MEMBRANES FOR H2 SEPARATION FROM SYNTHESIS GAS AND DETAILED DESIGN OF A PERMEABILITY TESTING UNIT -- PREPARATION OF THIN FILM PD MEMBRANES FOR H2 SEPARATION FROM SYNTHESIS GAS AND DETAILED DESIGN OF A PERMEABILITY TESTING UNIT -- CONTENTS -- PREFACE -- Chapter 1 INTRODUCTION -- 1.1. HYDROGEN AS AN ENERGY CARRIER -- 1.2. CURRENT PRODUCTION METHODS AND USES -- 1.3. SYNGAS FOR HYDROGEN PRODUCTION -- 1.4. SEPARATION OF HYDROGEN FROM SYNTHESIS GAS -- 1.4.1. Pressure Swing Adsorption -- 1.4.2. Membrane Separation -- 1.5. FUNDAMENTALS OF HYDROGEN MEMBRANE SEPARATION TECHNOLOGY -- 1.5.1. Dense Polymeric Membranes -- 1.5.2. Dense Metallic Membranes -- 1.5.3. Microporous Ceramic Membranes -- 1.5.4. Dense Ceramic Membranes -- 1.5.5. Composite Membranes -- Chapter 2 PALLADIUM MEMBRANES -- 2.1. PURE PALLADIUM AND PALLADIUM ALLOYS MEMBRANES -- 2.2. POROUS SUPPORTS -- 2.3. PALLADIUM FILM DEPOSITION TECHNIQUES -- 2.3.1. Chemical Vapor Deposition -- 2.3.2. Spray Pyrolysis -- 2.3.3. Sputter Deposition -- 2.3.4. Electroplating -- 2.3.5. Electroless Plating -- 2.3.6. Pd-Alloy Deposition via ELP -- 2.4. PALLADIUM MEMBRANES CHARACTERIZATION -- Chapter 3 EXPERIMENTAL -- 3.1. METALLIC

POROUS SUPPORTS -- 3.2. SUPPORTS ABRASION AND CLEANING -- 3.3. SURFACE OXIDATION -- 3.4. SENSITIZATION AND ACTIVATION -- 3.5. ELECTROLESS PLATING -- 3.5.1. Bath Composition -- 3.5.2. Disc ELP Equipment -- 3.5.3. Tube ELP Equipment -- 3.5.4. Vacuum Electroless Plating -- 3.6. MORPHOLOGY CHARACTERIZAION -- 3.7. NITROGEN LOW PRESSURE PERMEATION TEST -- Chapter 4 RESULT AND DISCUSSION -- 4.1. POROUS SUPPORTS -- 4.2. SUPPORT ABRASION AND ETCHING -- 4.2. SURFACE OXIDATION -- 4.3. PALLADIUM DEPOSITION -- 4.4. TUBULAR MEMBRANES NITROGEN PERMEABILITY -- Chapter 5 PERMEABILITY TEST EXPERIMENTAL SET-UP -- 5.1. INTRODUCTION.
5.2. EXPERIMENTAL SET-UP -- 5.3. SELECTED EQUIPMENT -- 5.4. PERMEATION CELLS AND OTHER EQUIPMENT -- Chapter 6 CONCLUSION -- ACKNOWLEDGEMENTS -- REFERENCES -- INDEX -- Blank Page.

Sommario/riassunto

In this text, palladium films were deposited above stainless steel porous supports using the electroless plating (ELP) technique. Two different geometry (disc sheet and tubes) were used. Finally, in this book, the detailed design of a permeability testing unit is reported.