

CONTENTS

1. Introduction and perspective	1
2. Mechanisms and theories for sorption and diffusion of gases in polymers	17
3. Relationships between structure and transport properties for polymers aromatic backbones	83
4. Relationships between structure and transport properties for high free volume polymers materials	155
5. Membrane formation for gas separation processes	209
6. Facilitated and active transport	273
7. Unusual membrane processes: Non-steady – state regimes, nonhomogeneous and moving membranes	301
8. Membrane separation of organic vapors from gas steams	353
9. Industrial applications of membranes for gas separation in Japan	399
10. Commercial and practical aspects of gas separation membranes	411
11. Comparison of membranes with other gas separation technologies	531
12. Index	615