## Contents

Part I	Introduction	
	a Fascinating Class of High-Performance Porous Solids (With 5 Figures)	4
Part II	Production and General Aspects	
Aerogels of	Inorganic Oxides. By S.J. Teichner (With 3 Figures)	22
Advances in Production of Transparent Silica Aerogels for Window Glazings. By P.H. Tewari, A.J. Hunt, and K.D. Lofftus (With 4 Figures)		31
•	Production of Airglass ing (With 2 Figures)	38
-	recursors or End Materials? cki and T. Woignier (With 8 Figures)	42
The Sol-Gel Process for Non-Metallic Inorganic Materials By H. Schmidt and H. Scholze (With 6 Figures)		49
By C.J. Bri	nd Structure of Borate Based Aerogels nker, K.J. Ward, K.D. Keefer, E. Holupka, P.J. Bray, earson (With 12 Figures)	57
	, Densification and Characterization of Autoclave Dried By C.A.M. Mulder and J.G. van Lierop (With 4 Figures) .	68
Microporous	s Silica Fibres. By HD. Achtsnit (With 8 Figures)	76
Part III	Energy Conservation and Thermal Properties	
	Insulation for Passive Solar Energy Utilization in By A. Goetzberger and V. Wittwer (With 12 Figures)	84
	ansport in Porous Superinsulations (With 12 Figures)	94

VII

Thermal Conductivity of SiO <sub>2</sub> -Aerogel Tiles By D. Büttner, R. Caps, U. Heinemann, E. Hümmer, A. Kadur, P. Scheuerpflug, and J. Fricke (With 4 Figures)	. 104	
Radiative Heat Transfer in Silica Aerogel By R. Caps and J. Fricke (With 6 Figures)		
Thermal Conductivity of Granular SiO <sub>2</sub> Aerogel By D. Büttner, E. Hümmer, and J. Fricke (With 3 Figures)	116	
Thermal Properties of Silica Aerogel By O. Nilsson, Å. Fransson, and O. Sandberg (With 6 Figures)	121	
Solar Transmission of Aerogel Pellets By W. Platzer, V. Wittwer, and M. Mielke (With 5 Figures)	127	
Aerogel as a Transparent Thermal Insulation Material for Buildings By E. Schreiber, E. Boy, and K. Bertsch (With 7 Figures)	133	
Part IV Structural Aspects		
Microstructural Properties of Transparent Silica Aerogels By P.H. Tewari, A.J. Hunt, J.G. Lieber, and K. Lofftus (With 4 Figures)	142	
Pore Size Distribution of Silica Systems By G. Schuck, W. Dietrich, and J. Fricke (With 8 Figures)	148	
Microstructure of Silica Based Aerogel Using High Resolution Transmission Electron Microscopy By C.M. Lampert and J.H. Mazur (With 7 Figures)	154	
Structural Analysis of Granular Silica Aerogels By F.J. Broecker, W. Heckmann, F. Fischer, M. Mielke, J. Schroeder, and A. Stange (With 4 Figures)	160	
Mechanical and Acoustic Properties of Silica Aerogel By M. Gronauer, A. Kadur, and J. Fricke (With 4 Figures)	167	
Part V Applications	·	
Aerogel in High Energy Physics. By G. Poelz (With 19 Figures)	176	
Silica Aerogel and Space Astrophysics By L. Koch-Miramond (With 3 Figures)	188	
On Some Recent Applications of Aerogels By G.M. Pajonk and S.J. Teichner (With 12 Figures)		
Subject Index		
Index of Contributors	205	