

Table of Contents

Chapter 1	The Present and the Future of Structured Catalysts: An Overview	1
	<i>Andrzej Cybulski and Jacob A. Moulijn</i>	
Part I		
	Reactors with Structured Catalysts Where no Convective Mass Transfer Over a Cross Section of the Reactor Occurs (Monolithic Catalysts = Honeycomb Catalysts)	19
Chapter 2	Ceramic Catalyst Supports for Gasoline Fuel	21
	<i>Suresh T. Gulati</i>	
Chapter 3	Metal and Coated Metal Catalysts	71
	<i>Martyn V. Twigg and Dennis E. Webster</i>	
Chapter 4	Autocatalysts: Past, Present, and Future.....	109
	<i>Martyn V. Twigg and Anthony J.J. Wilkins</i>	
Chapter 5	Treatment of Volatile Organic Carbon (VOC) Emissions from Stationary Sources: Catalytic Oxidation of the Gaseous Phase.....	147
	<i>Stan Kolaczkowski</i>	
Chapter 6	Monolithic Catalysts for NO _x Removal from Stationary Sources	171
	<i>Isabella Nova, Alessandra Beretta, Gianpiero Groppi, Luca Lietti, Enrico Tronconi, and Pio Forzatti</i>	
Chapter 7	Catalytic Fuel Combustion in Honeycomb Monolith Reactors	215
	<i>Anders G. Ersson and Sven G. Järås</i>	
Chapter 8	Monolithic Catalysts for Gas-Phase Syntheses of Chemicals	243
	<i>Gianpiero Groppi, Alessandra Beretta, and Enrico Tronconi</i>	

Chapter 9	Modeling of Automotive Exhaust Gas Converters	311
	<i>Jozeef H.B.J. Hoebink, Jun M.A. Harmsen, Caren M.L. Scholz, Guy B. Murin, and Jaap C. Schouten</i>	
Chapter 10	Monolithic Catalysts for Three-Phase Processes	355
	<i>Andrzej Cybulski, Rolf Edvinsson Albers, and Jacob A. Moulijn</i>	
Chapter 11	Two-Phase Segmented Flow in Capillaries and Monolith Reactors.....	393
	<i>Michiel T. Kreutzer, Freek Kapteijn, Jacob A. Moulijn, Bengt Andersson, and Andrzej Cybulski</i>	
Chapter 12	Modeling and Design of Monolith Reactors for Three-Phase Processes	435
	<i>Rolf Edvinsson Albers, Andrzej Cybulski, Michiel T. Kreutzer, Freek Kapteijn, and Jacob A. Moulijn</i>	
Chapter 13	Film Flow Monolith Reactors	479
	<i>Achim K. Heibel und Paul J.M. Lebens</i>	
Part II		
	Reactors with Structured Catalysts Where Convective Mass Transfer Over the Cross Section of the Reactor Occurs.....	507
Chapter 14	Parallel-Passage and Lateral-Flow Reactors	509
	<i>Swan Tiong Sie and Huns Peter Calis</i>	
Chapter 15	Structured Packings for Reactive Distillation.....	539
	<i>Oliver Bailer, Lothar Spiegel, and Claudia von Scala</i>	
Part III		
	Monolithic Reactors with Permeable Walls (Membrane Reactors).....	551
Chapter 16	Catalytic Filters for Flue Gas Cleaning.....	553
	<i>Debora Fino, Stefania Specchia, Guido Suracco, and Vito Specchia</i>	
Chapter 17	Reactors with Metal and Metal-Containing Membranes	579
	<i>Vladimir M. Gryaznov, Margarita M. Ermilovu, Natalia V. Grekhova, and Gennady F. Tereschenko</i>	
Chapter 18	Inorganic Membrane Reactors	615
	<i>Stefania Specchia, Debora Fino, Guido Saracco, and Vito Specchia</i>	

Chapter 19 Ceramic Catalysts, Supports, and Filters for Diesel Exhaust After-Treatment.....	663
<i>Suresh T. Gulati, Michiel Makkee, and Agus Setiabudi</i>	
Chapter 20 Zeolite Membranes: Modeling and Application.....	701
<i>Freek Kapteijn, Weidong Zhu, Jacob A. Moulijn, and Tracy Q. Gardner</i>	
Part IV	
Catalyst Preparation and Characterization	749
Chapter 21 Transformation of a Structured Carrier into a Structured Catalyst	751
<i>Xiaoding Xu and Jacob A. Moulijn</i>	
Chapter 22 Structuring Catalyst Nanoporosity	779
<i>Marc-Olivier Coppens</i>	
Index	807