

1. Record Nr.	UNINA9910784630903321
Titolo	Advanced catalysts and nanostructured materials [[electronic resource] ] : modern synthetic methods // edited by William R. Moser
Pubbl/distr/stampa	San Diego, : Academic Press, c1996
ISBN	1-281-03337-5 9786611033378 0-08-052655-1
Descrizione fisica	1 online resource (619 p.)
Altri autori (Persone)	MoserWilliam R
Disciplina	660.2995 660/.2995 20
Soggetti	Catalysts Organic compounds - Synthesis
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	Front Cover; Advanced Catalysts and Nanostructured Materials: Modern Synthetic Methods; Copyright Page; Contents; Contributors; Preface; Chapter 1. Designed Synthesis of Mesoporous Molecular Sieve Systems Using Surfactant-Directing Agents; 1.1 Introduction; 1.2 Experimental; 1.3 Results and Discussion; 1.4 Conclusions; References; Chapter 2. The Role of Prehydrolysis in the Preparation of Zirconia-Silica Aerogels; 2.1 Introduction; 2.2 Methods; 2.3 Results and Discussion; 2.4 Conclusions; References; Chapter 3. The Chemistry of Preparation of VOP Mixed Oxides; 3.1 Introduction 3.2 Literature Survey3.3 Results and Discussion; 3.4 Conclusions; References; Chapter 4. Gel-Supported Precipitation: An Advanced Method for the Synthesis of Pure Mixed-Oxide Spheres for Catalytic Applications; 4.1 Introduction; 4.2 Brief Survey of the Industrial Preparation Methods of Oxide Carriers for Catalytic Applications; 4.3 Gel-Supported Precipitation (GSP) Method; 4.4 Properties of Oxides Prepared by the GSP Method; 4.5 Experimental and Apparatus Section; 4.6 Conclusions; References; Chapter 5. Platinum-Catalyzed Sulfur Dioxide Oxidation Revisited; 5.1 Introduction 5.2 Literature Survey5.3 Experimental Section; 5.4 Results and

Discussion; 5.5 Conclusions; References; Chapter 6A. Applications of Supercritical Drying in Catalyst Preparation; 6A.1 Introduction; 6A.2 Results; 6A.3 Conclusions; References; Chapter 6B. Aerogel Synthesis as an Improved Method for the Preparation of Platinum-Promoted Zirconia-Sulfate Catalysts; 6B.1 Introduction; 6B.2 Scope and Applications; 6B.3 Synthesis; 6B.4 Analytical Properties; 6B.5 Structure; 6B.6 Nature of the Active Sites; 6B.7 Catalytic Activity; 6B.8 Conclusions; References

Chapter 7. Surfactant-Stabilized Nanosized Colloidal Metals and Alloys as Catalyst Precursors 7.1 Introduction; 7.2 Survey and Key to the Literature; 7.3 Results and Discussion; 7.4 Nanometal Powders from Organosols; 7.5 Colloidal Alloyed Metals; 7.6 Catalytic Applications; 7.7 Experimental; References; Chapter 8. Sonochemical Preparation of Nanostructured Catalysts; 8.1 Introduction; 8.2 Literature Survey; 8.3 Results and Discussion; 8.4 Experimental Details; 8.5 Conclusions; References; Chapter 9. Preparation and Characterization of Polymer-Stabilized Rhodium Particles; 9.1 Introduction 9.2 Experimental 9.3 Results; 9.4 Discussion; 9.5 Conclusions; References; Chapter 10. Gas-Phase Synthesis of Nonstoichiometric Nanocrystalline Catalysts; 10.1 Introduction; 10.2 Gas-Phase Synthesis of Nanocrystalline Materials; 10.3 Nonstoichiometric Nanocrystalline Oxides for Catalytic Oxidation; 10.4 Summary; References; Chapter 11. A Flow-Through Hydrothermal Method for the Synthesis of Active Nanocrystalline Catalysts; 11.1 Introduction; 11.2 The RTDS Powder Synthesis Method and Apparatus; 11.3 RTDS Products; 11.4 Conclusions; References

Chapter 12. The Synthesis of Nanostructured Pure-Phase Catalysts by Hydrodynamic Cavitation

---

## Sommario/riassunto

The time has come for an assessment of the most important techniques for the fabrication of advanced catalysts. Catalyst production alone is more than a billion dollar business each year, and the product value of chemical processes using advanced catalysts is a few trillion dollars annually. This book seeks to provide a modern, materials science account of the best and most current techniques for the synthesis of advanced catalytic materials. Until now, there has been no single book which contains a definitive and comprehensive description of the important technologies for catalyst synthesis

---