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Nota di contenuto	Cover; Title Page; Copyright; Contents; Foreword; Preface; List of Contributors; Chapter 1 Strategies to Improve the Accessibility to the Intracrystalline Void of Zeolite Materials: Some Chemical Reflections; 1.1 Introduction; 1.2 Strategies to Obtain New Large-Pore Materials; 1.3 Methodologies to Control the Crystallization Process of Zeolite Materials in the Absence of Pore-Forming Agents; 1.3.1 Confined Nucleation and Growth; 1.3.2 Use of Blocking Agents for Crystal Growth; 1.3.2.1 Silanization Methods; 1.3.2.2 Use of Surfactants in the Synthesis of Silicoaluminophosphates 1.3.3 Synthesis in the Presence of Pore-Forming Agents 1.4 Postsynthesis Methodologies; 1.4.1 Materials with High Structural Anisotropy: Layered Zeolites; 1.4.2 Removal/Reorganization of T Atoms in the Crystal Bulk; 1.5 Conclusions; Acknowledgments; References; Chapter 2 Zeolite Structures of Nanometer Morphology: Small Dimensions, New Possibilities; 2.1 The Structures of Zeolites; 2.1.1 FAU and EMT Structures: Zeolites X and Y; 2.1.2 LTA Structure; 2.1.3 BEA Structure; 2.1.4 Pentasil Zeolites, MFI, and MEL Structures: ZSM-5,

ZSM-11, and S-1

2.2 The Structures of Zeotypes: Aluminophosphates and Silicoaluminophosphates
2.3 Lamellar Zeolites; 2.4 Conclusions and Perspectives; References; Chapter 3 Nanozeolites and Nanoporous Zeolitic Composites: Synthesis and Applications; 3.1 Introduction; 3.2 Synthesis of Nanozeolites; 3.2.1 Principles; 3.2.2 Synthesis from Clear Solutions; 3.2.2.1 Parameters Affecting the Crystal Size; 3.2.3 Synthesis Using Growth Inhibitor; 3.2.4 Confined Space Synthesis; 3.2.5 Synthesis of Nanozeolites Using Organic Media; 3.3 Nanozeolite Composites; 3.4 Recent Advances in Application of Nanozeolites
3.5 Conclusions and Perspectives
References; Chapter 4 Mesostructured and Mesoporous Aluminosilicates with Improved Stability and Catalytic Activities; 4.1 Introduction; 4.2 Zeolite/Mesoporous Composite Aluminosilicates; 4.2.1 Synthesis of Zeolite/Mesoporous Composite Material; 4.2.2 Catalytic Evaluation of Zeolite/Mesoporous Composite Material; 4.3 Posttreatment of Mesostructured Materials; 4.3.1 Posttreatment of Mesoporous Materials by Zeolite Structure-Directing Agents or Zeolite Nanocrystals; 4.3.2 Postsynthesis Grafting of Aluminum Salts on the Walls of Mesostructured Materials
4.4 Mesostructured and Mesoporous Aluminosilicates Assembled from Digested Zeolite Crystals
4.5 Mesostructured and Mesoporous Aluminosilicates Assembled from Zeolite Seeds/Nanoclusters; 4.5.1 Assembly of Mesostructured Aluminosilicates from Zeolite Y Seeds; 4.5.2 Assembly of Mesostructured Aluminosilicates from Pentasil Zeolite Seeds; 4.6 Conclusions; References; Chapter 5 Development of Hierarchical Porosity in Zeolites by Using Organosilane-Based Strategies; 5.1 Introduction; 5.2 Types of Silanization-Based Methods; 5.2.1 Functionalization of Protozeolitic Units with Organosilanes
5.2.1.1 Fundamentals of the Method

Sommario/riassunto

"Authored by a top-level team of both academic and industrial researchers in the field, this is an up-to-date review of mesoporous zeolites. The leading experts cover novel preparation methods that allow for a purpose-oriented fine-tuning of zeolite properties, as well as the related materials, discussing the specific characterization methods and the applications in close relation to each individual preparation approach. The result is a self-contained treatment of the different classes of mesoporous zeolites. With its academic insights and practical relevance this is a comprehensive handbook for researchers in the field and related areas, as well as for developers from the chemical industry."--Back cover
