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Nota di contenuto	Frontmatter -- Contents -- Prologue / Blay, Vincent / Bong Hong, Suk -- 1. Zeolites and MOFs? Dare to Know Them! / Valtchev, Valentin / Mintova, Svetlana -- 2. Synthesis and Identification Methods for Zeolites and MOFs / Martínez, L. Marcela T. / Ivanova, Svetlana / Benoît, Louis / Odriozola, José Antonio -- 3. Spectroscopic Methods of Characterization for Zeolites and MOFs / Bobadilla, Luis F. / Oliviero, Laetitia / Romero-Sarria, Francisca / Daturi, Marco -- 4. Oil Refining and Petrochemistry: Use of Zeolites and Opportunities for MOFs / Ángeles Romero, María / Lázaro, Jesús / Frontela, Juana -- 5. Biomass Transformation into Chemicals Using Zeolites and MOFs / Laguna Espita, Óscar Hernando / Coman, Simona M. / Centeno Gallego, Miguel Ángel / Pârvulescu, Vasile I. -- 6. Biocatalysis on Porous Materials / Díaz, Isabel / Blanco, Rosa María / Sánchez-Sánchez, Manuel / Márquez-Álvarez, Carlos -- 7. Adsorption Processes on Zeolites and Metal-Organic Frameworks for Industrial and Environmental Applications / López-Maya, Elena / Montoro, Carmen / Rodríguez-Albelo, L. Marleny / Maldonado, Carmen R. -- 8. Membrane Technology: how, where, and why / Sakai, Motomu / Seshimo, Masahiro / Matsukata, Masahiko -- 9. Computational Chemistry Experiment Possibilities / Szyja, Bartomiej M. / Vanpoucke, Danny -- 10. Zeolites and Metal-Organic Frameworks as Biomedical Nanodevices

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Sommario/riassunto

Zeolites are natural or synthetic materials with porous chemical structures that are valuable due to their absorptive and catalytic qualities. Metal-Organic Frameworks (MOFs) are manmade organometallic polymers with similar porous structures. This introductory book, with contributions from top-class researchers from all around the world, examines these materials and explains the different synthetic routes available to prepare zeolites and MOFs. The book also highlights how the substances are similar yet different and how they are used by science and industry in situations ranging from fueling cars to producing drugs.
