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# Microporous Zeolites and Related Nanoporous Materials: Synthesis, Characterization and Applications in Catalysis

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Microporous zeolites and nanoporous materials are important from an academic and industrial research perspective. These inorganic materials have found application as catalysts in several industrial processes in oil refinery, petro-chemical reactions, fine chemicals, speciality, drug discovery and pharmaceutical synthesis, exhaust emission control for stationary and mobile engines and industrial wastewater treatment. The reasons for their versatile applications in several industrial processes are their unique properties of microporous zeolites and nanoporous materials such as uniform pores, channel systems, shape selectivity, resistance to coke formation, thermal and hydrothermal stability. Furthermore, the possibility to tune the amount and strength of Brønsted and Lewis acid sites and their crystal size, as well as the possibility of modification with transition and noble metals, are key to their success as efficient, high selectivity and stable catalysts.

