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Functional Nanoporous Materials

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With pore sizes up to 100 nm, the term "nanoporous" covers a wide range of material classes. A broad field of applications has arisen from the diversity of unique structures and properties of nanoporous materials. Recent research spans the range from fundamental studies of the behavior of atoms and molecules in confined space, creative synthetic pathways for novel materials, to applications in high-performance technologies. This Special Issue collects current studies about the progress in the development, characterization, and application of nanoporous materials, including (but not restricted to) mesoporous silica, carbon and metal oxides, porous coordination polymers, metal organic frameworks (MOFs), and covalent organic frameworks (COFs), as well as materials exhibiting hierarchical porosity. Their functionalities show promise for fields such as energy storage/conversion (e.g., photocatalysis and battery electrodes), sensing, catalysis, and their sorption properties for N₂, CO₂, NO_x, or H₂O, to name just a few.

