**Nanoporous materials for energy and environmental applications**

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**Abstract**

Nanoporous materials have found many applications, such as porous silicon for optoelectronics, porous catalysts for oil refining and hydrocarbon conversions, porous membranes for gas separation and purification, porous adsorbents for wastewater treatment. Emerging applications such as electrochemical energy storage, desalination, and drug delivery require advanced porous materials with well-defined structural, interfacial, compositional, and morphological properties. This paradigm presents great challenges and opportunities for designing and synthesis of advanced nanoporous materials with prescribed physical, chemical and morphological properties. In this talk, I will discuss our recent research work on nanoporous materials for applications of electrochemical energy storage and environmental technology.