Ordered Mesoporous Carbons with Various 3-Dimensional Pore Network

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Recently, preparation of a new series of ordered mesoporous carbon materials has been reported via nanocasting technique using mesoporous silica as the templates. Compared with the typical porous carbon materials such as activated carbon, this new type of carbons promises to be suitable as adsorbents, catalyst supports, and materials for advanced electronics applications due to high surface area and uniform mesopores. However, the pore structure should be controlled for their application.

Here, we present the pore structure control of the mesoporous carbon materials by using different mesoporous silica templates such as MSU-H and KIT-6 with 2D-hexagonal mesostructure and 3D bicontinuous cubic mesostructure.. This approach would have lots of benefits for the catalytic application such as direct methanol fuel cell.