

Synthesis of Ordered Mesoporous Silica Platelet with Controlled Mesopore alignment via Hydrolysis Control

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According to IUPAC nomenclature, porous solids are broadly classified, on the basis of pore size, into three categories, viz., microporous ($< 2\text{nm}$), mesoporous ($2 \sim 50\text{nm}$), and macroporous ($> 50\text{nm}$). Especially, there have been continuous research activities on the synthesis and characterization of mesoporous material due to their well organized nanoporous structures, high surface areas and so on.

Morphology of mesoporous materials is one of the most important factors for their practical applications, which can be controlled by various synthetic strategies such as reaction condition and additives.

In this study, we report a novel synthesis of mesoporous material with plate like morphology and highly ordered mesochannels perpendicular to the plate axis by controlling hydrolysis and adding additives. The silica platelet thus obtained are expected to favorable for advanced applications such as nano-catalysis, sensor, etc. due to their highly accessible short-pore channels