

Mesoporous Silica Nanoparticles from a Clear Sol and their Transformation to Lamellar Silicalite-1 Particles and Films

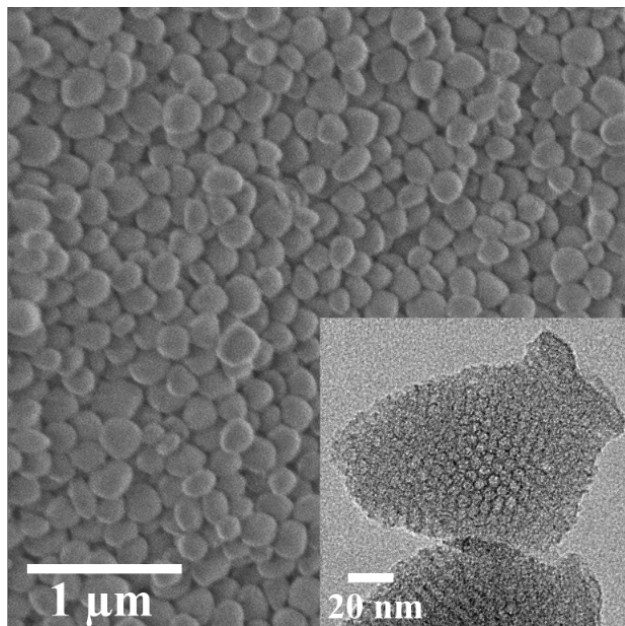
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NNIN Facility utilized: Characterization Facility

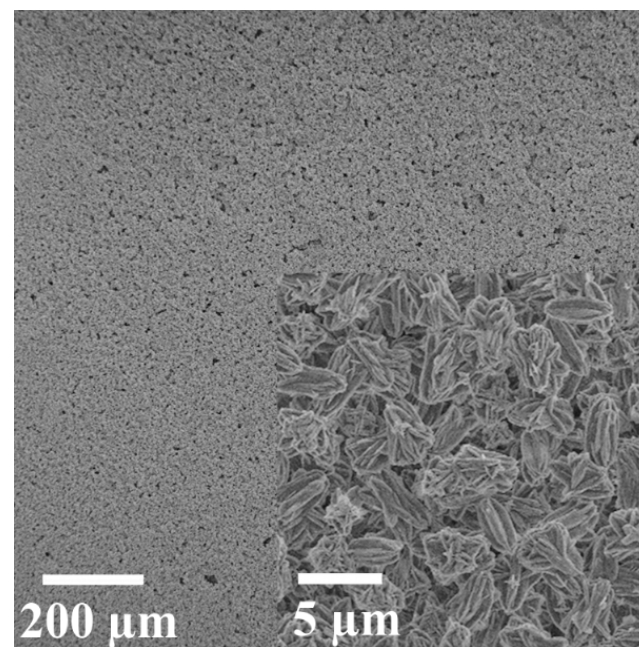
DESCRIPTION OF WORK

- ◆ Synthesis of lamellar MFI starting from a clear sol
- ◆ Isolation of precursor mesoporous colloidal particles
- ◆ Steam-assisted crystallization of coatings of precursor particles leads to lamellar MFI film



MAJOR OBSERVATIONS

- ◆ Mesoporous silica nanoparticles can be formed from a clear sol
- ◆ Hydrothermal synthesis or steam-assisted crystallization can transform them to lamellar silicalite-1



Publications

- ◆ Xueyi Zhang and Michael Tsapatsis. *Microporous and Mesoporous Materials* 2011, **138**, 239.