Supplementary Material (ESI) for Chemical Communications

Mesoscopically ordered organo-silica and carbon-silica hybrids with uniform morphology by surfactant-assisted self-assembly of organo bis-silanetriols

Jiebin Pang, Lu Yang, Douglas A. Loy, Huisheng Peng, Henry S. Ashbaugh, Joel Mague, C. Jeffrey Brinker, and Yunfeng Lu

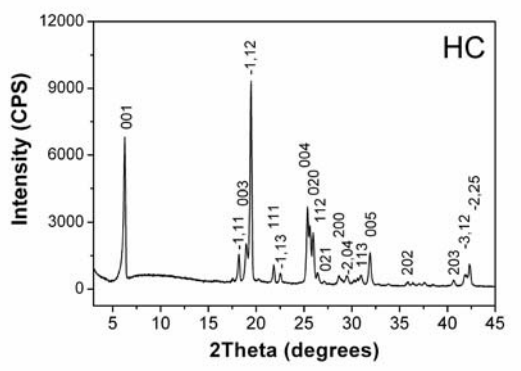

Fig. S1 XRD pattern of the as-synthesized hybrid crystals HC. Recorded on a Siemens D500 diffractometer operating at 40 kV, 30 mA, Cu K_α radiation, λ=0.15406 nm.

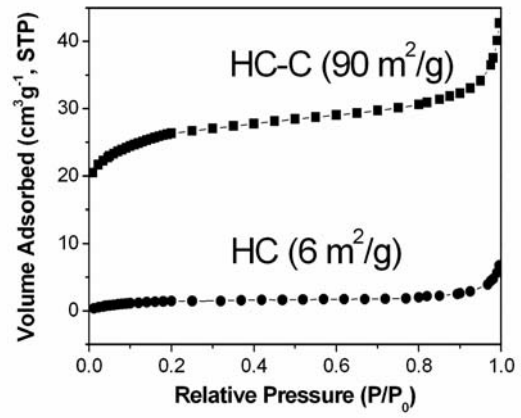

Fig. S2 Nitrogen adsorption isotherms of the as-synthesized hybrid crystals HC, and carbonized hybrid HC-C. Measured at 77 K on a micromeritics ASAP 2010 analyzer.

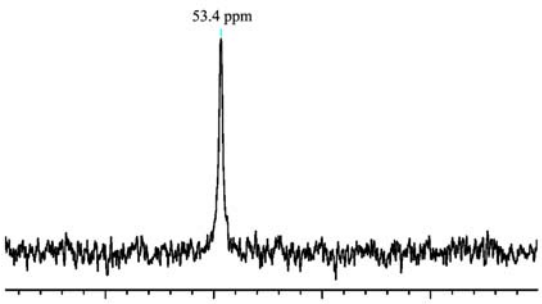

Fig. S3 ^{29}Si MAS NMR spectrum of the as-synthesized hybrid crystal HC. The single peak at -53.4 ppm corresponds to the uncondensed, completely-hydrolyzed silanetriols. Measured on a Varian Inova 400 spectrometer.

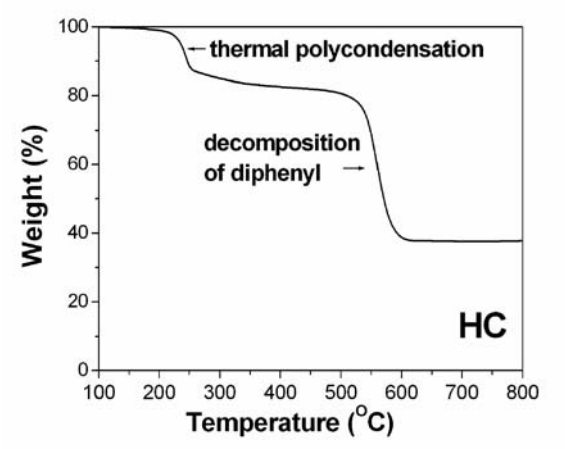

Fig. S4 TGA curve of the as-synthesized hybrid crystals HC in oxygen performed on a TA Hi-Res TGA 2950 instrument.

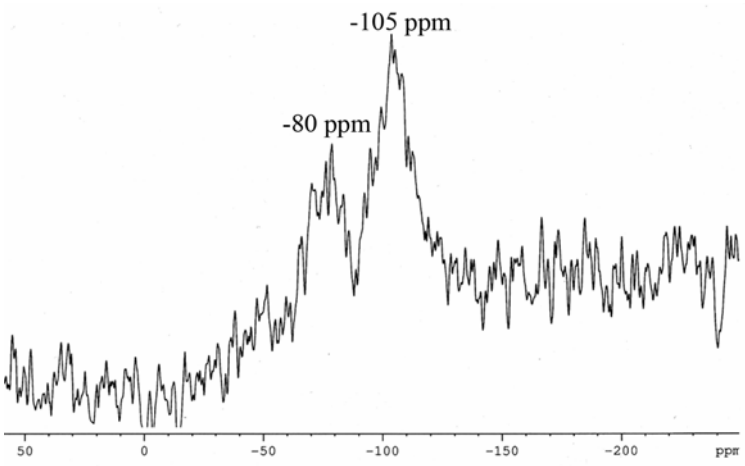

Fig. S5 ^{29}Si MAS NMR of the carbonized particles. The chemical shifts at -80 and -105 ppm are assigned to T_3 Si and Q_4 Si, respectively. Measured on a Bruker ASX300 spectrometer.

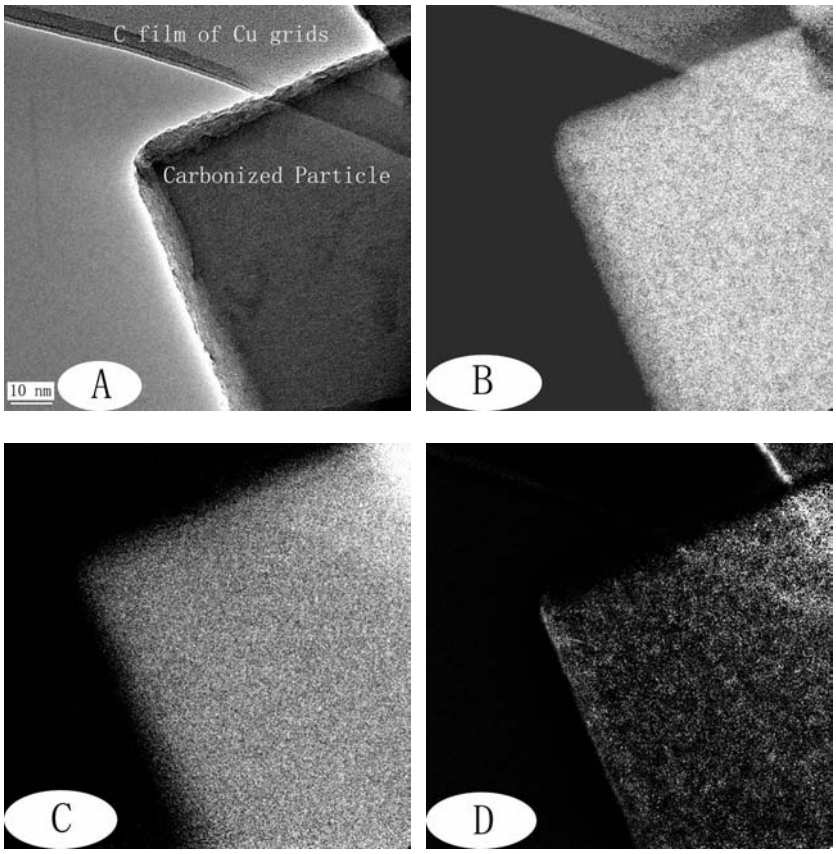

Fig. S6 TEM image (A) and the corresponding EELS Carbon- (B), Oxygen- (C), and Silicon-mapping (D) images of the carbonized particles. Taken on a JEOL 2010F microscope operated at 200 kV.