Supplementary Material (ESI) for Chemical Communications

Electronic Supplementary Information

One-step Hydrothermal Synthesis of Ordered Mesostructured Carbonaceous Monoliths with Hierarchical Porosities

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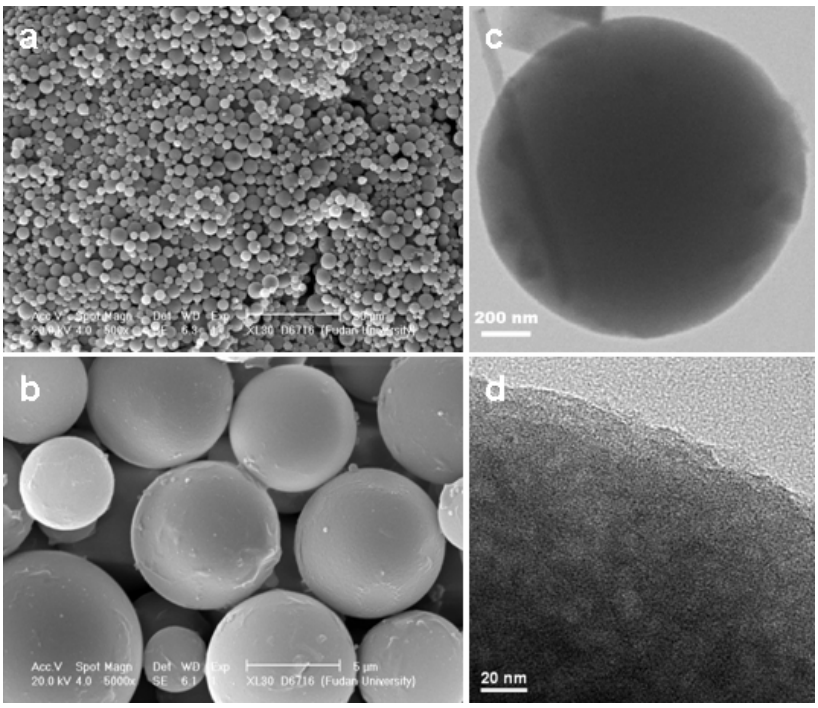

Figure S1 SEM images (a, b) and TEM images (c, d) of mesoporous carbon spheres after calcined at 600 °C. The carbon microspheres were synthesized under static hydrothermal condition at 100 °C for 10 h by using triblock copolymer F127 as a template, with the molar ratio of phenol: formaldehyde: F127= 1:4:0.0149.

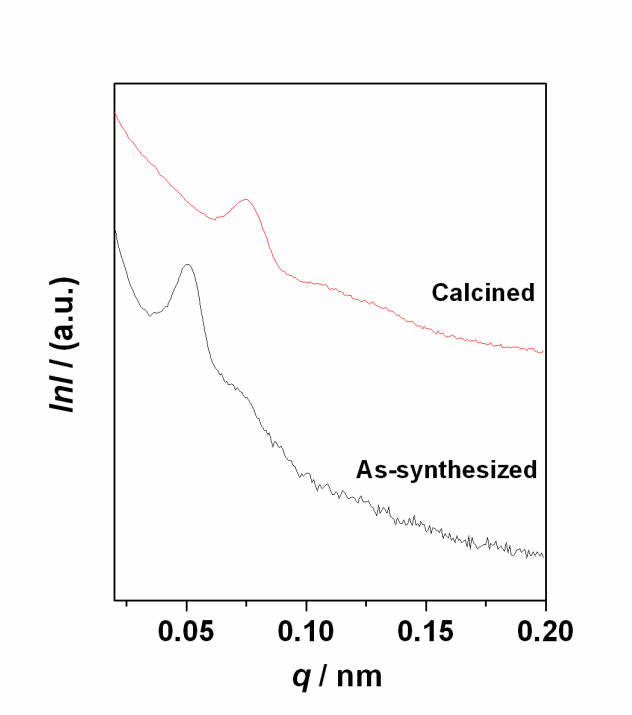

Figure S2 SAXS patterns of as-synthesized and calcined mesoporous carbon spheres prepared under static hydrothermal condition at 100 °C for 10 h by using triblock copolymer F127 as a template, with the molar ratio of phenol: formaldehyde: F127 = 1:4:0.0149.

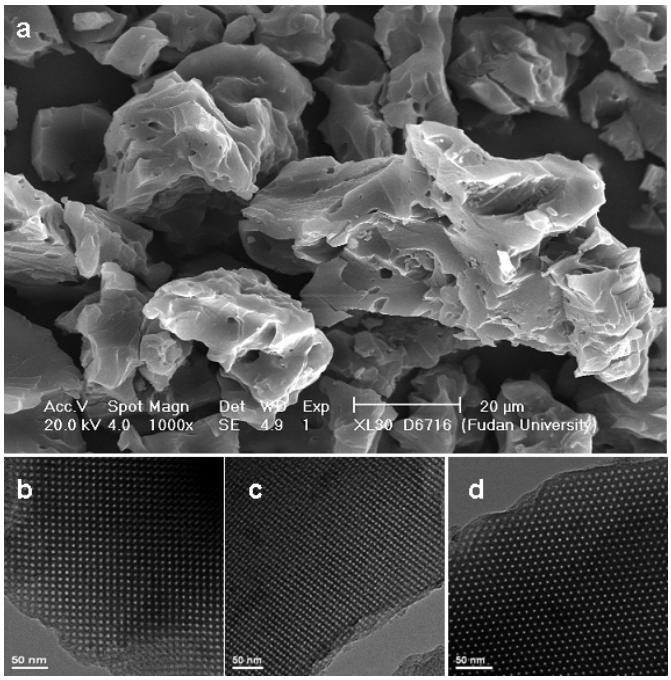

Figure S3 SEM (a) and TEM images (b, c, d) of the body-centered cubic $Im\bar{3}m$ mesoporous carbons after calcined at 600 °C. The TEM image were recorded along from [100] (b), [110] (b) and [111] (c) directions, respectively. The mesoporous carbons were prepared by the high temperature hydrothermal method with a molar ratio of phenol: formaldehyde: F127= 1:4:0.0149. The synthesis was carried out under 100°C oil-bath with vigorous stirring for 10 h.

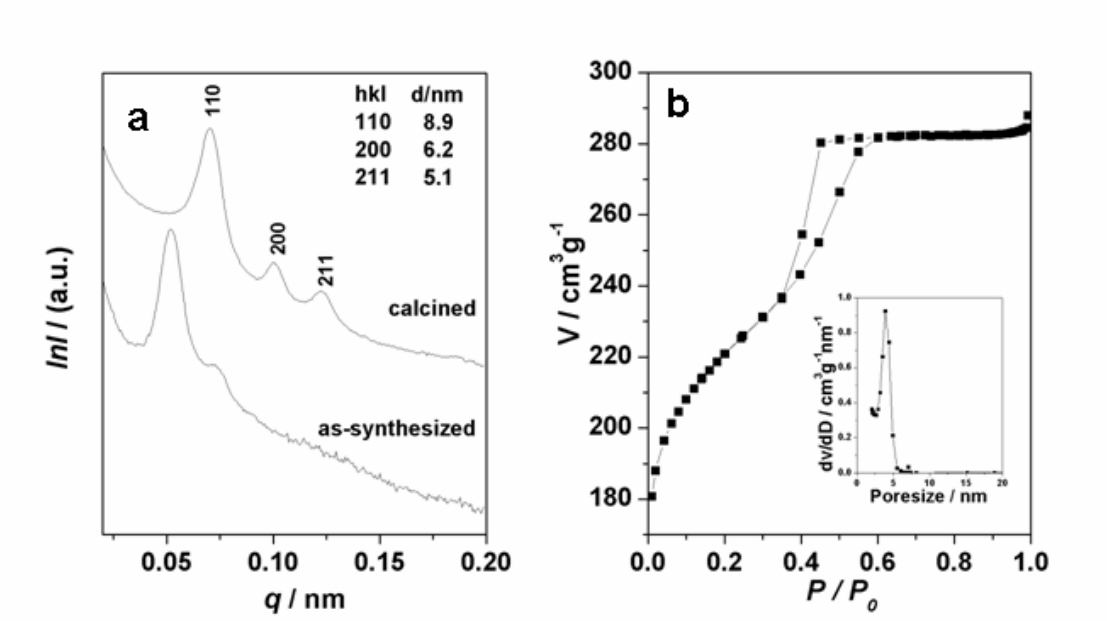

Figure S4 SAXS patterns of the as-synthesized and calcined the body-centered cubic $Im\bar{3}m$ mesoporous carbon structure (a); and N_2 sorption isotherms with pore size distribution (inset) of calcined body-centered cubic $Im\bar{3}m$ mesostructured carbons (b).

Text S1. Characterization Procedures:

The SAXS patterns were taken on a Nanostar U small-angle X-ray scattering system (Bruker) using Cu Kα radiation (40 kV, 35 mA). Nitrogen sorption isotherms were measured at 77 K with a Micromeritcs Tristar 3000 analyzer. Before measurements, the samples were degassed in vacuum at 200 °C for at least 6 h. TEM images were obtained with a JEOL 2011 microscope operated at 200 kV. The samples for TEM measurements were suspended in ethanol and supported onto a holey carbon film on a Cu grid. SEM images were obtained with Philips XL-30 micropcope operated at 20 kV. A thin gold film was sputtered on the sample before characterization. Hg porosimetry measurement was carried out on a Poresizer 9320 mercury porosimeter.