

Supplementary Information

N-doped Hierarchical Mesoporous Carbon from Mesophase Pitch and Polypyrrole for Supercapacitors

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Preparation of silica MCM-48

Typically, 13.4 g of cetyltrimethyl ammonium bromide (CTAB) was dispersed into a solution containing 15.2 ml of sodium hydroxide (2 M) and 79.2 ml of deionized water under magnetic stirring for 0.5 h at room temperature. Then, 14.2 g of tetraethoxysilane (TEOS) was dropped into the above solution. After continuously stirring for 0.5 h, the mixture was put into Teflon container and synthesized by hydrothermal reaction at 100°C for 72 h. Then, the obtained product was washed to neutral using deionized water for several times and dried in vacuum at 80°C for 24 h. Finally, the white powder after grinding was annealed in air atmosphere at 550°C for 6 h with a heating rate of 1.5°C/min and then the silica MCM-48 was obtained.

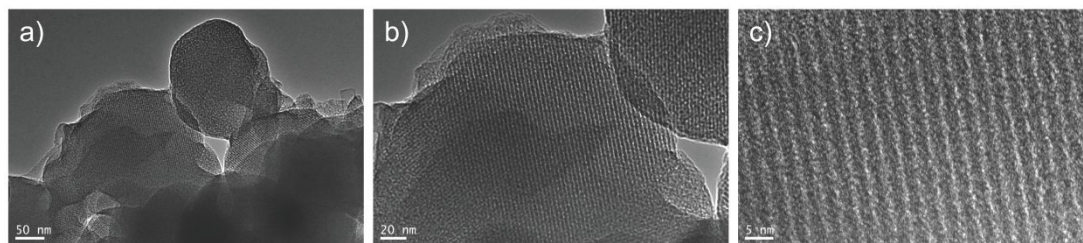


Figure S1. TEM of the MCM-48 sample: a) low-resolution TEM image; b) and c) high-resolution TEM images.

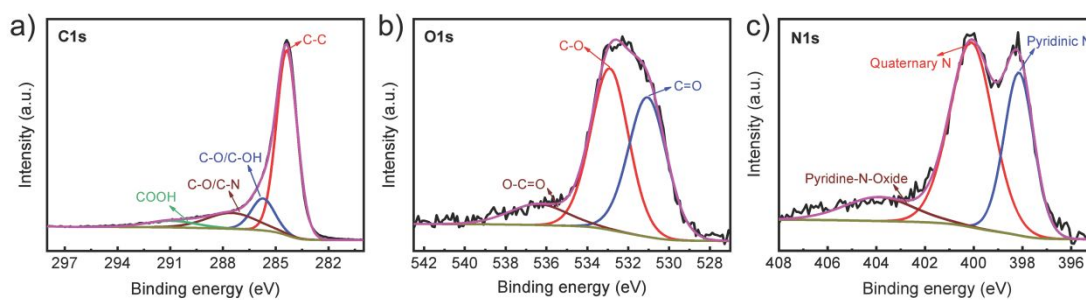


Figure S2. a) High resolution C_{1s} spectra; b) High resolution O_{1s} spectra; and c) High resolution N_{1s} spectra of NPC-600.

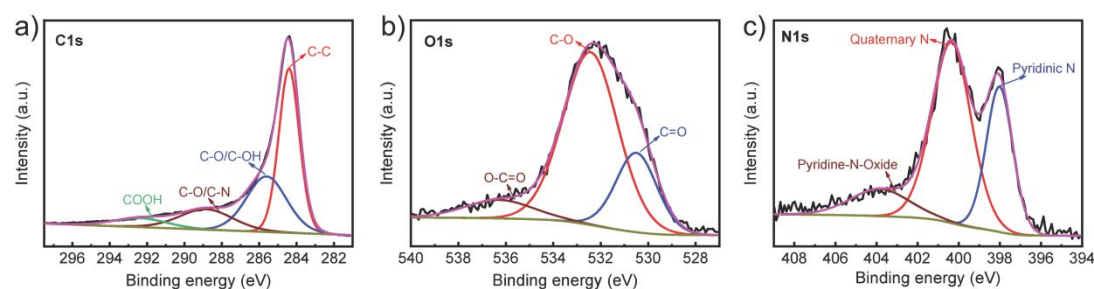


Figure S3. a) High resolution C_{1s} spectra; b) High resolution O_{1s} spectra; and c) high resolution N_{1s} spectra of NPC-800.

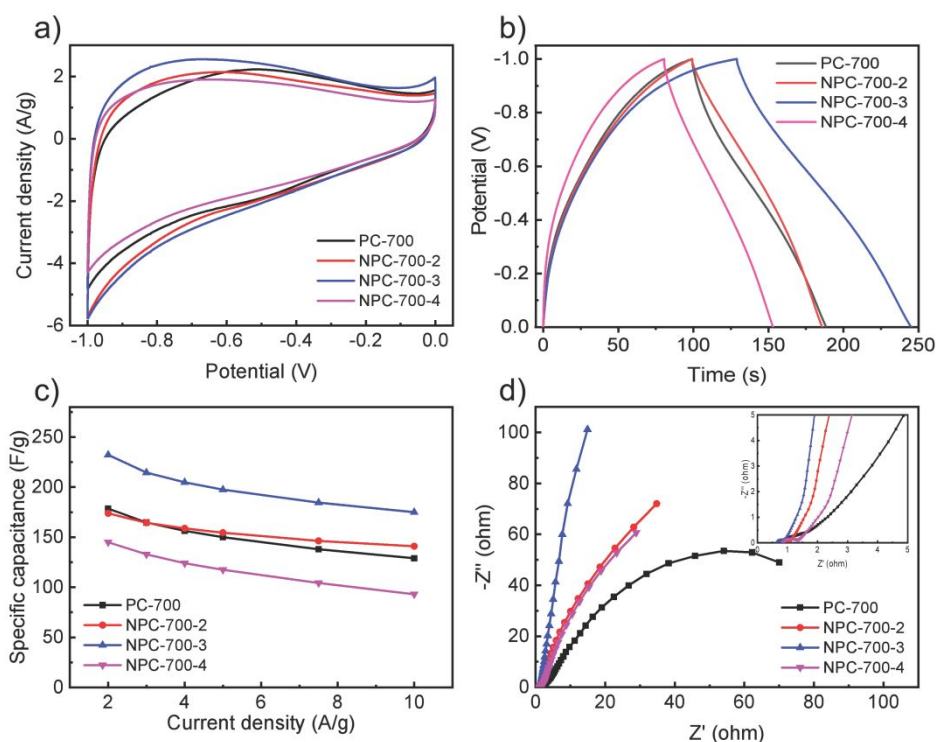


Figure S4. Comparison of electrochemical performance base on PC-700, NPC-700-2, NPC-700-3, NPC-700-4 (PC-700 is the sample without adding pyrrole; 2, 3 and 4 are the mass ratios of pyrrole and MP): a) CV curves at a scan rate of 10 mV s^{-1} ; b) GCD curves at current density of 2 A g^{-1} ; c) Specific capacitance at different current densities; d) Nyquist plots.