

## Supporting Information

### Sequential transformations of organic nitrogen functionalities in periodic mesoporous silica

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#### Characterization

Nitrogen sorption measurements were performed on a Quantachrome Instruments NOVA 4000e at a temperature of 77.35 K. The specific surface area was determined by a 30-point BET measurement at pressure values  $p/p_0$  smaller than 0.3. Pore diameters were determined using a BJH model (it is believed that the BJH model results in pore diameters that are about 1 nm smaller than the real diameters). <sup>13</sup>C-MAS-NMR spectra were recorded on a Bruker DSX avance 500 FT-NMR. Raman spectra were recorded on a Bruker Equinox 55s equipped with a FRA106/S module. UV-vis measurements were performed on a Varian Cary 50 6nr spectrometer. Thermogravimetric analysis (TGA) was performed on a Netzsch STA 440 C instrument by heating 10 mg sample with a heating rate of 10 °C per minute in a stream of synthetic air (25 mL per minute). For calculation of the organic content, the weight loss between 200 – 600 °C was used.

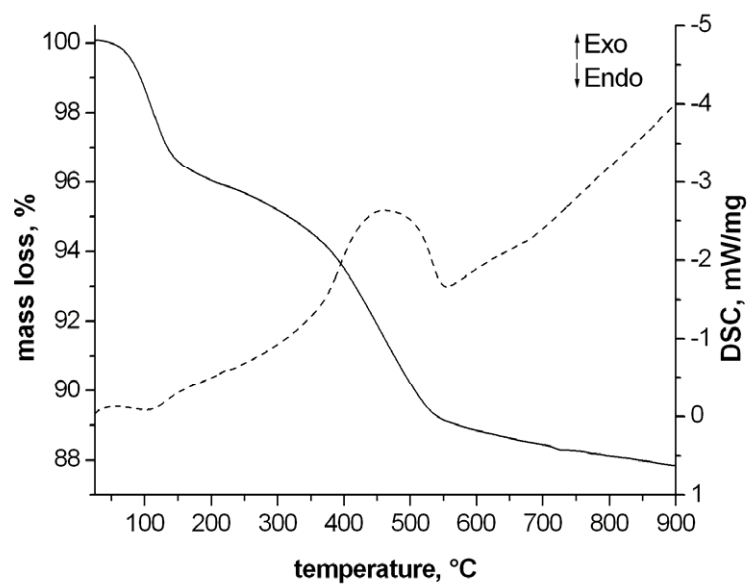


Figure SI-1. TGA/DSC data for sample NH<sub>2</sub>.MCM.

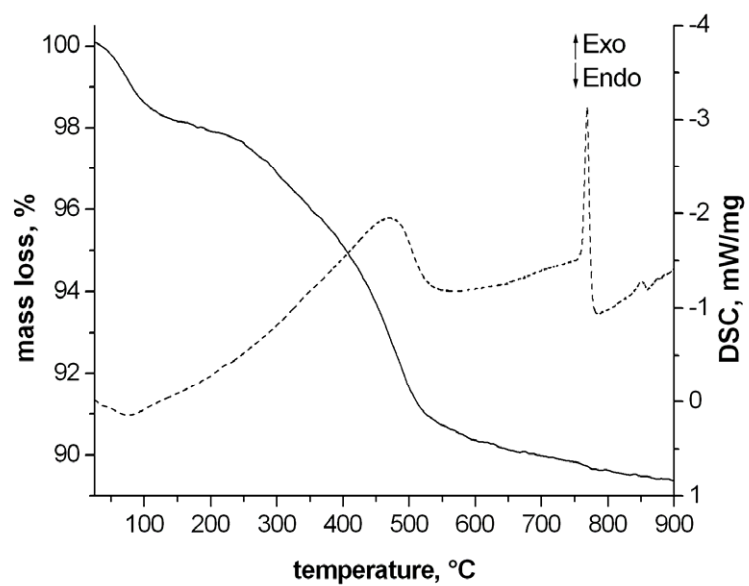


Figure SI-2. TGA/DSC data for sample NR<sub>4</sub><sup>+</sup>.NH<sub>2</sub>.MCM 1.

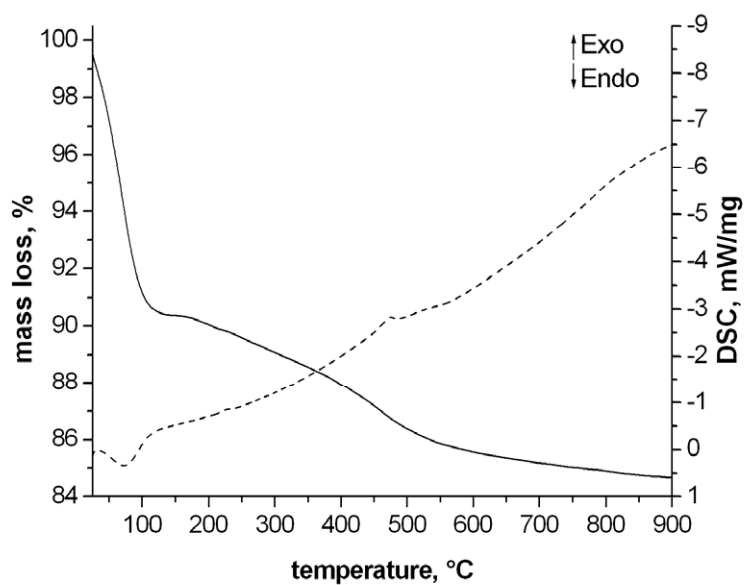


Figure SI-3. TGA/DSC data for sample IM.NH<sub>2</sub>.MCM 2.

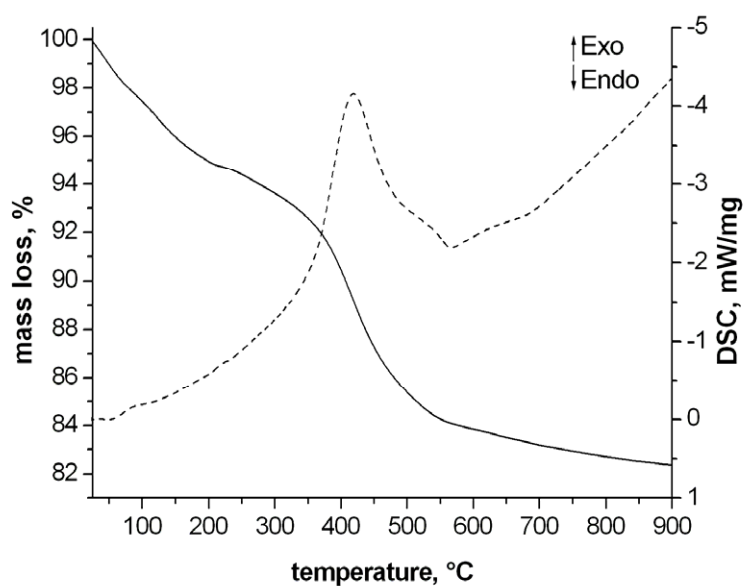


Figure SI-4. TGA/DSC data for sample FmocPhe.NH<sub>2</sub>.MCM 3.

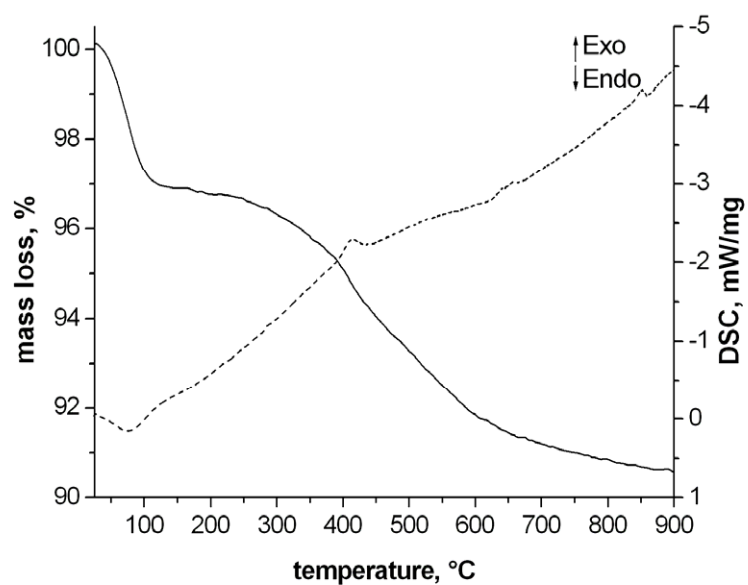


Figure SI-5. TGA/DSC data for sample AZ.N<sub>2</sub><sup>+</sup>.NH<sub>2</sub>.MCM 4.

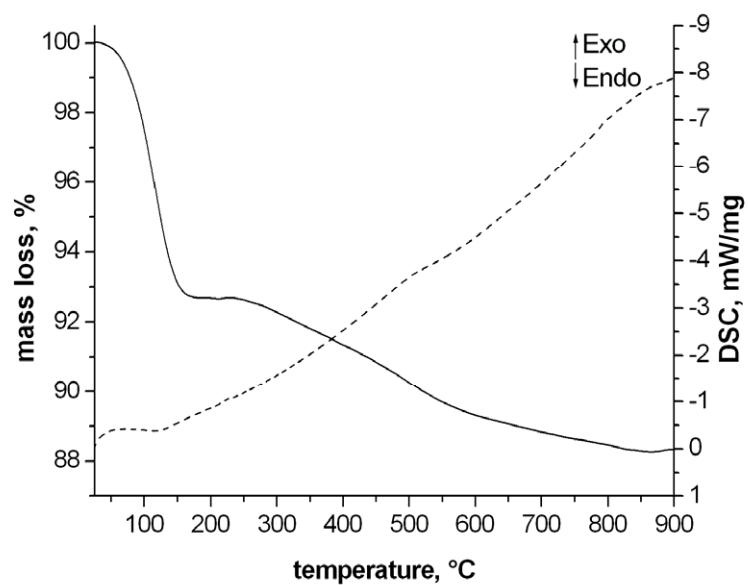


Figure SI-6. TGA/DSC data for sample STI.N<sub>2</sub><sup>+</sup>.NH<sub>2</sub>.MCM 5.