Electronic Supplementary Material (ESI) for Journal of Materials Chemistry

Synthesis of Mesoporous Composite Materials of Nitrogen-Doped Carbon and Silica Using a Reactive Surfactant Approach

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SUPPORTING INFORMATION

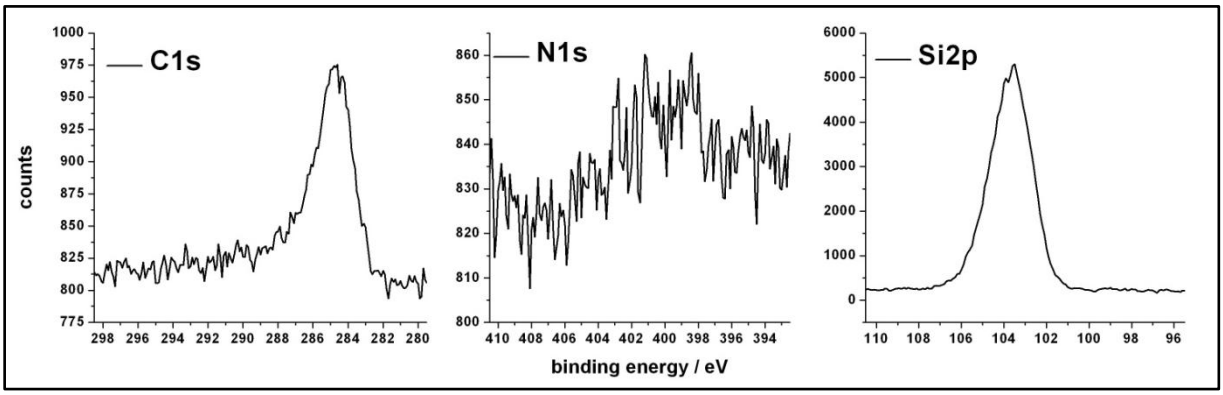

Fig. S 1: XPS spectra of composite material synthesised with 1.2 mmol NHP-dca

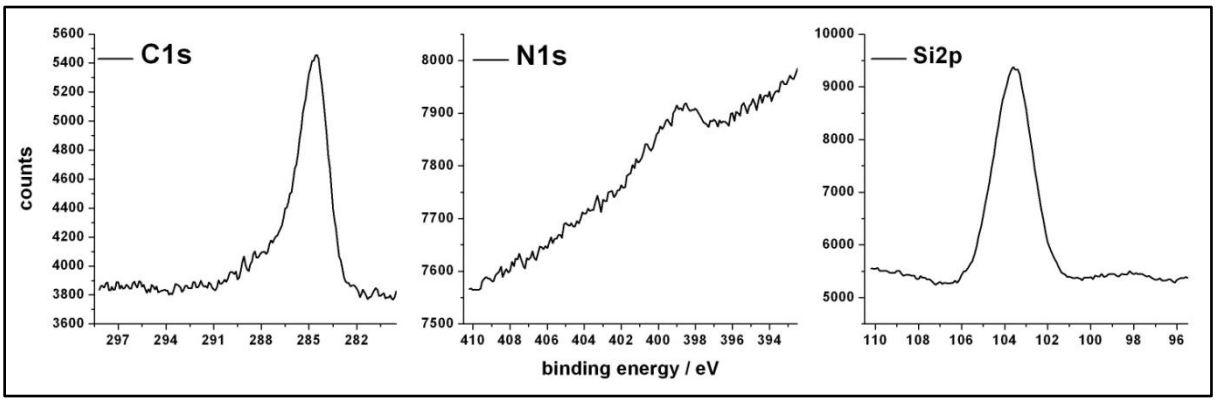

Fig. S 2: XPS spectra of composite material synthesised with 1.4 mmol NHP-dca

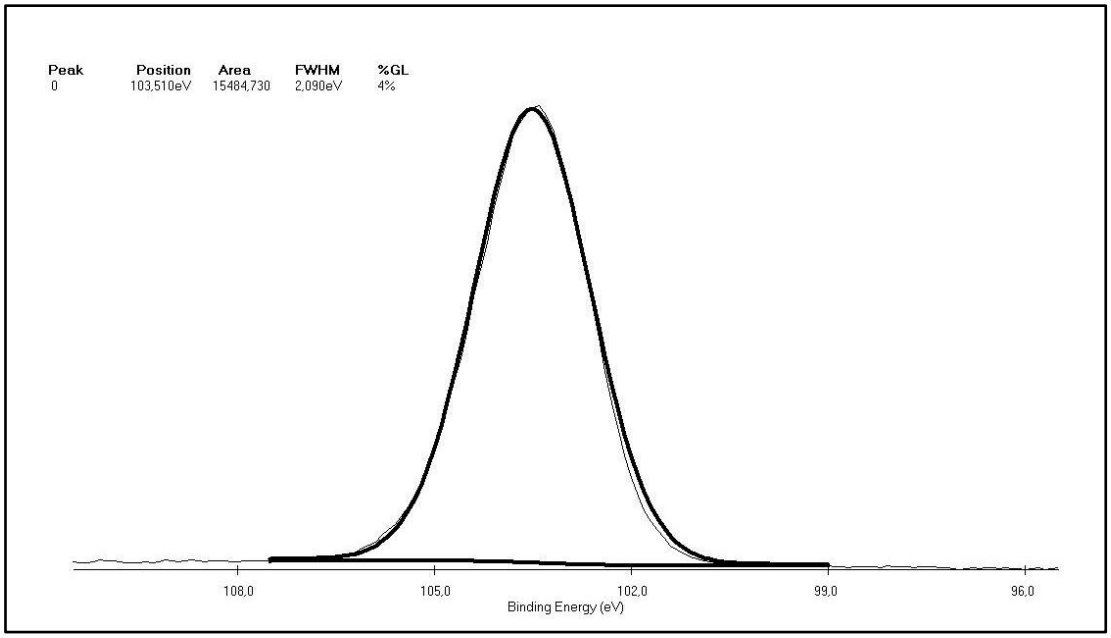

Fig. S 3: Deconvoluted XPS spectrum of the Si-2p orbital, measured on the composite material synthesised with 1.6 mmol of NHP-dca

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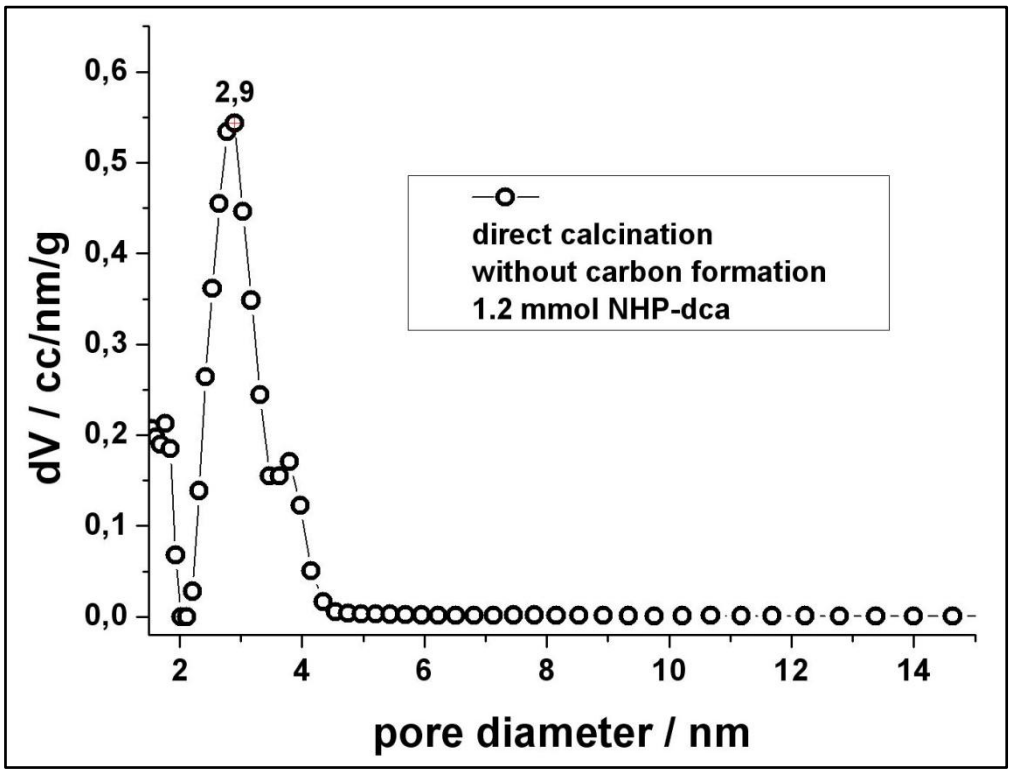

Fig. S 4: NLDFT pore size distribution of silica / direct calcination under air after sol-gel-synthesis (1.2 mmol NHP-dca)

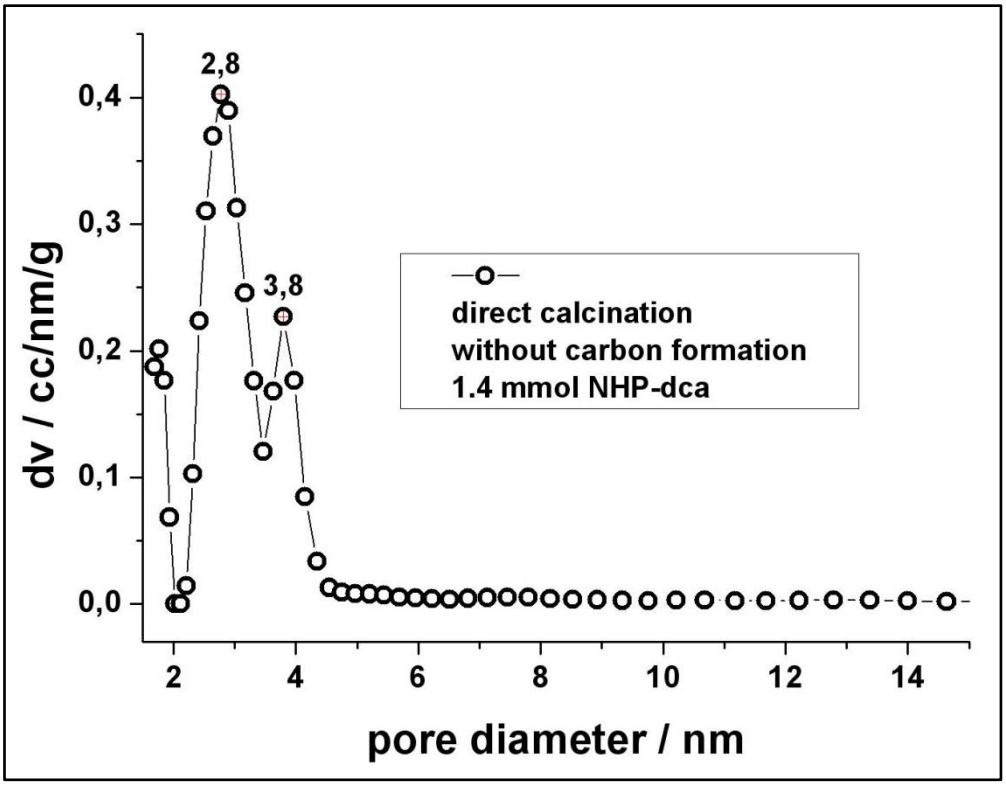

Fig. S 5: NLDFT pore size distribution of silica / direct calcination under air after sol-gel-synthesis (1.4 mmol NHP-dca)

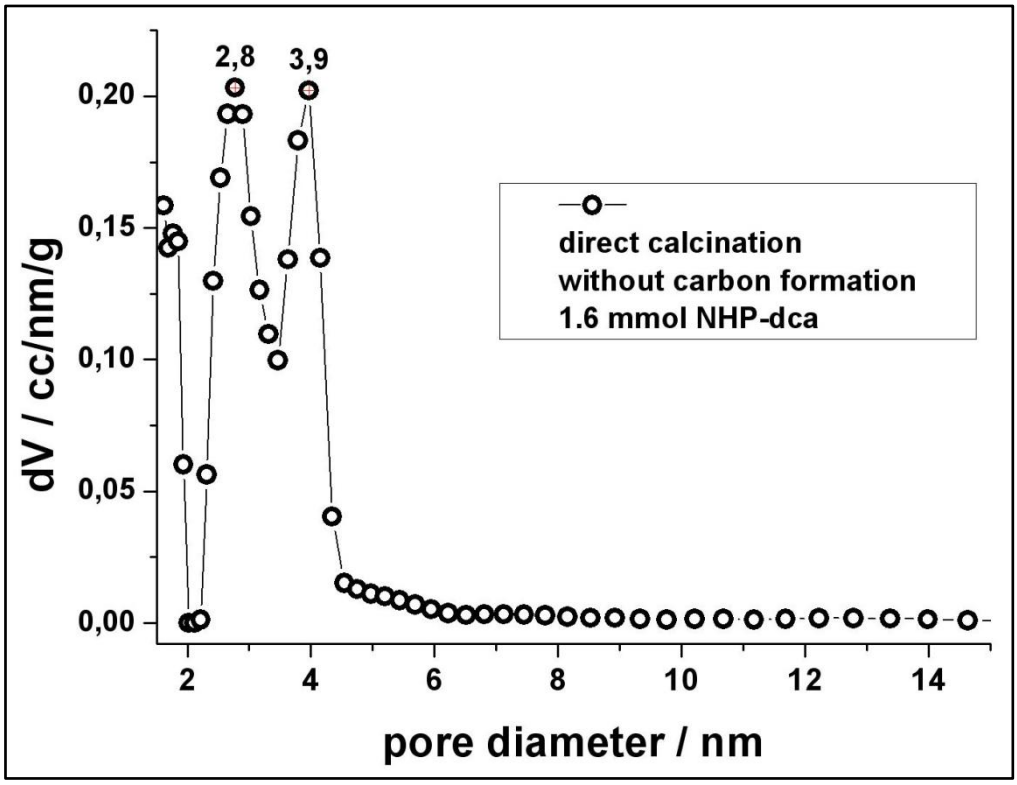

Fig. S 6: NLDFT pore size distribution of silica / direct calcination under air after sol-gel-synthesis (1.6 mmol NHP-dca)

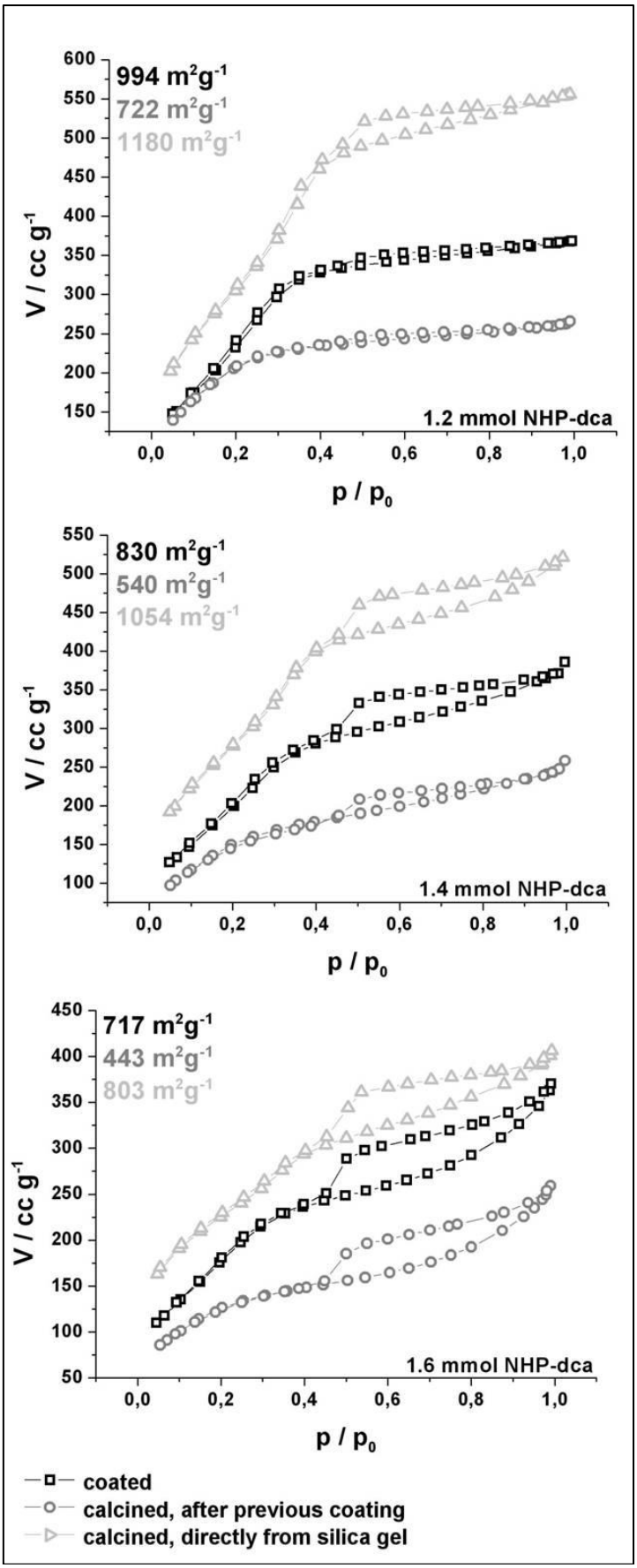

Fig. S 7: Isotherms of all composite and pure silica materials, synthesised with different amounts of NHP-dca

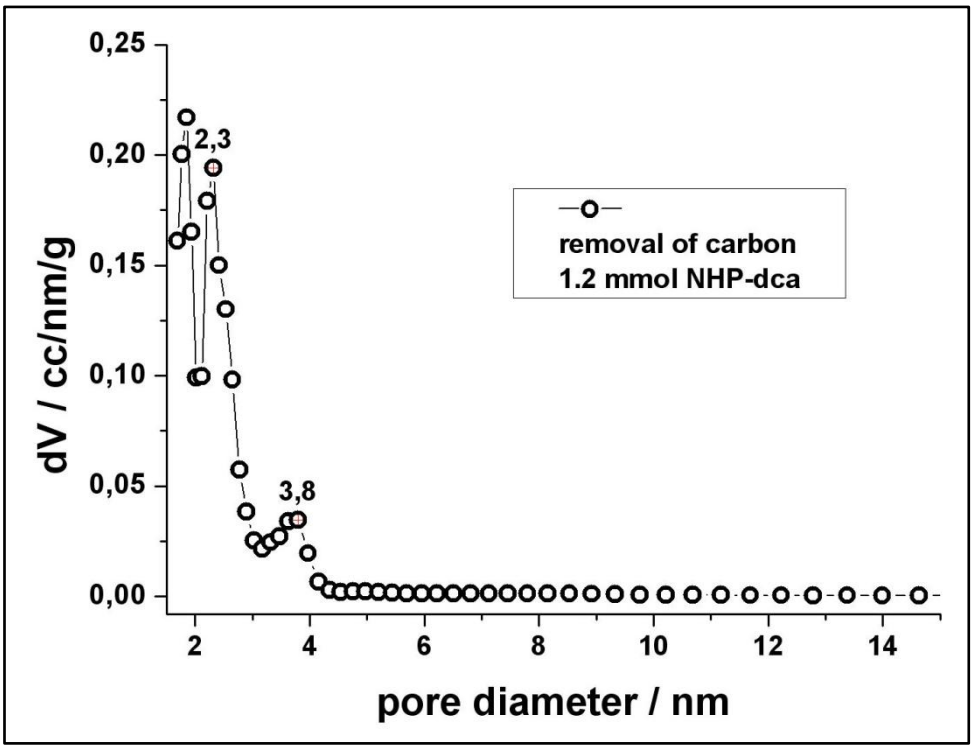

Fig. S 8: NLDFT pore size distribution of silica after removal of carbon by calcination under air (1.2 mmol NHP-dca)

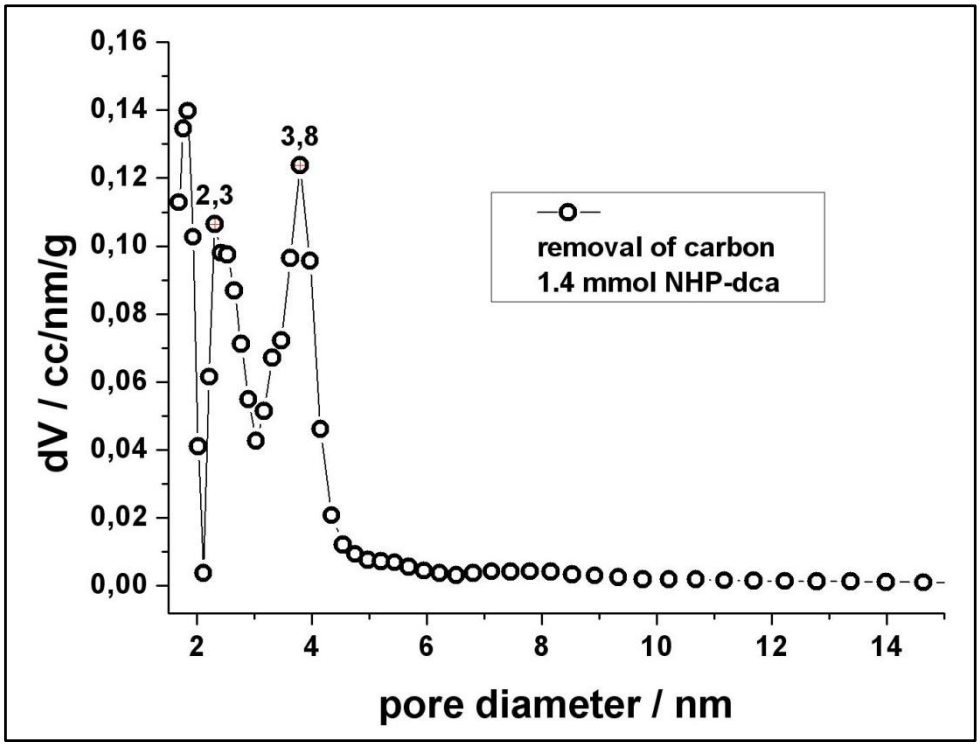

Fig. S 9: NLDFT pore size distribution of silica after removal of carbon by calcination under air (1.4 mmol NHP-dca)

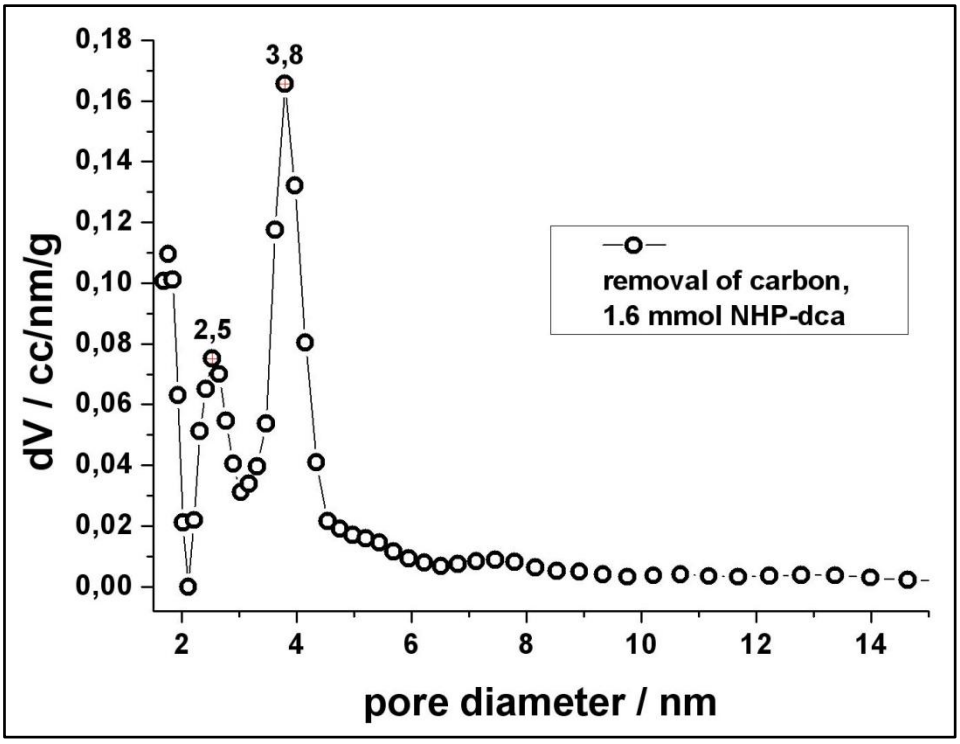

Fig. S 10: NLDFT pore size distribution of silica after removal of carbon by calcination under air (1.6 mmol NHP-dca)

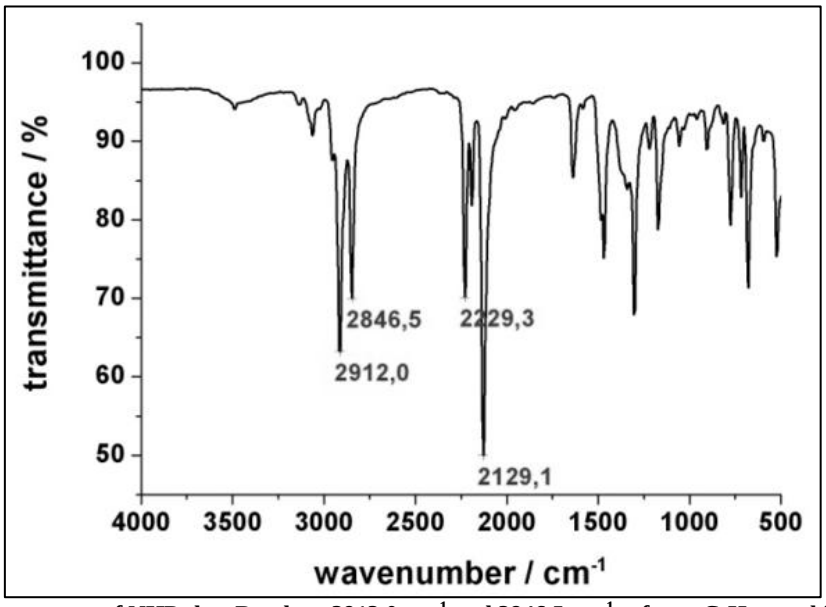

Fig. S 11: FTIR-spectrum of NHP-dca. Bands at 2912.0 cm^{-1} and 2846.5 cm^{-1} refer to C-H stretching modes in the cation, bands at 2229.3 cm^{-1} and 2129.1 cm^{-1} refer to C≡N stretching mode of the dicyanamide anion.