Electronic Supplementary Material (ESI) for Journal of Materials Chemistry C.

Supporting Information

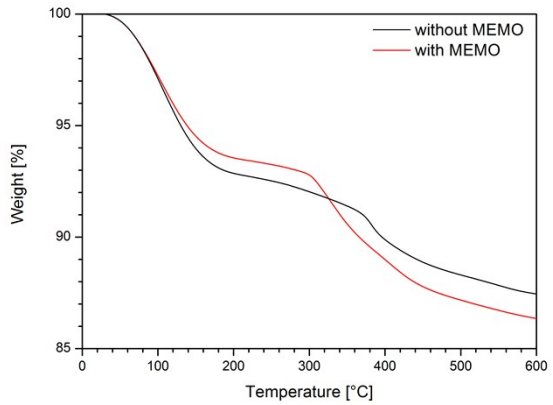

Fig. S1. TGA of the silica core particles without MEMO functionalization (black) and MEMO-functionalized silica particles (red curve). The additional MEMO content was determined after heating the samples at 600°C for additional 30 minutes to be 1.12 wt%.

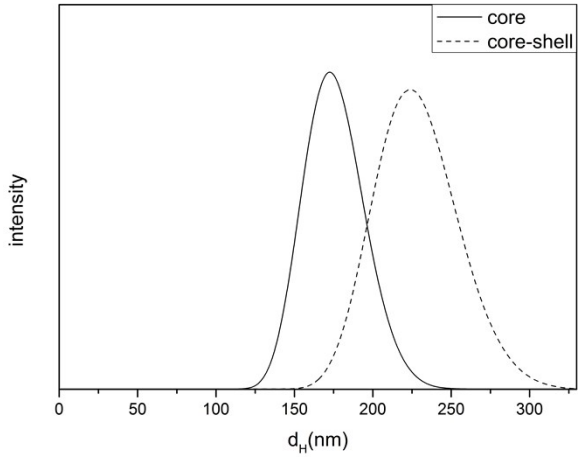

Fig. S2. DLS investigations of the particles to determine the hydrodynamic diameters and size distributions of the silica core and silica@PSAN core-shell particles.

Table S1. Comparison of average particle diameters obtained by TEM (d_{TEM}) and DLS (d_{DLS}) measurements for silica and silica@PSAN particles.

Sample[a)]	d_{TEM}[a)] [nm]	d_{DLS}[b)] [nm]
silica	169 ± 5	172 ± 18
silica@PSAN	-	222 ± 24

[a)]Average particle diameter and standard deviation were determined by taken the mean for at least 200 particles out of the TEM images; [b)]Average sphere diameter and standard deviation were determined at the maximum of the logarithmic probability density of the particle size distribution.

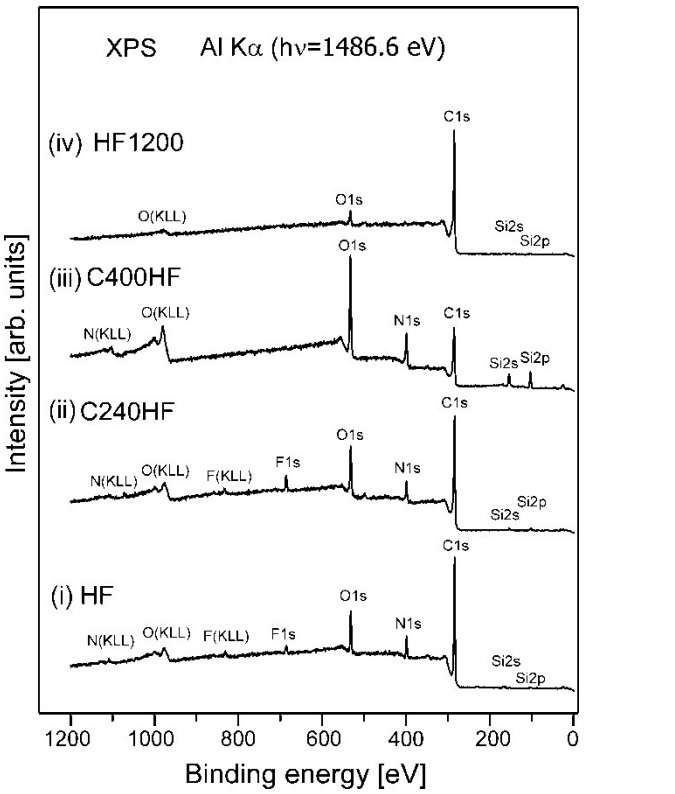

Fig. S3. XPS survey spectra of the precursor materials: (i) original melt-sheared particle film without thermal treatment (bottom), (ii) particle film after thermal treatment at 240 °C and etching (middle), (iii) particle films after thermal treatment at 400 °C (top), and particle film after thermal treatment at 1200 °C.

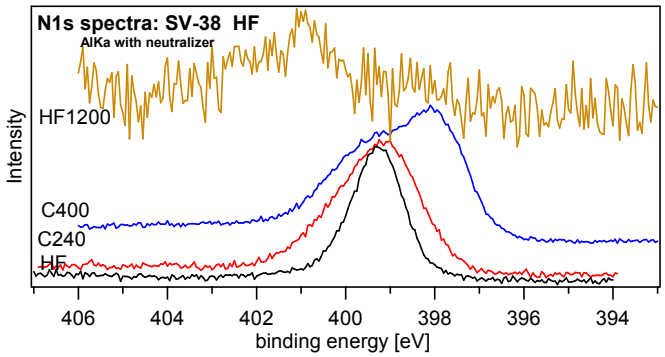

Fig. S4. The evolution of the N1s photoelectron spectrum as a function of thermal treatment of the precursor materials: (i) original melt-sheared particle film without thermal treatment (bottom), (ii) particle film after thermal treatment at 240 °C and etching (middle), (iii) particle films after thermal treatment at 400 °C (top), and particle film after thermal treatment at 1200 °C.

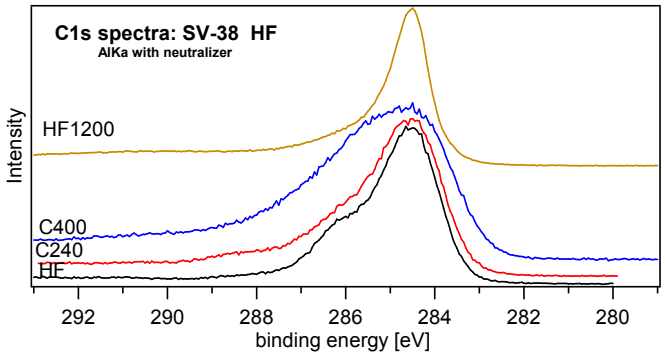

Fig. S5. The evolution of the C1s photoelectron spectrum of the precursor materials: (i) original melt-sheared particle film without thermal treatment (bottom), (ii) particle film after thermal treatment at 240 °C and etching (middle), (iii) particle films after thermal treatment at 400 °C (top), and particle film after thermal treatment at 1200 °C.

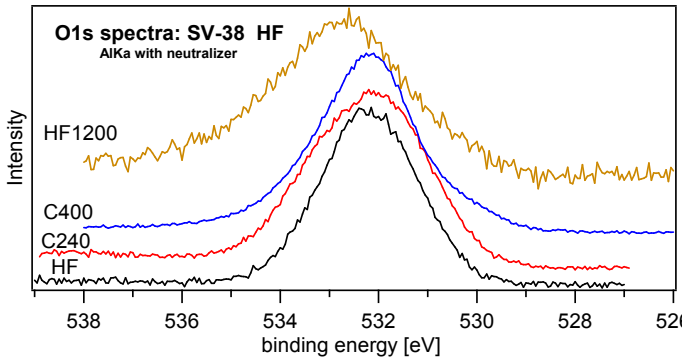

Fig. S6. The evolution of the O1s photoelectron spectrum of the precursor materials: (i) original melt-sheared particle film without thermal treatment (bottom), (ii) particle film after thermal treatment at 240 °C and etching (middle), (iii) particle films after thermal treatment at 400 °C (top), and particle film after thermal treatment at 1200 °C.

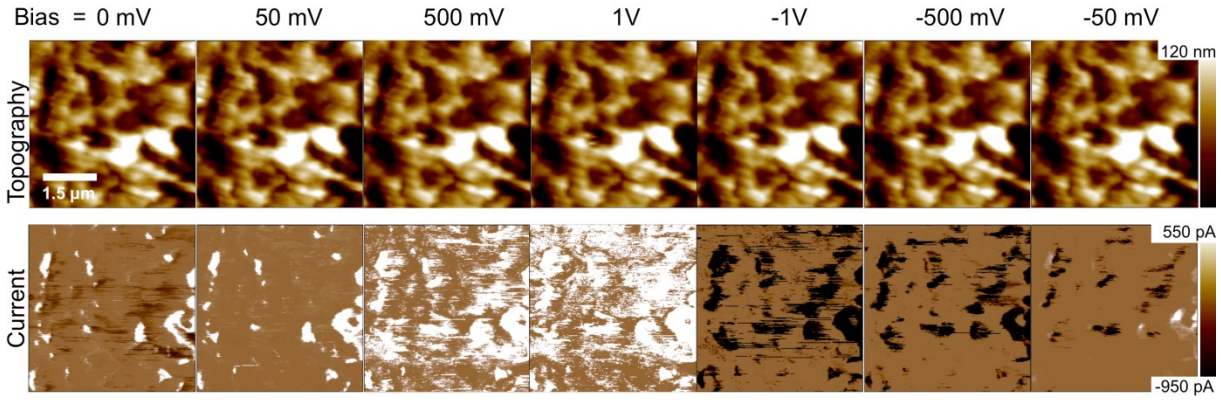

Fig. S7. (5 x 5) µm^2 topography (top row) and current maps (bottom row) on a melt-shear organized particle film thermally treated at 1500 °C at different sample potentials as obtained by using conductive AFM measurements.

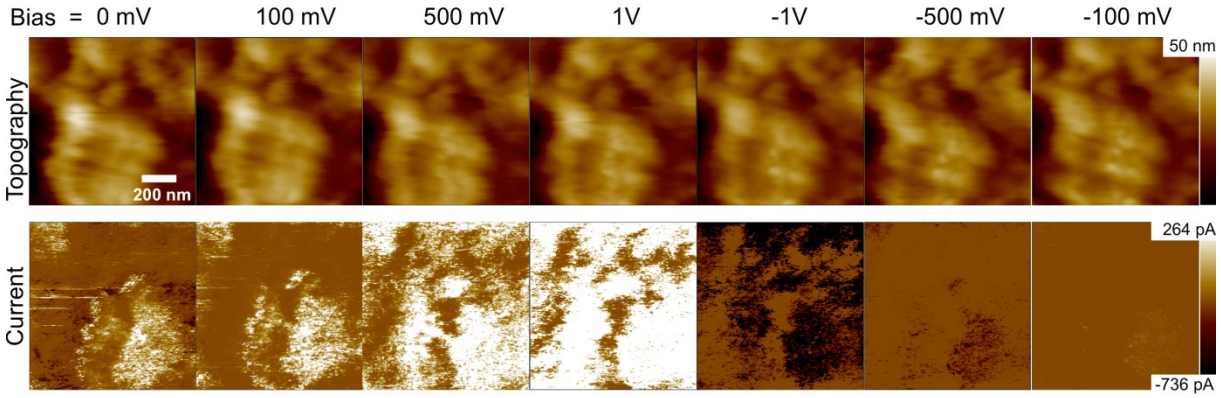

Fig. S8. High-resolution (1 x 1) µm^2 topography (top row) and current maps (bottom row) on a melt-shear organized particle film thermally treated at 1500 °C at different sample potentials at a different sample position as obtained by using conductive AFM measurements.