Surface patterning with SiO$_2$@PNiPAm core-shell particles

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Supporting Information:

Table S1 Respective amounts used for batch reaction.

	Crosslinking density (BIS)	n(BIS)	m(BIS)	V(H$_2$O)	m(Silica dispersion)
	[mol%]	[mmol]	[mg]	[mL]	[g]
JT049b-S9	5	$1.25 \cdot 10^{-1}$	19.3	45	3.767
JT049b-S3	5	$1.25 \cdot 10^{-1}$	19.3	46	2.852
JT049b-S1	5	$1.25 \cdot 10^{-1}$	19.3	45	3.767
JT049b-S7	2.5	$6.25 \cdot 10^{-2}$	9.636	45	3.767
JT049b-S8	10	$2.5 \cdot 10^{-1}$	38.543	45	3.767

Table S2 Amounts of reagents used for semi-batch reaction for further shell growth.

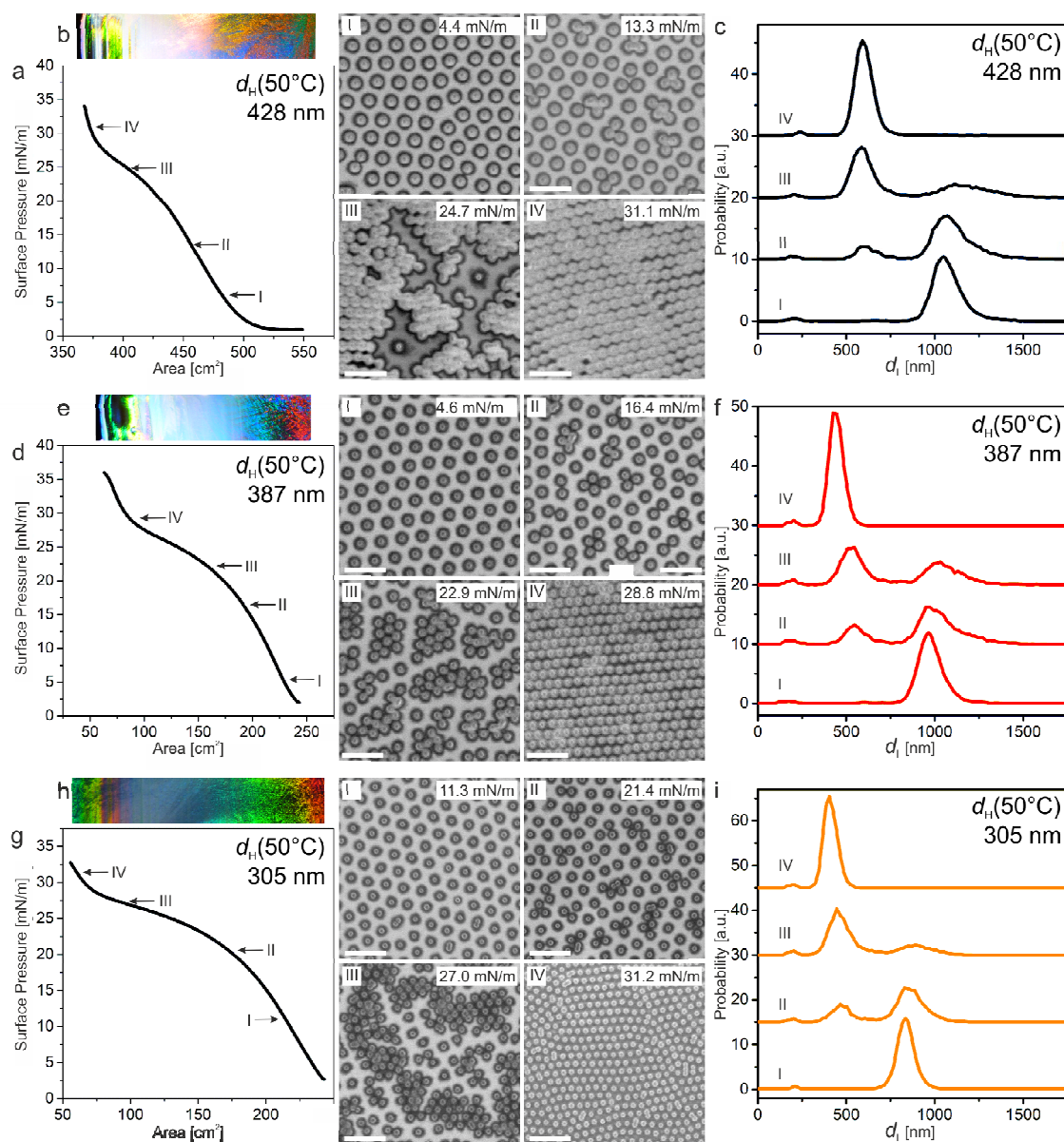|	Crosslinking density (BIS)	m (BIS)	c (NiPAm)	V(H$_2$O)	n(NiPAm)	m(NiPAm)
	[mol%]	[mg]	[mmol/mL]	[mL]	[mmol]	[mg]
JT049b-S9	5	43.9	2	2.85	5.7	645
JT049b-S3	5	63.4	2	4.5	9	1018
JT049b-S1	5	19.27	2	9	18	2037
JT049b-S7	2.5	69.377	2	9	18	2037
JT049b-S8	10	277.506	2	9	18	2037

Figure S1: Influence of shell thickness on the phase diagram of SiO$_2$@PNiPAm core-shell particles: a-g) d_H(50 °C) = 428 nm, h-n) d_H(50 °C) = 387 nm, o-u) d_H(50 °C) = 305 nm. a,d,g) Surface pressure – area isotherm. b,e,h) Optical image of the deposited silicon wafer. The regions correspond to the compression isotherm in (a,d,g), displaying the structural colors of the hexagonal non-close packed and close packed phase connected by the whitish phase transition region. The Roman numbers label representative SEM images of the observed

phases. Scale bar: 2 µm. c,f,i) Interparticle distance distribution of the different phases labelled by the Roman numbers showing the nucleation of a second hexagonal phase.