

Electronic Supplementary Information

Figure S1. Overlay of the ¹H NMR spectra (CDCl₃ at 25 °C) of some representative *N*VCL-based statistical copolymers prepared by CMRP.

	In copolymer		T _{CP}	T _{CP}
М	(mol%)		upon heating	upon cooling
_	М	NVCL	(°C)	(°C)
NMVA	10	90	43.3	41.0
	19	81	50.6	48.2
	29	71	57.0	54.9
	37	63	66.9	64.8
NVA	9	91	42.2	39.3
	22	78	47.5	44.7
	24	76	49.3	46.8
	32	68	53.7	50.9
	45	55	63.5	60.5
	57	43	80.7	78.5
VAc	11	89	35.9	33.5
	15	85	35.0	32.9
	27	73	30.6	28.5
	31	69	27.1	25.0
	40	60	22.2	20.2
	45	55	19.4	17.4
VPi	7	93	32.6	30.6
	10	90	29.8	27.5
	14	86	27.1	24.6
	23	77	20.8	17.7

Table S1. Phase transition temperatures of the *N*VCL-based statistical copolymers in aqueous solutions (1 g/L) measured by turbidimetry upon heating and cooling (1 °C/min).



Figure S2. SEC chromatograms in DMF/LiBr (calibration PMMA) for the statistical copolymerization of *N*VCL and *N*MVA (40/60:*N*VCL/*N*MVA) initiated in bulk at 40 °C from a P*N*VCL-Co(acac)₂ macroinitiator.



Figure S3. CONTIN size distribution of the $PNVCL_{315}$ -*block*- $P(NMVA_{215}$ -*stat*- $NVCL_{143}$) copolymer in water (1 g/L) at various temperatures. At 30°C, the sample mainly consists in free chains. Indeed, the population at 100 nm is absent from the number distribution graph.



Figure S4. Transition electron microscopy image after spin-coating deposition on a copper grid with formvar of a drop of the $PNVCL_{315}$ -*block*- $P(NMVA_{215}$ -*stat*- $NVCL_{143})$ (NMVA content in the second block = 60 mol%) aqueous solution (1 g/L) thermostated at 60 °C.



Figure S5. Repeated heating-cooling cycles for the $PNVCL_{315}$ -block- $P(NMVA_{215}$ -stat- $NVCL_{143}$) in water (1 g/L). (a) Transmittance curves recorded at a heating and cooling rate of 1 °C/min. (b) CONTIN size distribution of the copolymer during the second cycle at 40°C and 50°C.



Figure S6. Transmittance curve for the $PNVCL_{252}$ -block- $P(NMVA_{85}$ -stat- $NVCL_{127})$ (M_n _{MALLS} = 56000 g/mol, M_w/M_n = 1.13) aqueous solution (1 g/L) recorded at a heating rate of 1 °C/min.