

Electronic supplementary information (ESI)†

Temperature- and pH-responsive poly(N-isopropylacrylamide-co-methacrylic acid) microgels as a carrier for controlled protein adsorption and release

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Table S1 Reaction compositions for the synthesis of microgels

Code	NIPAM: BIS: MAA (mol%)	NIPAM (gm)	BIS (gm)	MAA (gm)
M1	87.5: 2.5: 10	1.504	0.058	0.130
M2	85: 5: 10	1.461	0.117	0.130
M3	80: 10: 10	1.374	0.234	0.130

Table S2 Hydrodynamic radius, polydispersity and VPTT* of the microgels

Code	pH	$R_h^{20^\circ c}$ (nm)	$PDI^{20^\circ c}$	$R_h^{60^\circ c}$ (nm)	$PDI^{60^\circ c}$	VPTT (°C)
M1	4	468.9	0.061	198.6	0.102	37.3
	9	603.3	0.11	280	0.156	37.1
M2	4	429.5	0.040	187.43	0.135	36.9
	9	518.7	0.077	276.4	0.181	37.4
M3	4	391.2	0.023	185.23	0.119	37.2
	9	459.1	0.087	267	0.166	36.8

* The VPTT was determined from the second derivative plot of the hydrodynamic radius with respect to temperature (d^2R_h/dT^2) vs temperature (T). The temperature at which $d^2R_h/dT^2 = 0$ corresponded the VPTT of microgels.

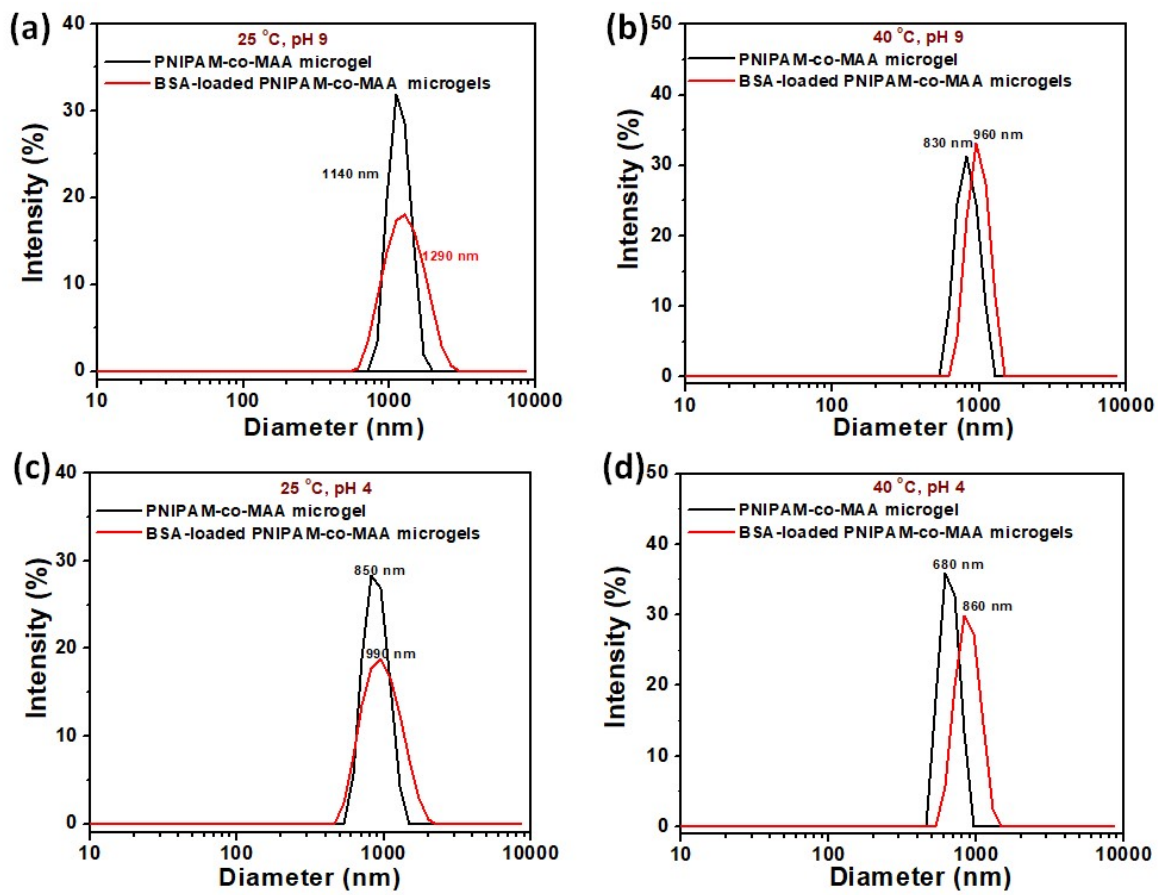


Fig. S1 Intensity size distribution comparison of BSA-loaded PNIPAM-co-MAA microgels (2.5% BIS) with pure PNIPAM-co-MAA microgels at 40 °C.

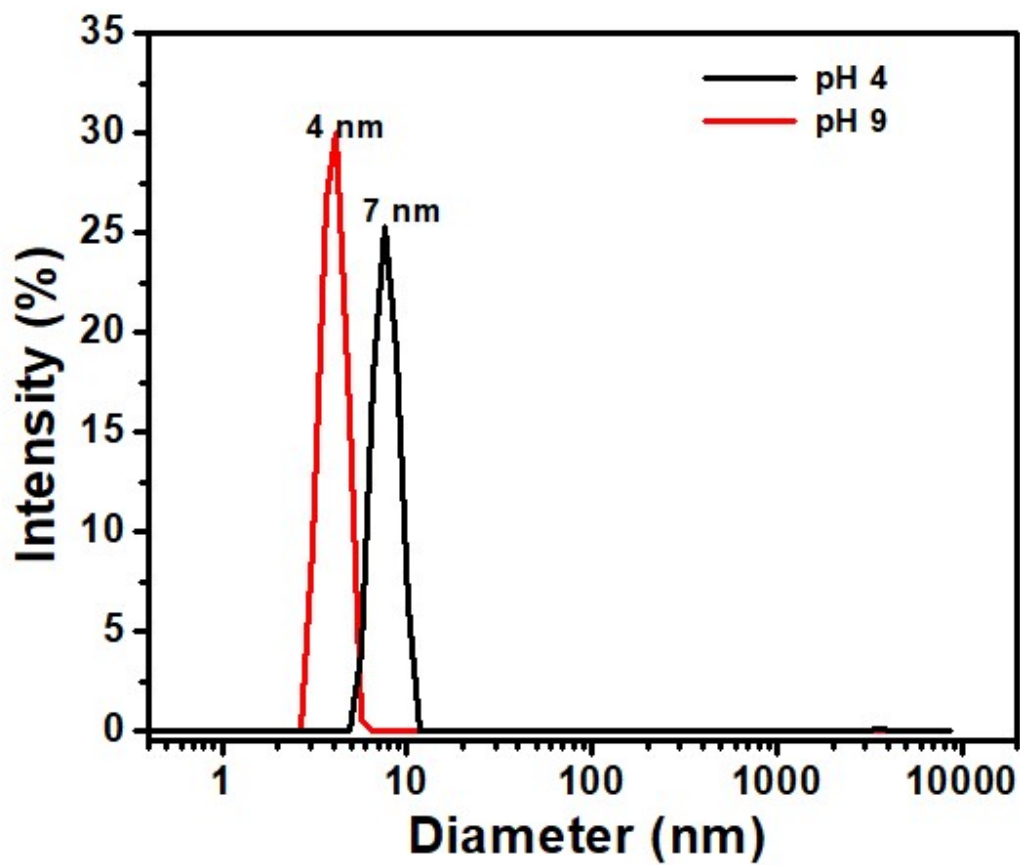


Fig. S2 Intensity Size distribution obtained for BSA molecule from DLS measurement at pH 4 and pH 9 (25 °C).

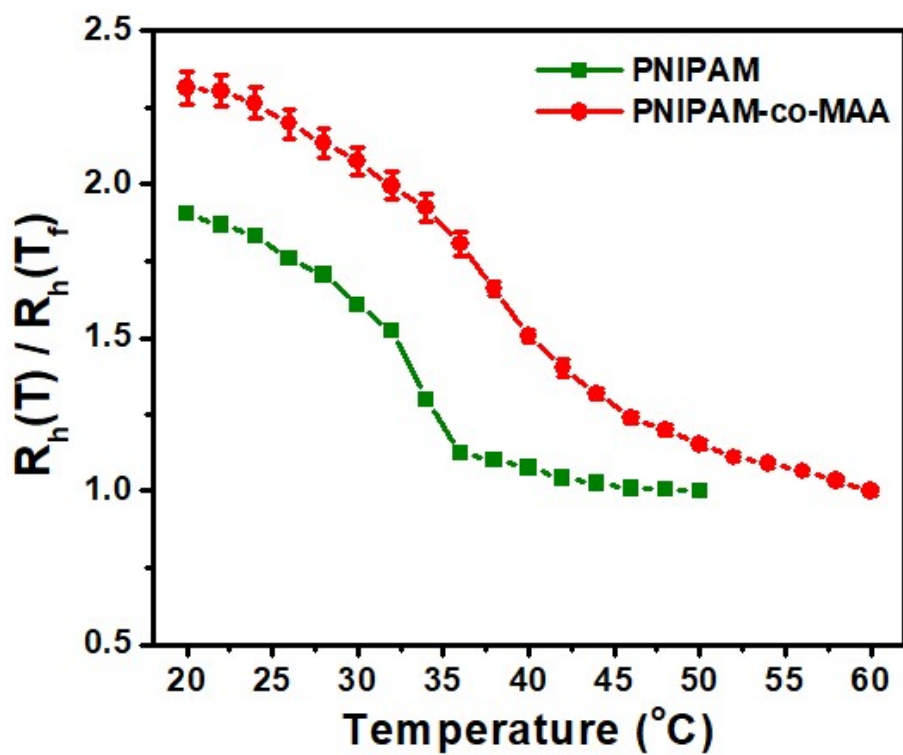


Fig. S3 Normalized hydrodynamic radius as a function of temperature of PNIPAM and PNIPAM-co-MAA microgels (5 mol% BIS) measured at pH 7.