Supporting Information

Shape Memory Hierarchical AB Copolymer Networks

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Fig. S1 ¹H NMR of the as-prepared F127-DA



Fig. S2 FT-IR spectrum of the PF127 and as-prepared PF127-DA



Fig. S3 Particle size and distribution of PF127 (left) and PF127-DA (right) micelles at the concentration of 0.05 g/ml and 50 °C



Fig. S4 Particle size and distribution of PF127-DA micelles at the concentration of 0.05 g/ml in aqueous solution (left) and at the concentration of 0.05 g/ml in aqueous solution containing a small amount of Irgacure 2959 and 6 ml of HEA and AA (right) at 50 °C, respectively.



Fig. S5 The appearance of formulation solution composed of 0.05 g/ml PF127-DA, a small amount of Irgacure 2959, and 6 ml of HEA and AA at 50 °C



Fig. S6 SEM photographs of the bulk morphology for HAB-CPNs (A, B), AB-CPNs (C) and SEMI-IPNs (D)



Fig. S7 Stress relaxation and recovery curves of HAB-CPNs at a monomer



concentration of 7.87 mol/L

Fig. S8 Stress relaxation and recovery curves of HAB-CPNs at a monomer concentration of 3.93 mol/L



Fig.S9 Stress relaxation and recovery curves of HAB-CPNs at a monomer

concentration of 2.62 mol/L



Fig. S10 Stress relaxation and recovery curves of HAB-CPNs at a monomer concentration of 1.97 mol/L



Fig. S11 Stress relaxation and recovery curves of HAB-CPNs at a monomer concentration of 1.57 mol/L



Fig. S12 Typical free-strain recovery shape-memory effect of HAB-CNs at a monomer concentration of 7.87 mol/L



Fig. S13 Typical free-strain recovery shape-memory effect of HAB-CNs at a monomer concentration of 3.93 mol/L



Fig. S14 Typical free-strain recovery shape-memory effect of HAB-CNs at a monomer concentration of 2.62 mol/L



Fig. S15 Typical free-strain recovery shape-memory effect of HAB-CNs at a monomer concentration of 1.97 mol/L



Fig. S16 Typical free-strain recovery shape-memory effect of HAB-CNs at a monomer concentration of 1.57 mol/L

Monomer concentration (mol/L)	ε _n (%)	ε _m (%)	ε _u (%)	ε _p (%)	R _r (%)	R _f (%)	ε _{p(90)} (%)	t ₉₀ (min)	V _{r-90} (% min ⁻¹)
7.87	1.85	16.25	15.91	2.05	98.6	97.6	3.290	9.3	9.7
3.93	0.90	16.04	15.75	1.05	99.0	98.1	2.414	9.5	9.5
2.62	0.76	16.30	16.01	0.75	100.1	98.1	2.314	10.2	8.8
1.97	-0.18	17.45	17.22	0.66	95.2	98.7	1.583	12.4	7.3
1.57	0.24	6.40	6.17	0.51	95.6	96.3	0.856	34.5	2.6

Table S1 Shape memory properties of HAB-CPNs with different monomer

concentrations