Thermally Activated Reversible Shape Switch of Polymer Particles

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Support Information (SI):

Supplementary Figure captions:

Fig.S1. DSC curves of c-6A PEG, c-6A PEG-PCL with the M_w of each PCL arm of 1000 g mol^{-1}, 2000 g mol^{-1} and 3000 g mol^{-1}.

Fig.S2. TGA profiles of c-6A PEG-PCL(2000) immersed in 60℃ H_2O for 1 h before test.

Fig.S3. Series of photographs macroscopically showing the multiple shape-recovery process of the c-6A PEG-PCL(2000) at 0 ℃, 37 ℃, 39 ℃ and 42 ℃.

Fig.S4. Cross-linking degree versus cross-linking time.

Fig.S5. Size distribution of microspheres and micro-ellipsoids.

Fig.S6. The effect of stretching strength or degree of tensile on particle shape (AR ratio), and shape recovery ratio of microparticles.

Fig.S7. SEM images showing microscopically reversible shape memory recovery process of the particles.

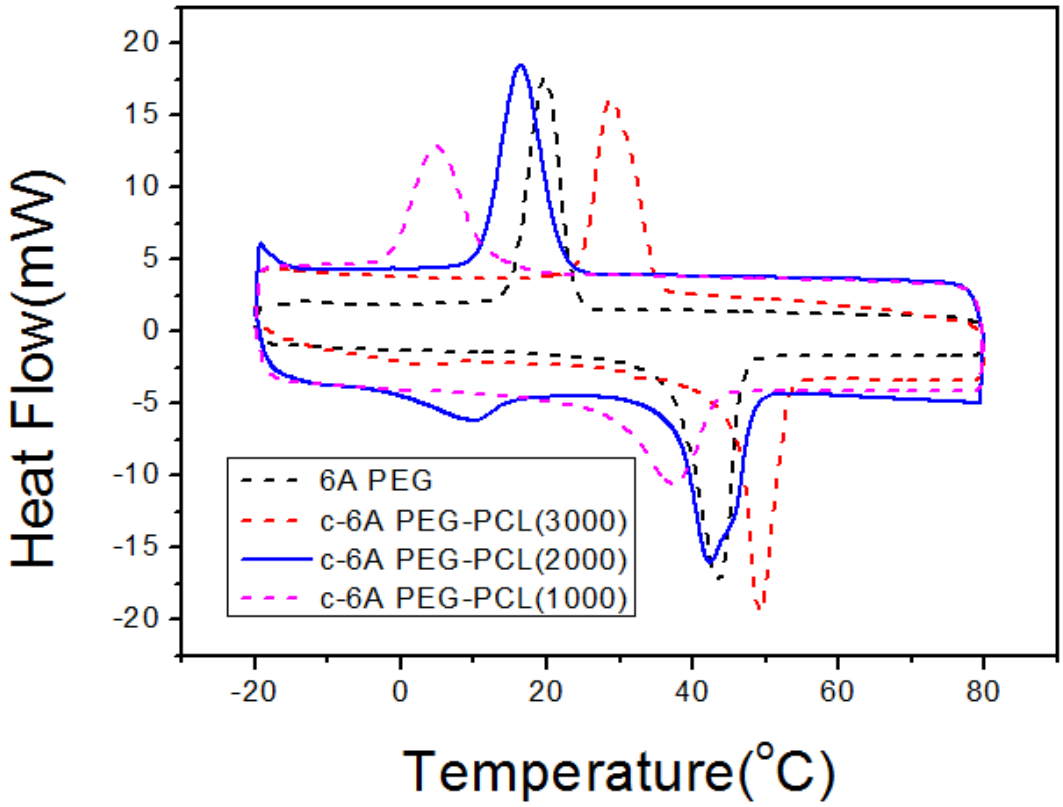
Fig. S8. Gel fraction, shape fixed ratio and shape recovery ratio of c-6A PEG-PCL with different ratio of 6A PEG-PCL to 6A PEG-PCL-AC.

Fig.S9. The effect of phagocytosis with microspheres and microellipsoids.

Movie S1. The reversible two-way shape memory recovery process.

Table S1: Characterization of the polymers

Samples	Rate of productivity	Hydroxyl Value(mg KOH/g)	$Mn_{NMR}(1\times10^4)$	$Mn_{GPC}(1\times10^4)$	$Mw_{GPC}(1\times10^4)$	Mw_{GPC}/Mn_{GPC}	PDI
6A PEG	---	54±3.2	0.6	0.73	0.78	1.06	1.12
6A PEG-PCL	87%	17.3±2.4	1.89	2.02	2.23	1.10	1.19
6A PEG-PCL-AC	85%	3±1.2	1.94	2.14	2.34	1.09	1.19



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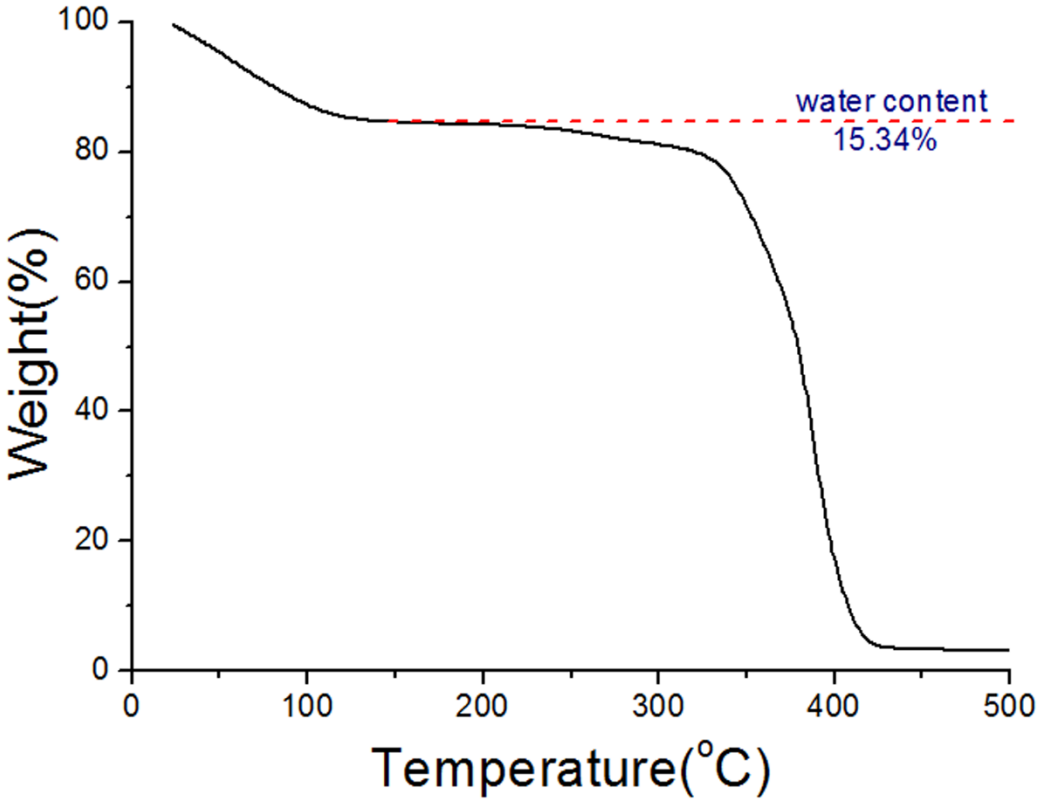
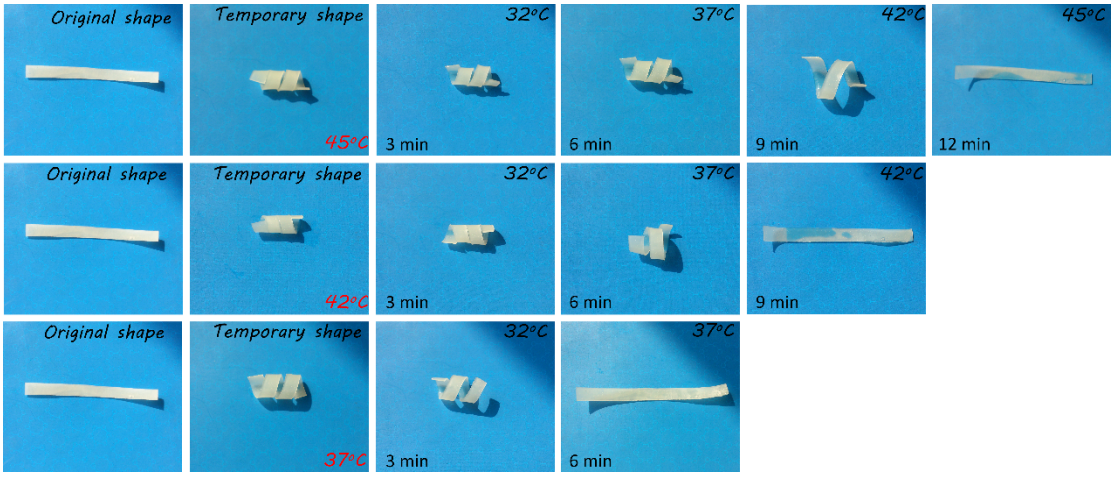


Fig.S2. TGA profiles of c-6A PEG-PCL(2000) immersed in 60℃ H_2O for 1 h before test.



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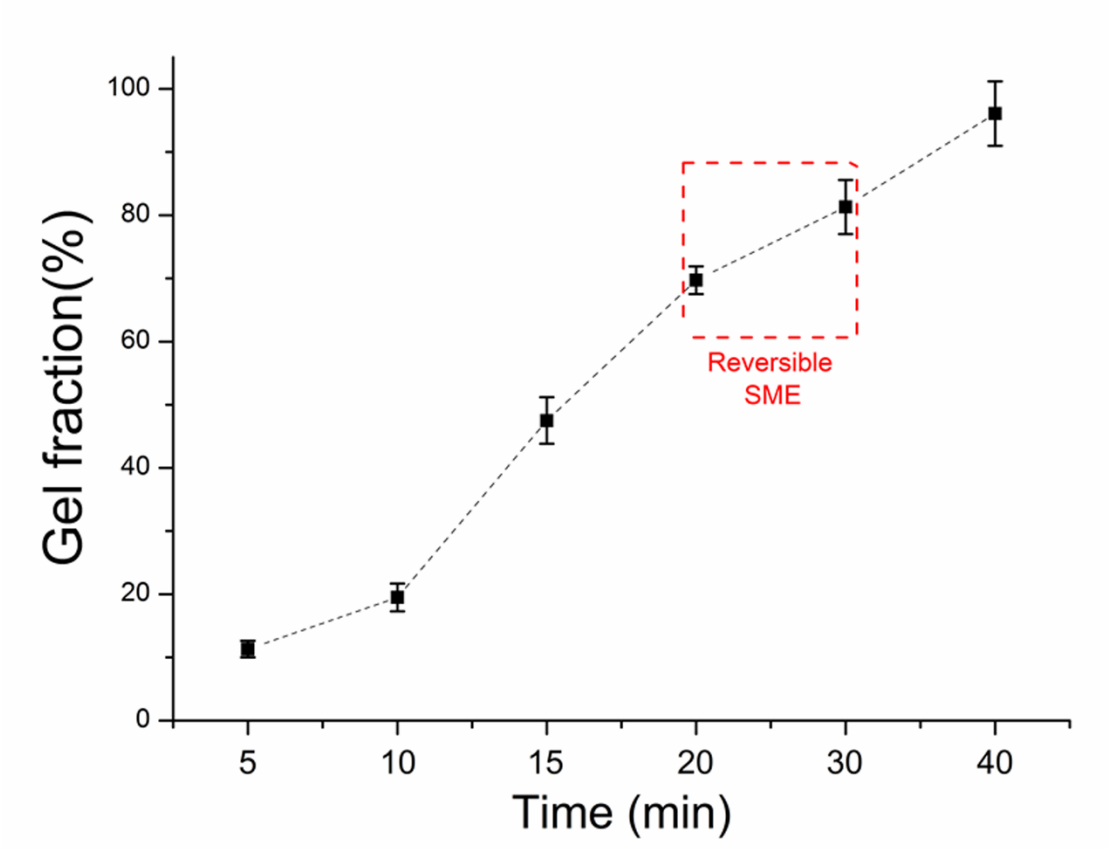

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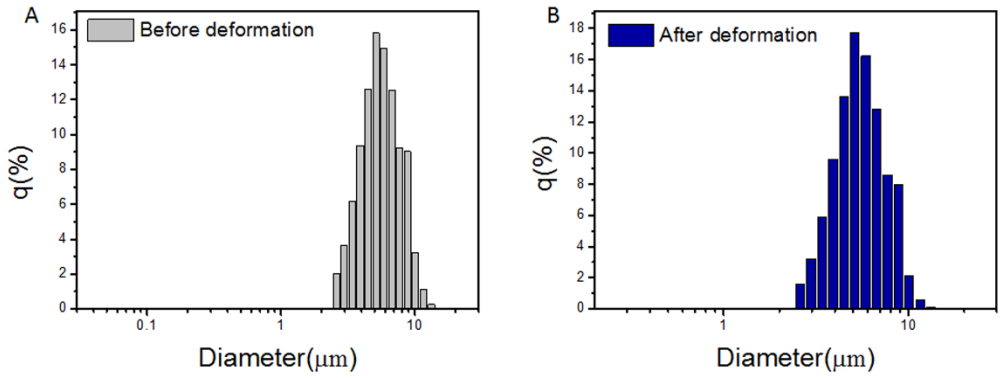
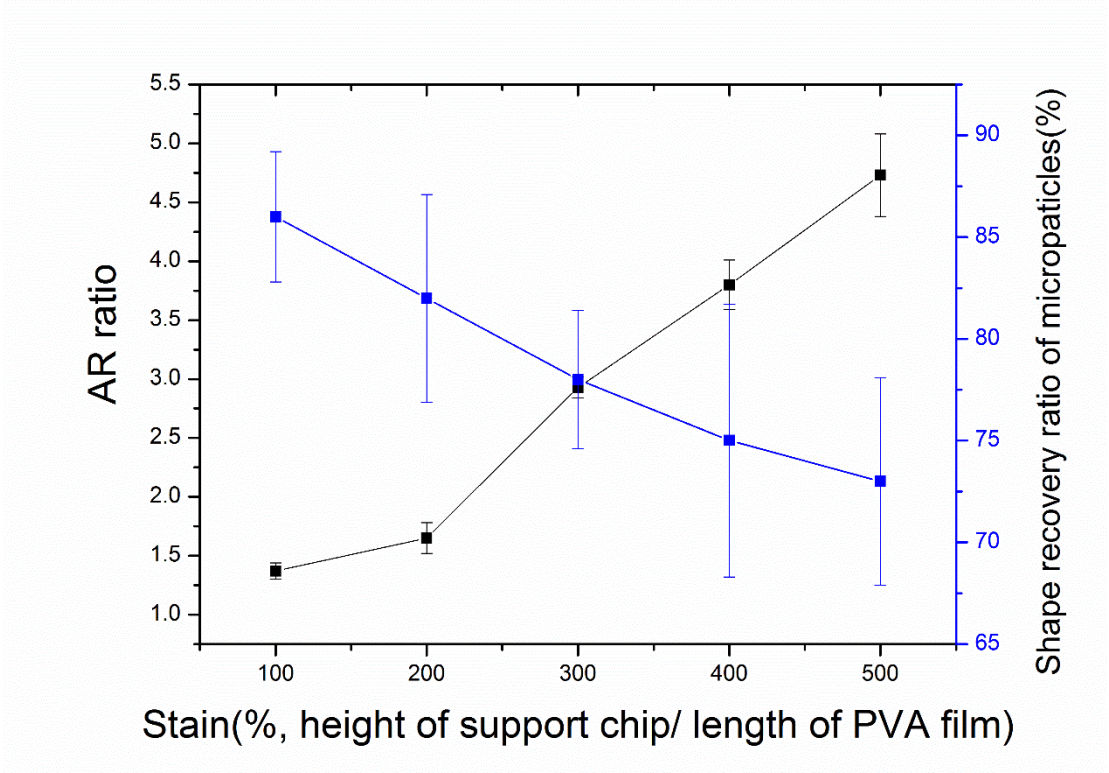


Fig.S5. Size distribution of microspheres and micro-ellipsoids.



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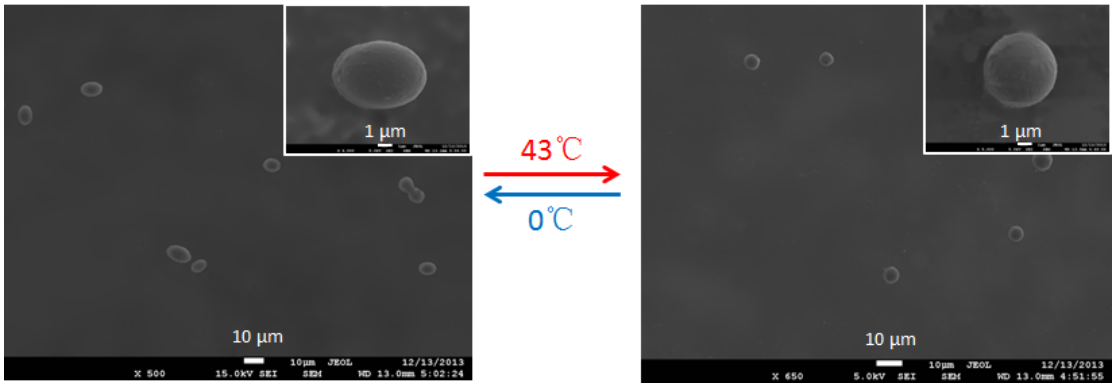

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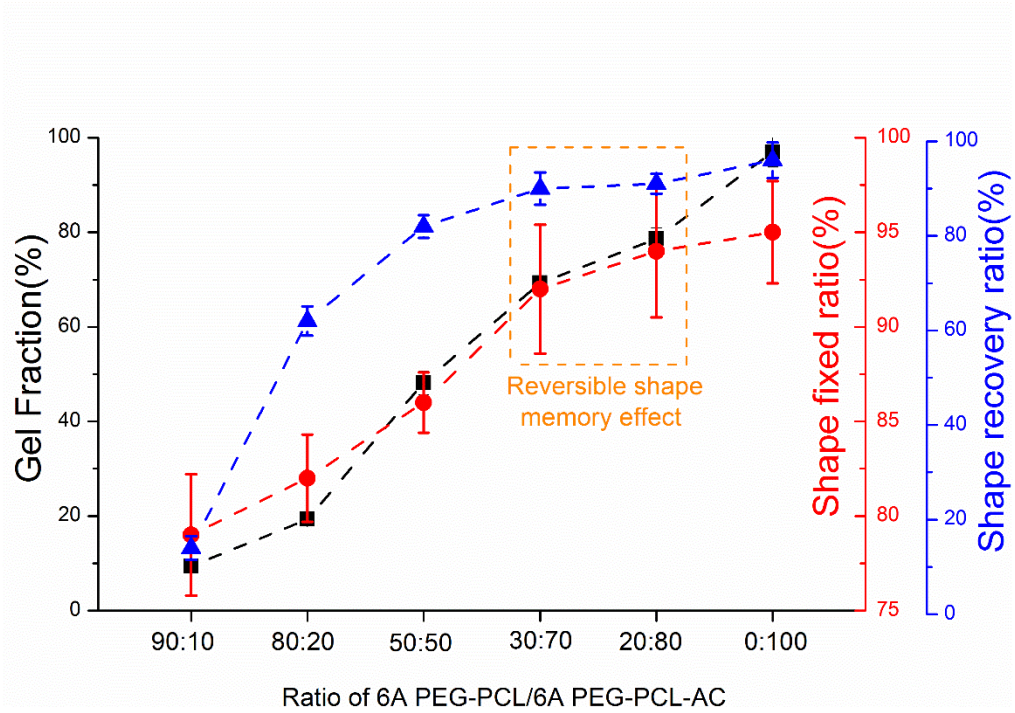

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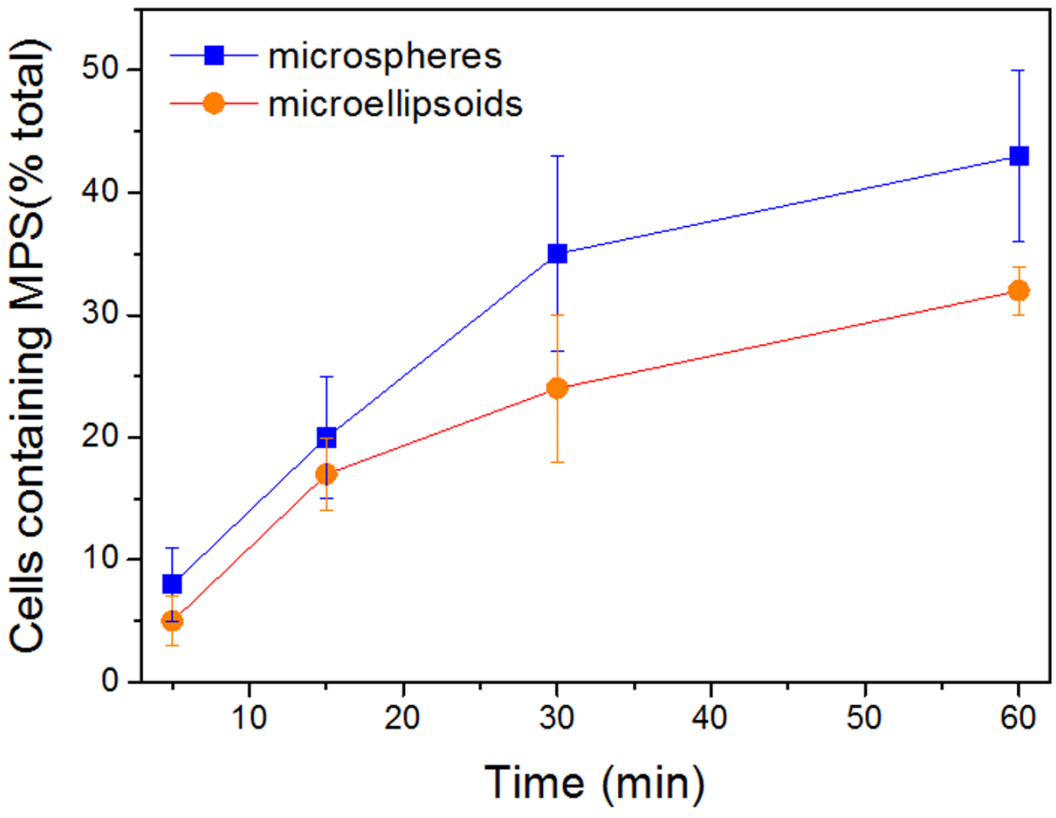

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