Electronic Supplementary Material (ESI) for Soft Matter.

Supporting Information

A simple, efficient route to modify properties of epoxy dynamic polymer networks

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Table S1 The compositions of epoxy DPNs and epoxy-ESO DPNs.

Samples	DGEBA(g)	AA(g)	ESO(g)	DA(g)	TBD(sum, g)[a]
Epoxy DPNs	3.404	1.461	0	0	0.139
Epoxy-ESO-5	3.404	1.461	0.170	0.083	0.144
Epoxy-ESO-7.5	3.404	1.461	0.255	0.125	0.146
Epoxy-ESO-10	3.404	1.461	0.340	0.166	0.149

[a] This mass is the sum of the addition amount of TBD in the epoxy (DGEBA) mixture and ESO mixture.

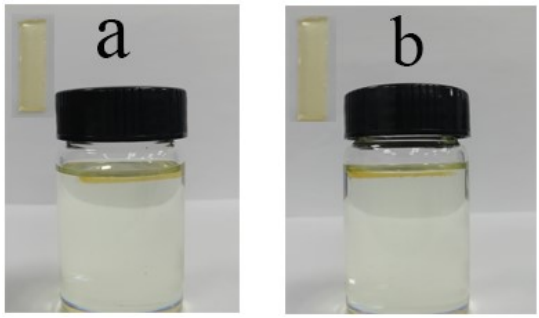

Fig. S1 Photos of epoxy-ESO-7.5 DPNs (a) before swelling and (b) after swelling in 1,2,4-trichlorobenzene at 50 ℃ for 48 h.

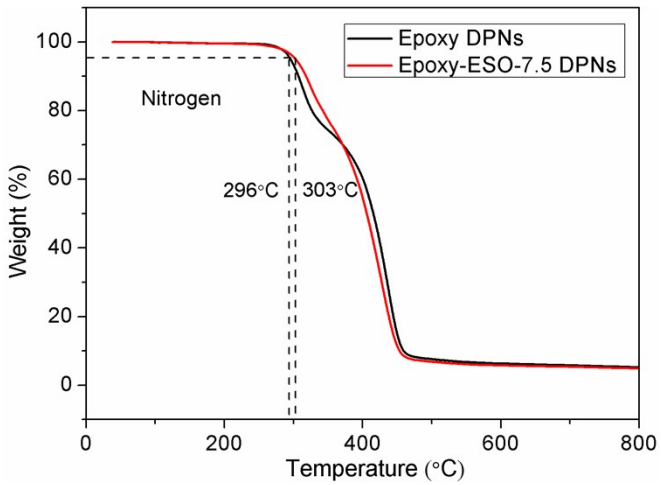

Fig. S2 TGA curves in a nitrogen atmosphere of pure epoxy DPNs and epoxy-ESO-7.5 DPNs.

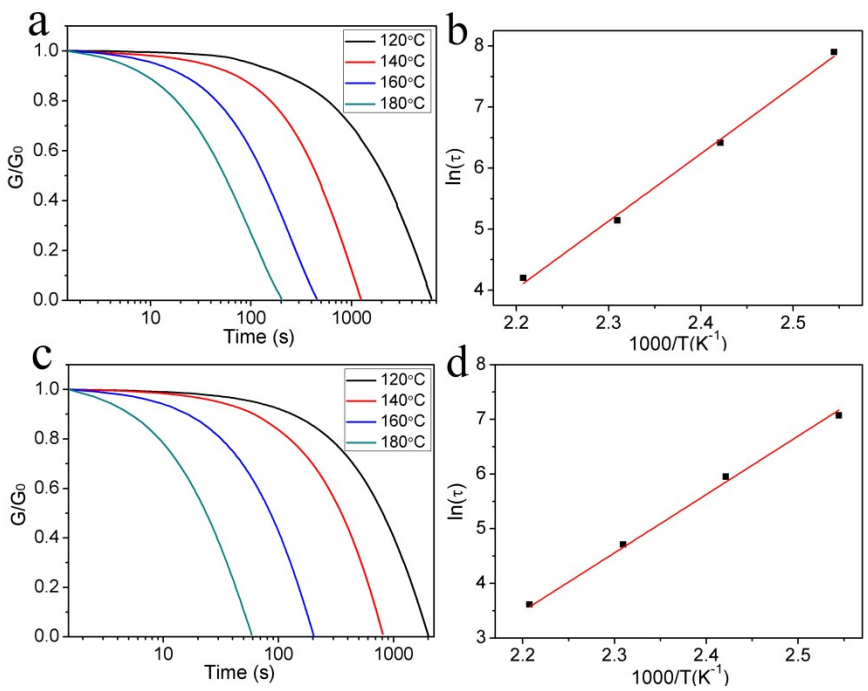

Fig. S3 Normalized stress–relaxation curves of (a) epoxy-ESO-5 DPNs and (c) epoxy-ESO-10 DPNs at different temperatures. The fitting of the relaxation times to the Arrhenius equation of (b) epoxy-ESO-5 DPNs and (d) epoxy-ESO-10 DPNs.

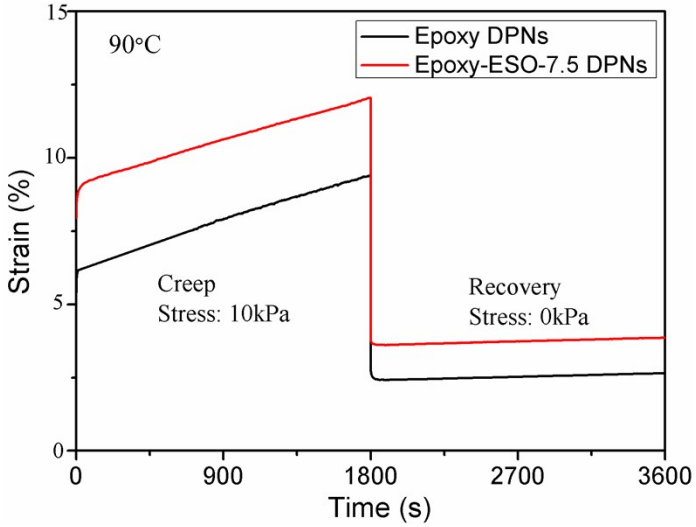

Fig. S4 Creep-recovery behavior of pure epoxy DPNs and epoxy-ESO-7.5 DPNs.

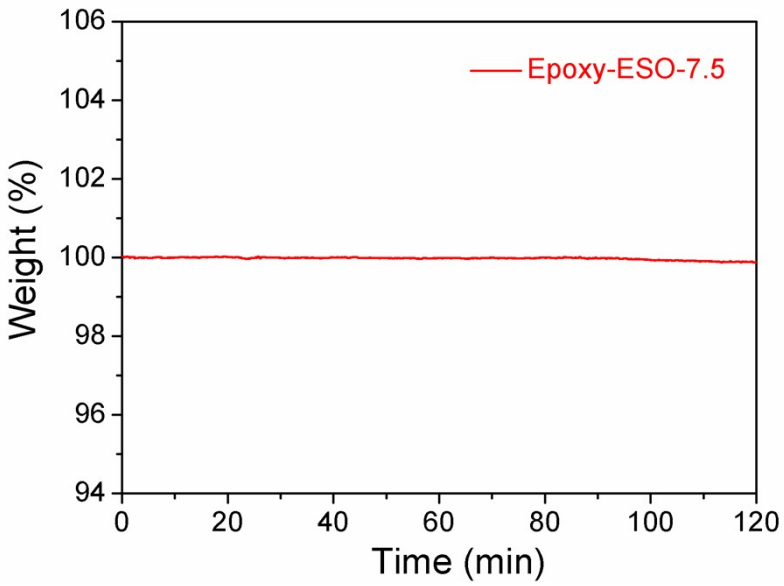

Fig. S5 TGA curve of the epoxy-ESO-7.5 DPNs at 130 ℃ for 120 min.

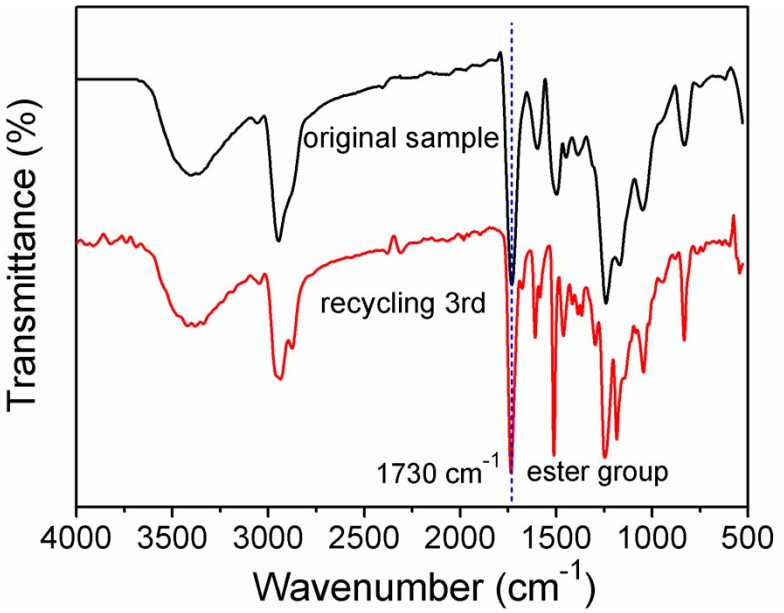

Fig. S6 FTIR spectra of original and recycled epoxy-ESO-7.5 DPNs after three reprocessing cycles.

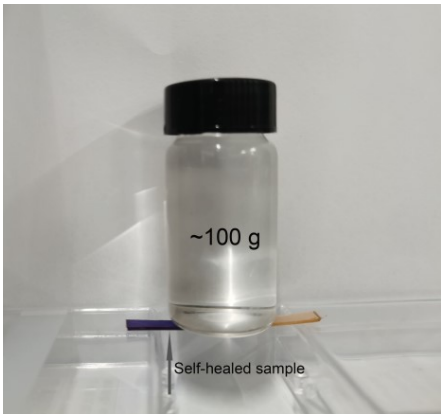

Fig. S7 The photo of epoxy-ESO-7.5 sample that can withstand a weight of 100 g after self-healing.