Supporting information

A Transparent Ionogel with Mechanical Robustness Enabled by Synergistic Noncovalent Interactions†

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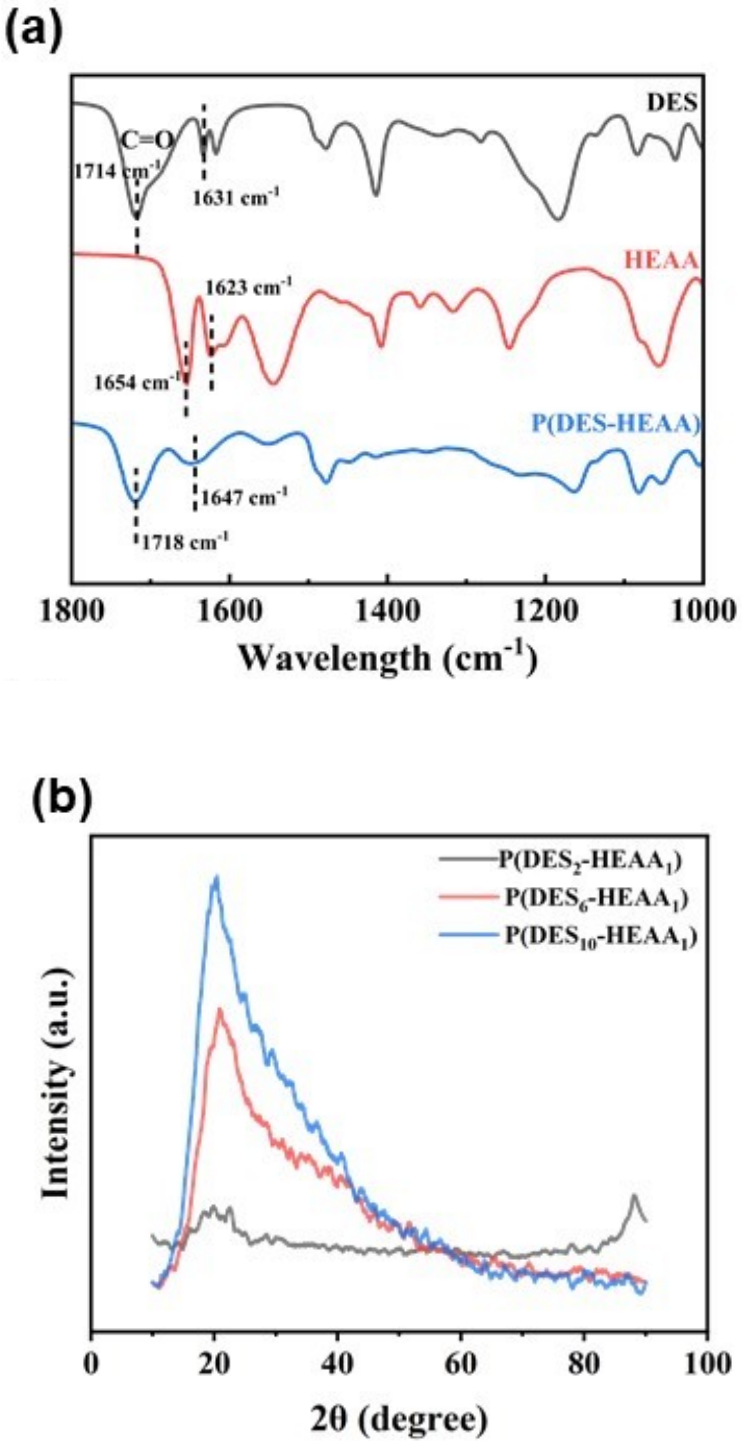

Fig. S1 P(DES-HEAA) elastomer: (a) infrared spectrum; (b) XRD patterns.

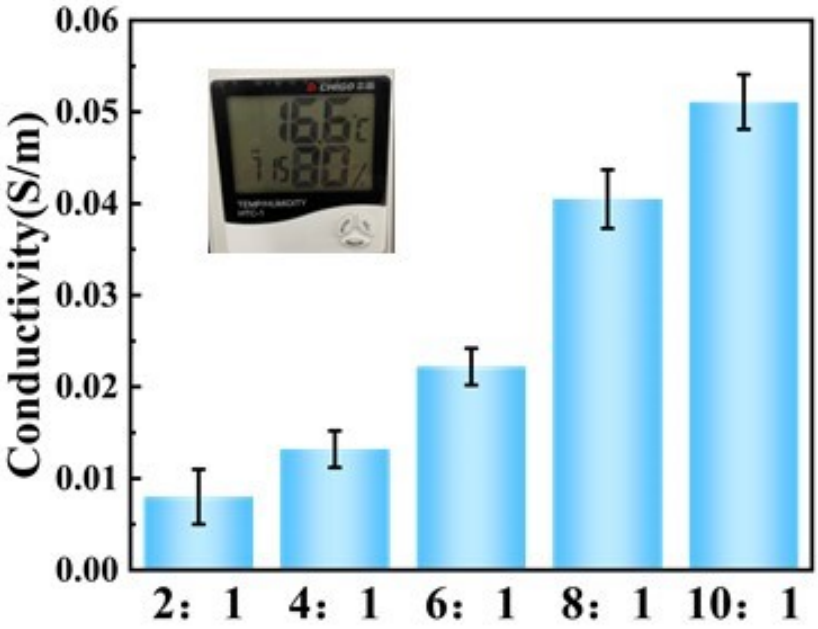

Fig. S2 Conductivity of P(DES-HEAA) elastomers with different proportions at 80% humidity.

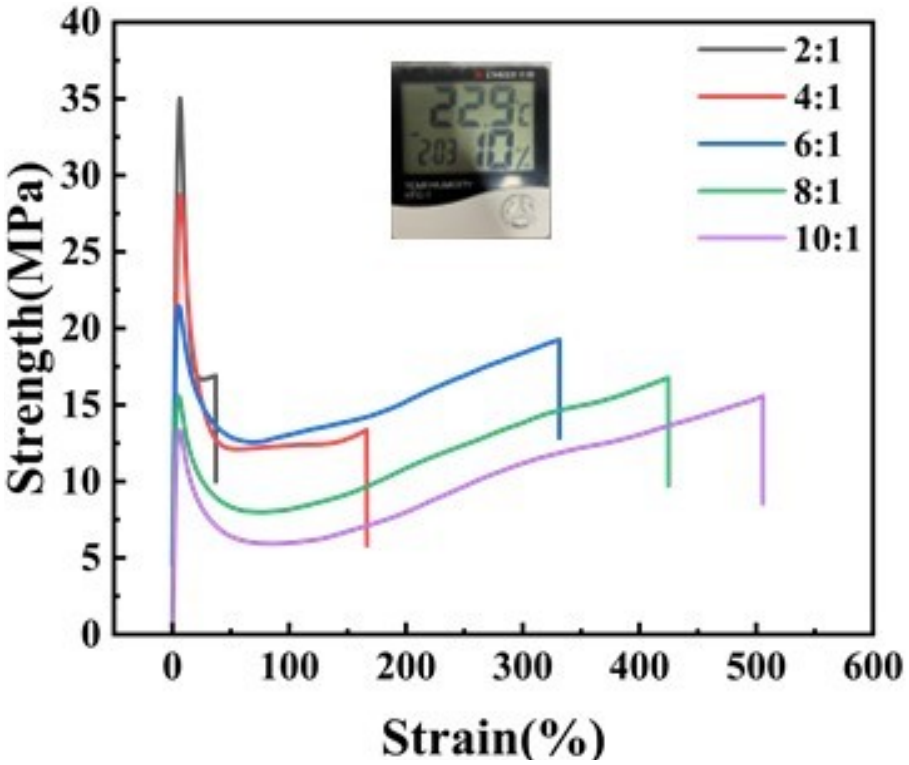

Fig. S3 Tensile stress–strain curves of different proportions of P(DES–HEAA) in the case of a humidity of 10%.

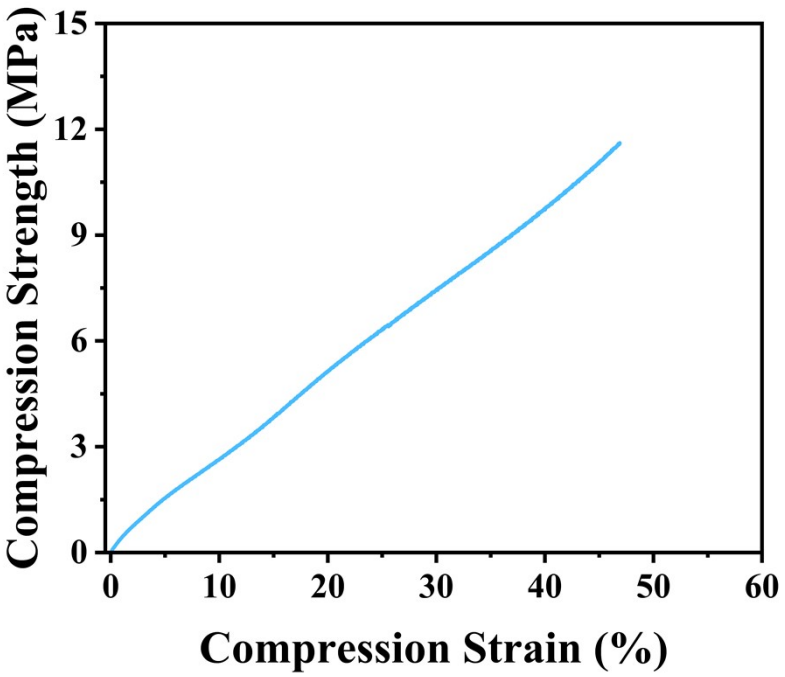

Fig. S4 Compressive stress–strain curves of P(DES_{10}--$HEAA_1$).

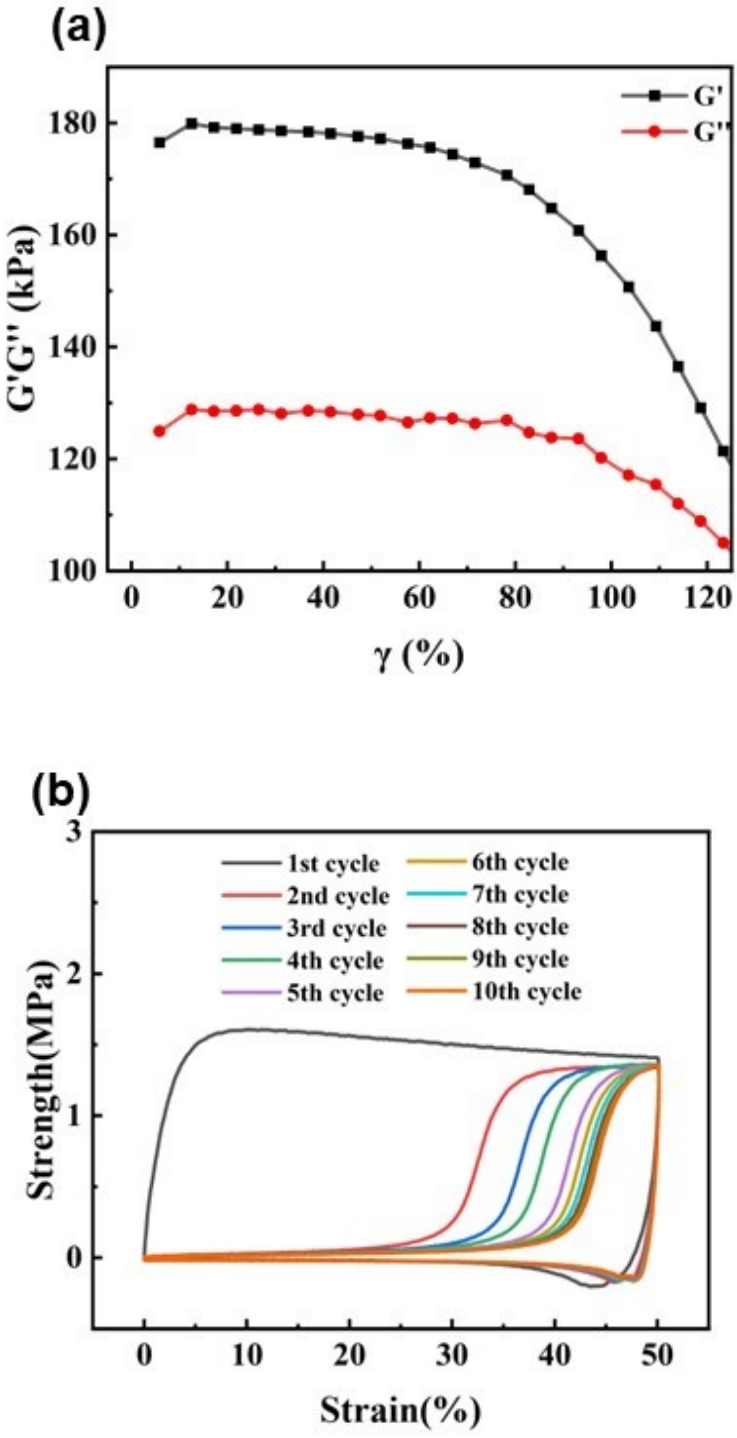

Fig. S5 P(DES$_6$-HEAA$_1$) elastomer: (a) strain scanning rheological diagram; (b) 10 cycles of loading–unloading at 50% strain.

Fig. S6 In the case of 100% strain, the resistance change of P(DES_6-$HEAA_1$) elastomer after 50 cycles.

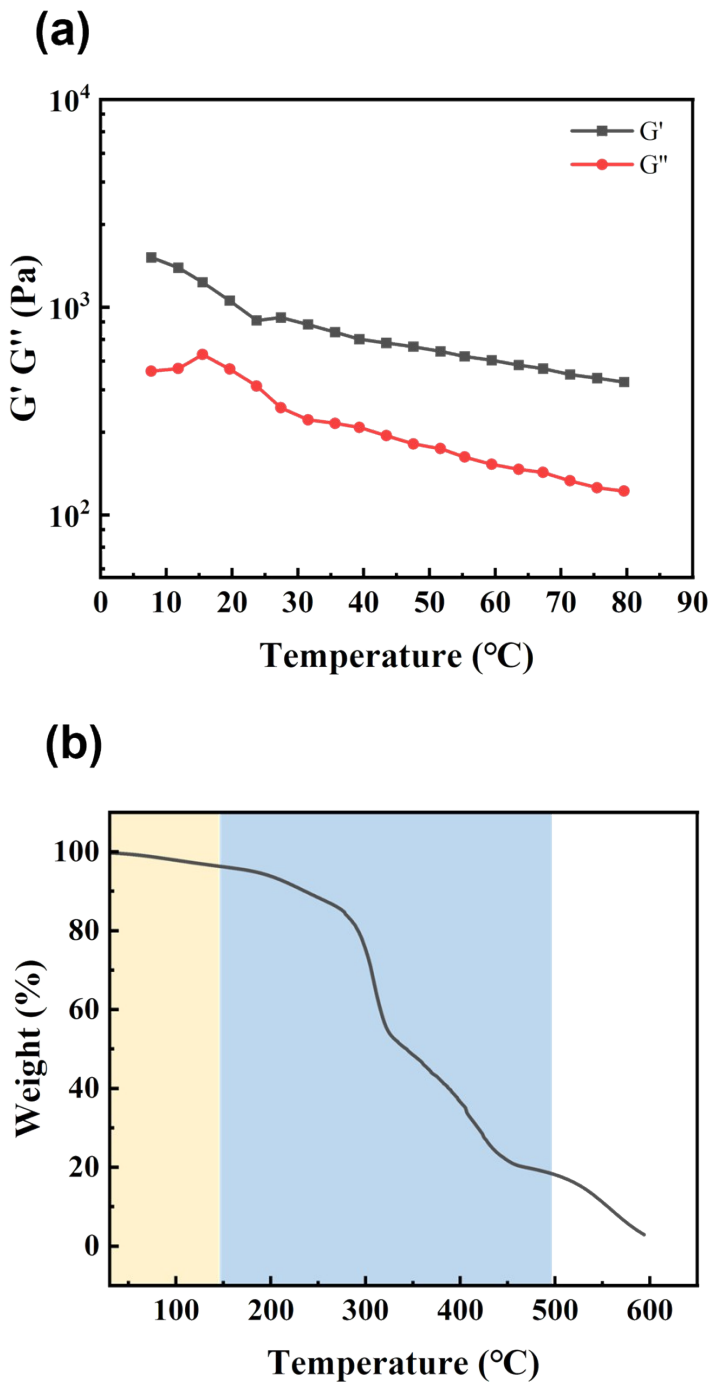

Fig. S7 P(DES_6-$HEAA_1$) elastomer: (a) fixed angular frequency of 10 rad s^{-1}, 0–80°C rheological curve; (b) TGA curve.

Fig. S8 TGA curve of elastomer modified fabric.

Table S1 Comparison of the tensile strengths of some reported elastomers based on AA/ChCl and the P(DES_2-$HEAA_1$) elastomer in this work

Type	Mechanical Property (Tensile strength)
This Work	~26.4 MPa
AA/ChCl-PA[1]	~0.44 MPa
AA/ChCl-IA[2]	~1.08 MPa
AA/ChCl-AMPS[3]	~5.7 MPa
AA/ChCl-DMA[4]	~9.27 MPa

Table S2 Comparison of the mechanical properties of this work with those of several reported high-performance elastomers

	Tensile strength	**Elongation at break**	**Young's modulus**
This Work	~26.4 MPa	~136.2%	~907 MPa
Ref.[5]	~49.3 MPa	~800%	~305.4 MPa
Ref.[6]	~26.4 MPa	~1363%	~1.5 MPa
Ref.[7]	~ 77.7MPa	~505.4%	~ 382.5MPa
Ref.[8]	~24.8 MPa	~800%	~74.4 MPa

Refence:

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