

Supporting information

High-performance, fluorescent, UV-shielding, triboelectric, super-flexible polyurea elastomers via strong π - π stacking of pyrene and hydrogen bonding strategies

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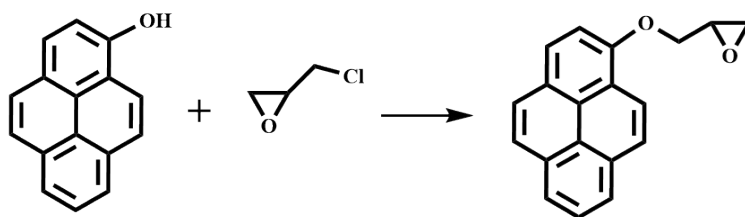


Figure S1. The synthetic route of PrGE

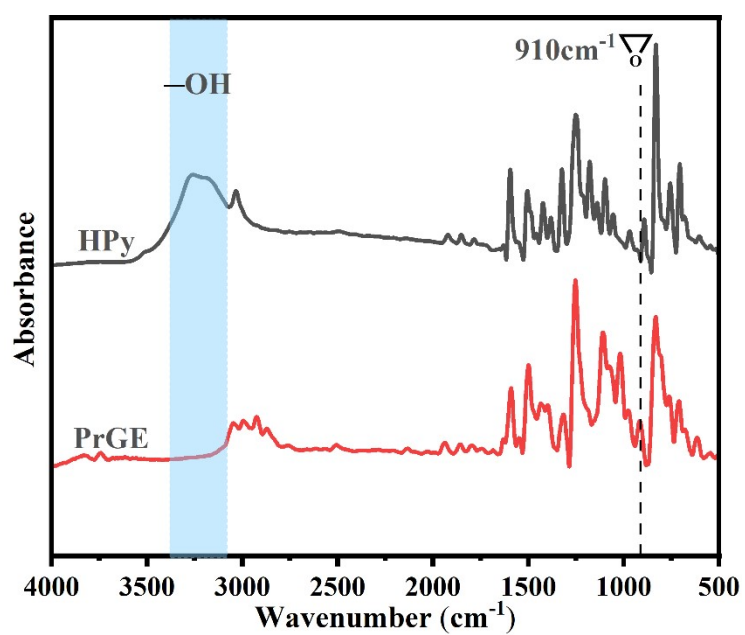


Figure S2. FTIR of the product PrGE and HPy

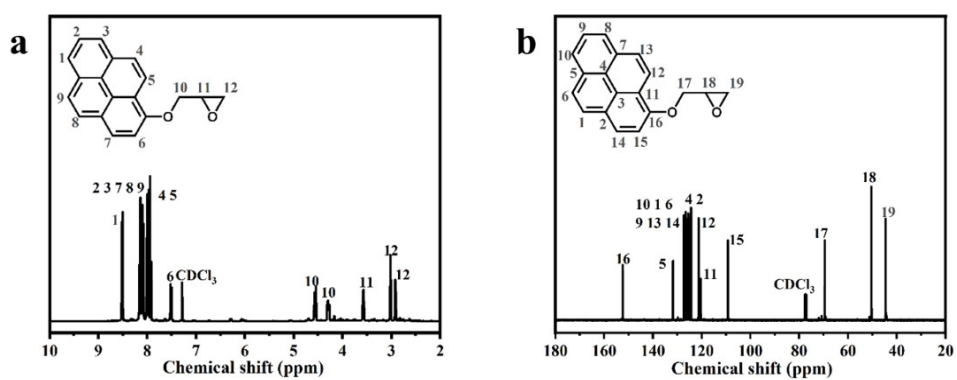


Figure S3. (a) ^1H NMR of PrGE. (b) ^{13}C NMR of PrGE

Table S1 Recipe list for PPU-x synthesis

	PrGE/mol	2-Hydroxy-1-ethanethiol/mol	HMDI/mol	D2000/mol	D230/mol
PPU-0.1	0.00125	0.00125	0.01375	0.00625	0.00625
PPU-0.2	0.0025	0.0025	0.015	0.00625	0.00625
PPU-0.3	0.00375	0.00375	0.01625	0.00625	0.00625
PPU-0.4	0.005	0.005	0.0175	0.00625	0.00625

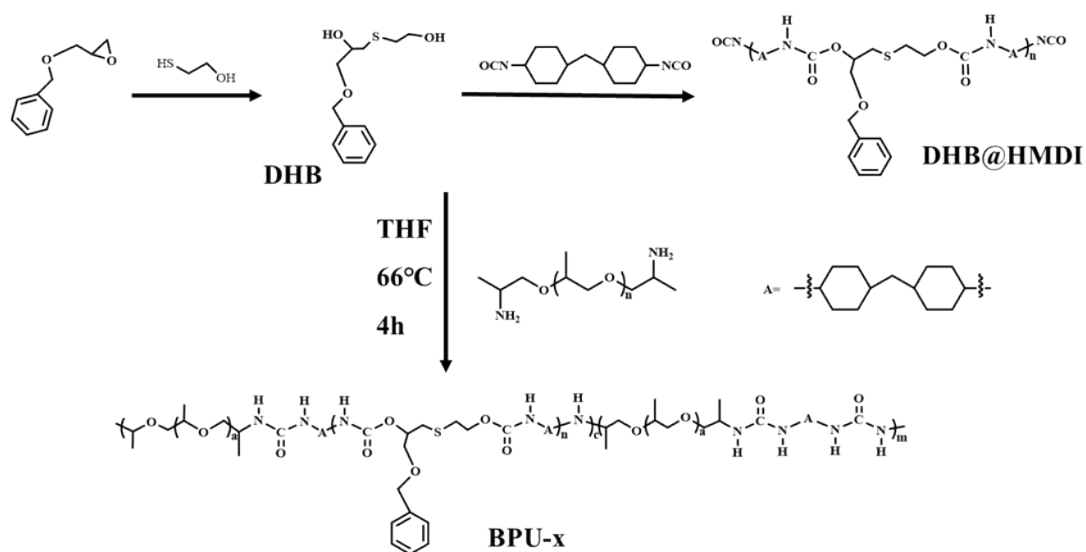


Figure S4. The synthetic route of BPU-x

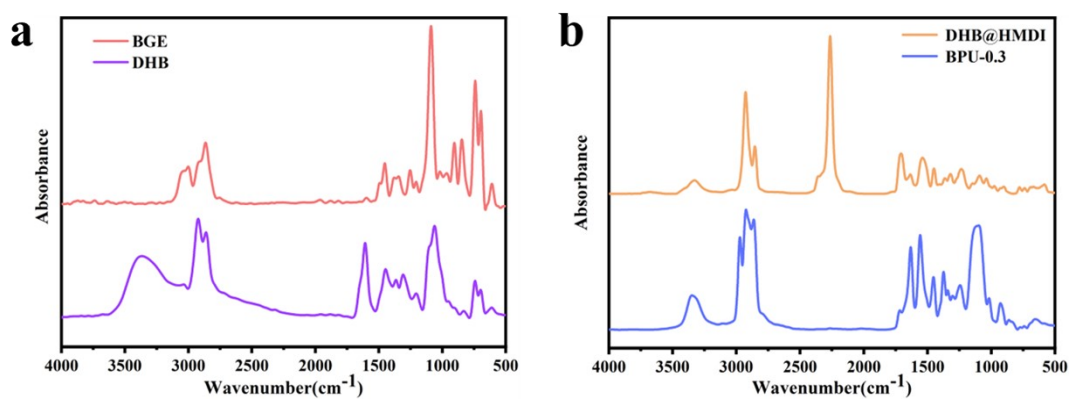


Figure S5. (a-b) FTIR image of corresponding product during BPU synthesis

Table S2 Recipe list for BPU-x and PU synthesis

	PrGE/mol	2-Hydroxy-1-ethanethiol/mol	HMDI/mol	D2000/mol	D230/mol
BPU-0.1	0.00125	0.00125	0.01375	0.00625	0.00625
BPU-0.2	0.0025	0.0025	0.015	0.00625	0.00625
BPU-0.3	0.00375	0.00375	0.01625	0.00625	0.00625
BPU-0.4	0.005	0.005	0.0175	0.00625	0.00625
PU	0	0	0.0125	0.00625	0.00625

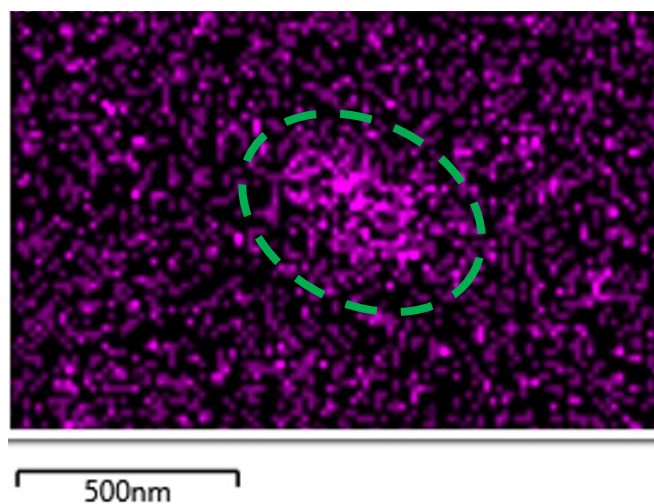


Figure S6. The EDS result of PPU-0.3

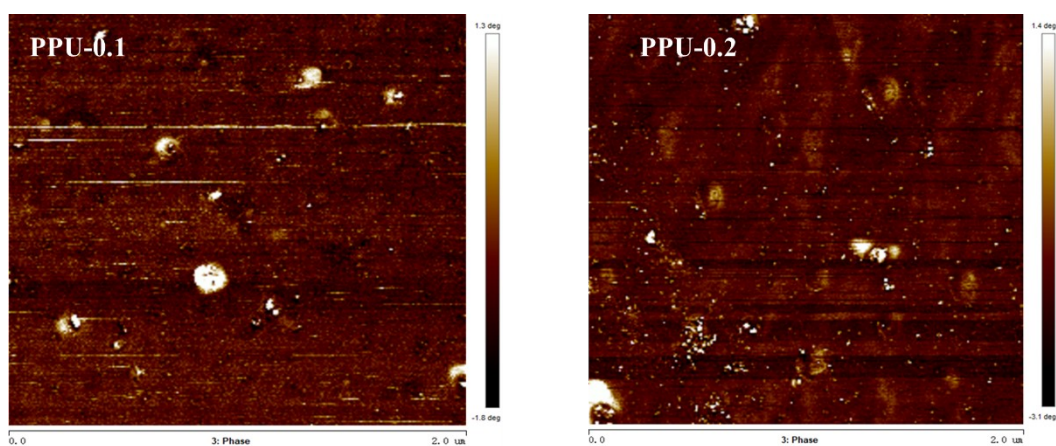


Figure S7. Phase diagram of AFM for PPU-0.1 and PPU-0.2

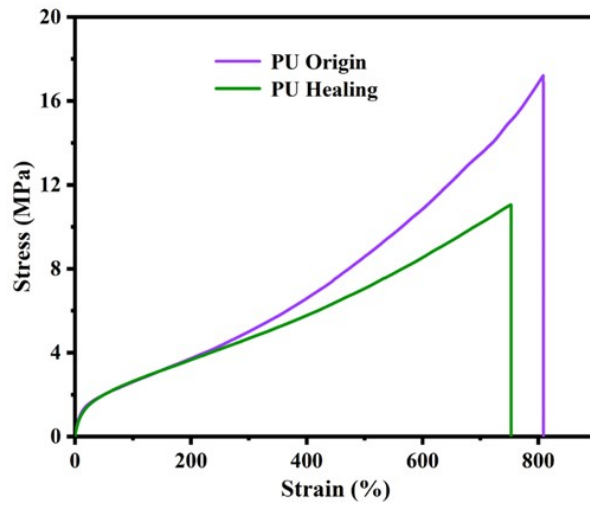


Figure S8. Stress-strain curves of PU before and after self-repair

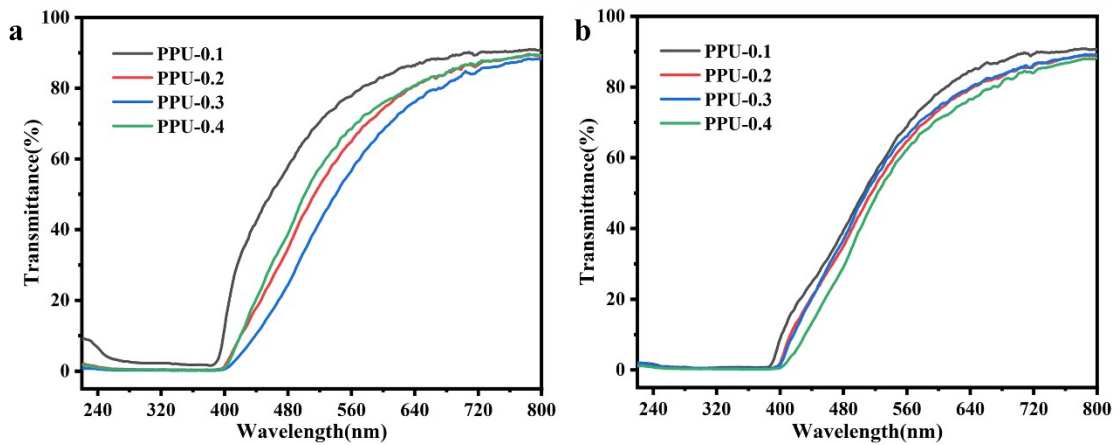


Figure S9. (a) After 50 hours of UV illumination. (b) After 100 hours of UV illumination

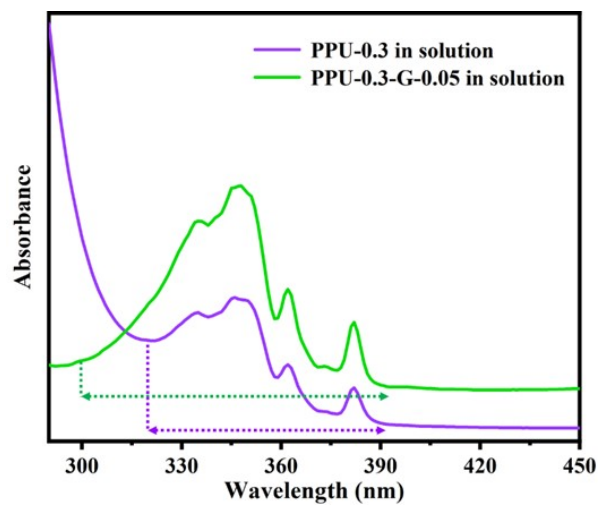


Figure S10. UV-vis absorption spectra of PPU-0.3 and PPU-0.3-G-0.05

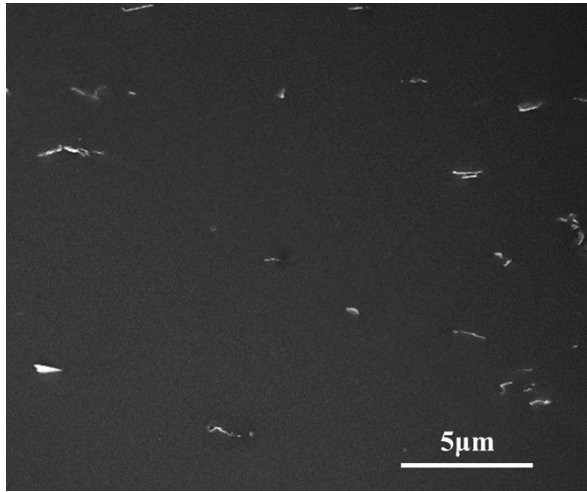


Figure S11. The SEM images of cold fracture of PPU-0.3-G-0.05

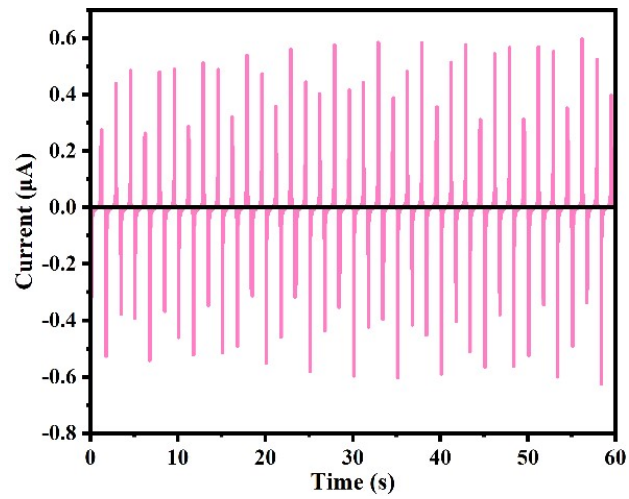


Figure S12. The short-circuit current of TENG