Supporting Information

Patternable Transparent & Conductive Elastomers towards Flexible Tactile/Strain Sensors

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Table S1. Key temperature points from TGA measurement

Sample	**T_{onset}[a] (°C)**	**T_{dec}[b] (°C)**	**T_g[c] (°C)**
1.1%	226.41	300.48	-73.33
2.1%	232.72	304.58	-72.66
3.2%	233.63	311.12	-70.82
4.3%	235.34	314.53	-69.94
5.3%	244.85	320.16	-68.03

Note:

[a]The temperature value at the point where a sharp decrease in the weight percent starts.

[b]The temperature value at which 50% of the weight is lost.

[c]The glass transition temperature are taken as the temperature at the middle point of the glass transition region.

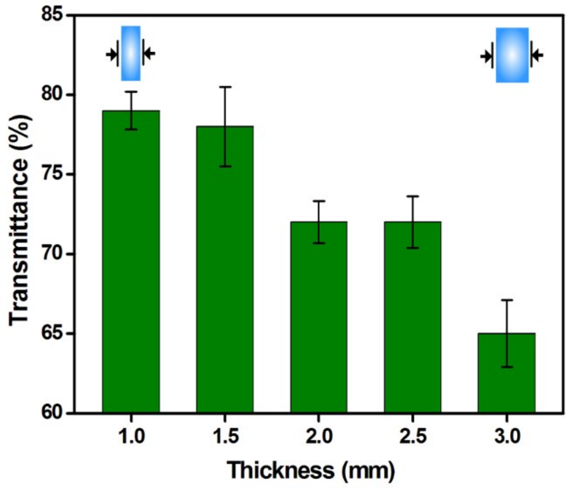

Figure S1. The increase of film thickness will reduce the transparency of poly(DES) films. Statistics of the transmittance value for different thicknesses of poly(DES) films. The crosslinker/PDSE weight ratio was fixed at 2.1 wt%.

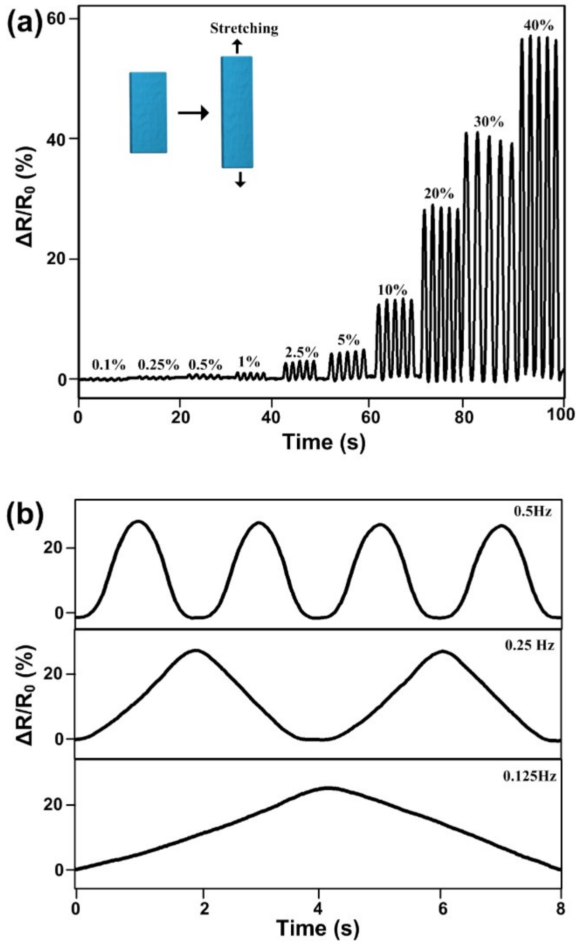

Figure S2. Great capacity of poly(DES) elastomers to respond the externally mechanical deformation. After optical, mechanical, as well as electrical properties, poly(DES) with 2.1% crosslinker/PDSE weight ratio is the favorite elastomer, and will be used in the following demonstrations if no other specified. a) Plots of resistance change of the poly(DES) as a function of time (input frequency: 0.5 Hz) for the applied strain in the range of 0.1%–40%. b) Plots of resistance change of the poly(DES) as a function of time (input strain: 20%) for diverse frequencies including 0.5, 0.25, and 0.125 Hz. During the electrical testing, the applied voltage in all the electrical tests was 0.5 V, the relative humidity was 45% and the temperature was 25 °C.

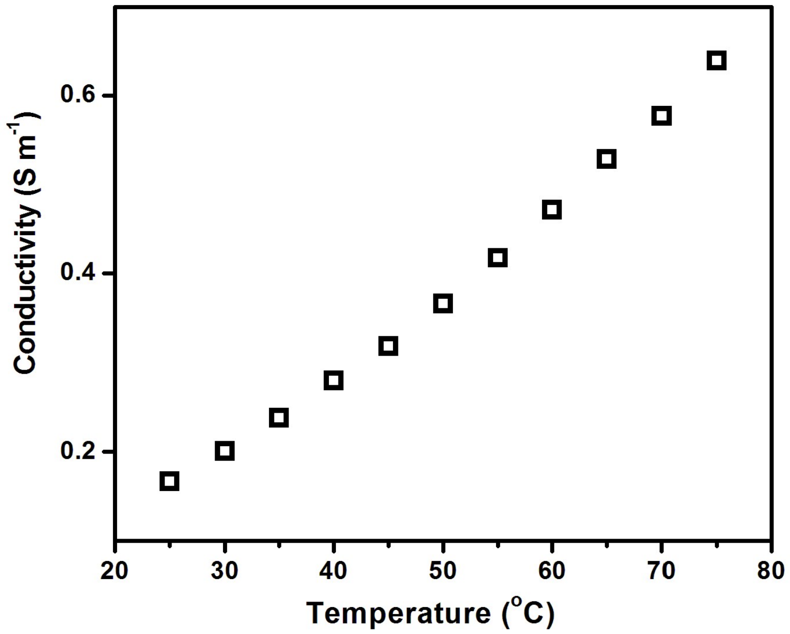

Figure S3. The dependence of conductivity change of poly(DES) elastomers on the temperature. During the electrical testing, the applied voltage in all the electrical tests was 0.5 V.