Electronic Supplementary Information (ESI)

Effects of concentration of hydrophobic component and swelling in saline solutions on mechanical properties of a stretchable hydrogel

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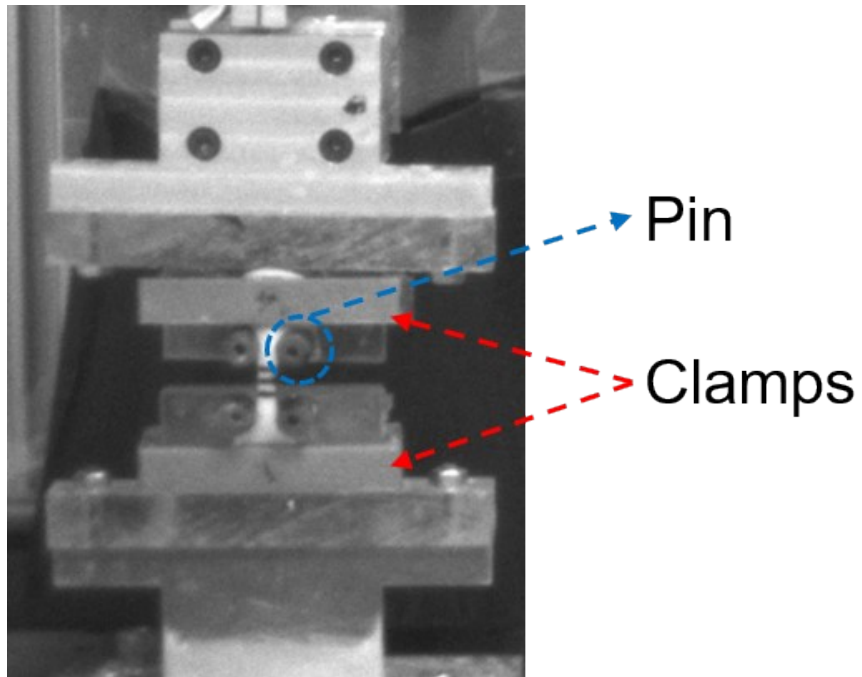
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Fig. S1 Tensile testing set-up. Image showing a gel sample supported by pins and clamps in the tensile set-up. Three lines at the gauge region of the gel sample used for strain estimation are also displayed.
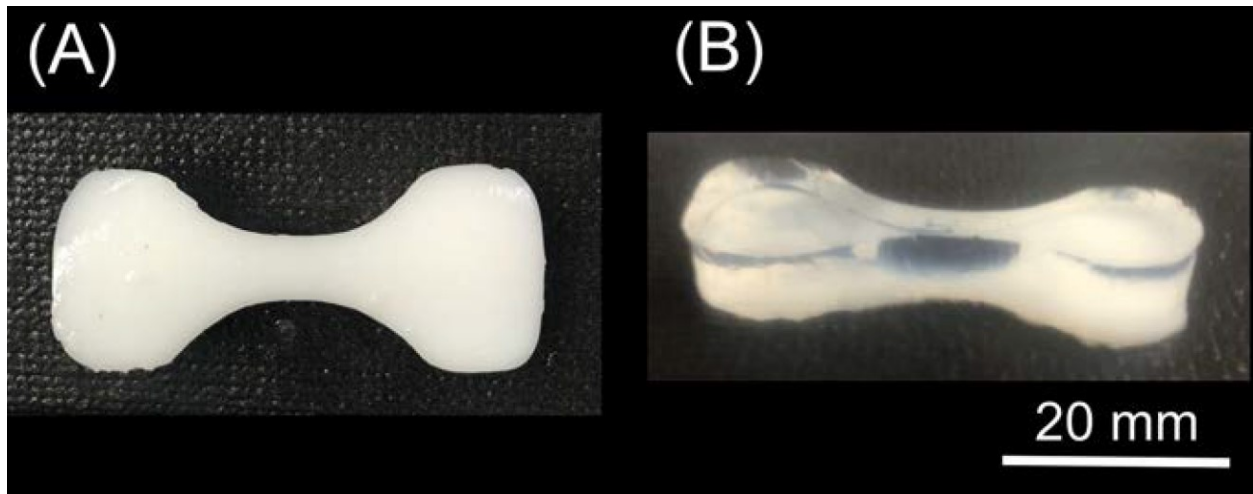
Fig. S2 Change in gel transparency with PPGDA concentration. Translucent and transparent nature of (A) 0.3% gel, and (B) 3% gel.
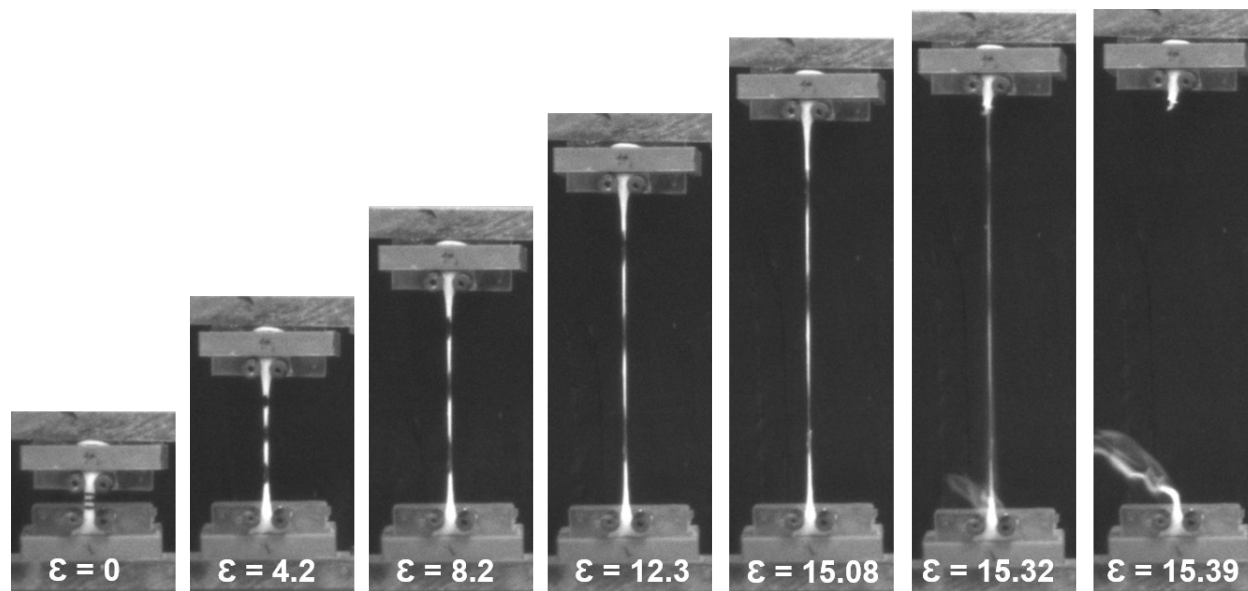
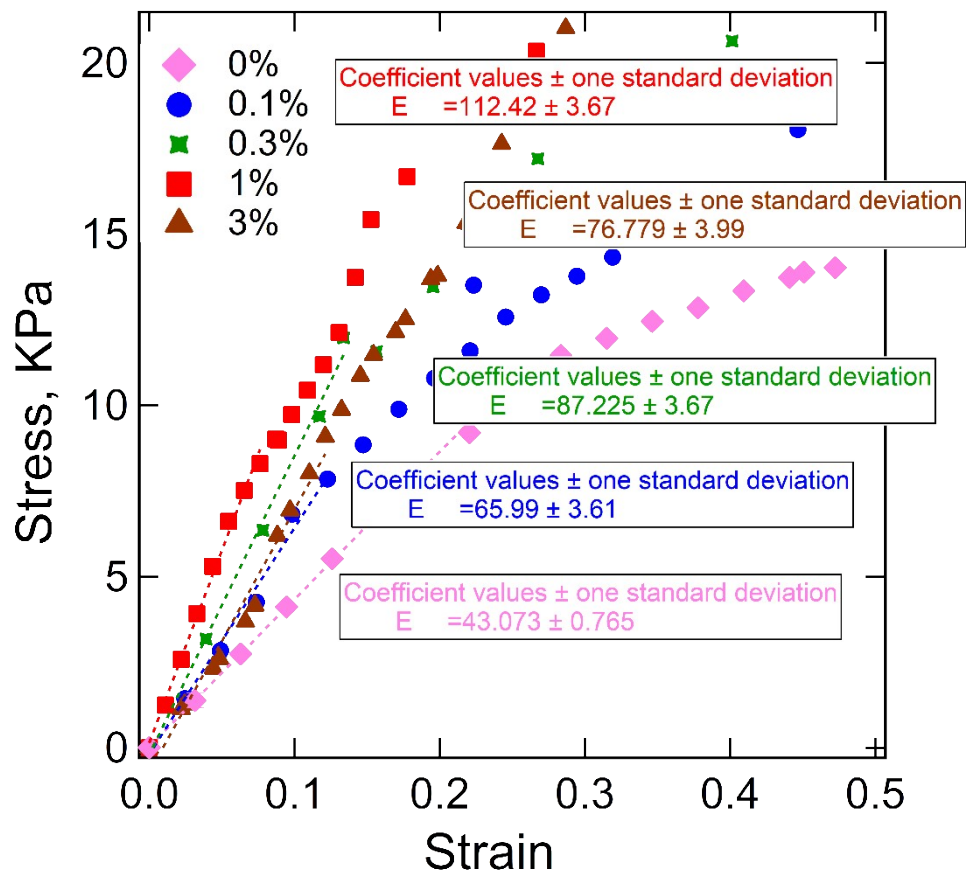Fig. S3 Images capturing the tensile behavior of 0% gel.

Fig. S4 Determination of tensile modulus of gels. Nominal stress (σ) as a function of strain (0≤ε ≤0.35) for 0%, 0.1%, 0.3%, 1% and 3% gels fitted with the neo-Hookean model for uniaxial loading.
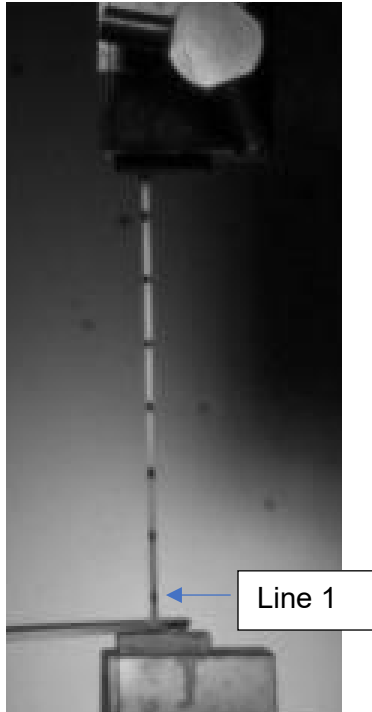
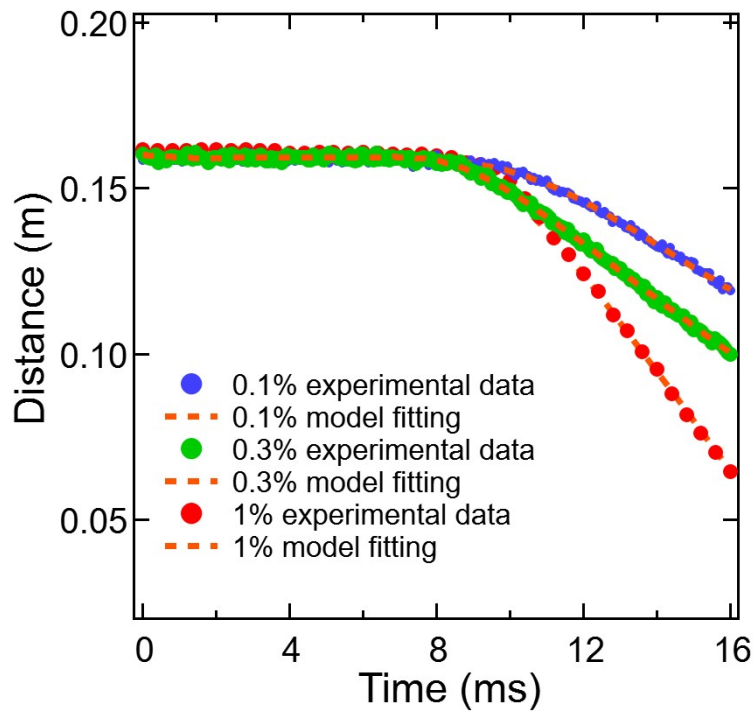Fig. S5 Retraction experimental set-up showing marked lines for 1% gel.

Fig. S6 Displacement vs. time from retraction experiment. Position of line 1 as a function of time for 0.1%, 0.3%, and 1% gels at λ=6.

Table S1. Tensile properties of the gels after swelling/ deswelling

	as-prepared	swelled	deswelled
0.1% gel			
Max. strain (%)	10.9±1.5	9.5±3.3	3.1±1.2
Max. stress (kPa)	55.0±12.2	33.3±2.9	317.6±179
Modulus (kPa)	66±3.6	31.3±3.3	289.3±19.7
1% gel			
Max. strain (%)	4.3±0.5	3.8±0.8	4.2±1.1
Max. stress (kPa)	99.8±30.3	41.5±8.4	212.6±86
Modulus (kPa)	112.4±3.7	30.2±2.5	15.0±1.3
3% gel			
Max. strain (%)	1.1±0.1	1.0±0.2	3.7±0.8
Max. stress (kPa)	56.3±13.1	39.4±6.3	353±94
Modulus (kPa)	76.8±3.9	52.3±3.6	230±17.4