

Electronic Supplementary Information

Effect of variations in manufacturing and material properties on the self-folding behaviors of hydrogel and elastomer bilayer structures

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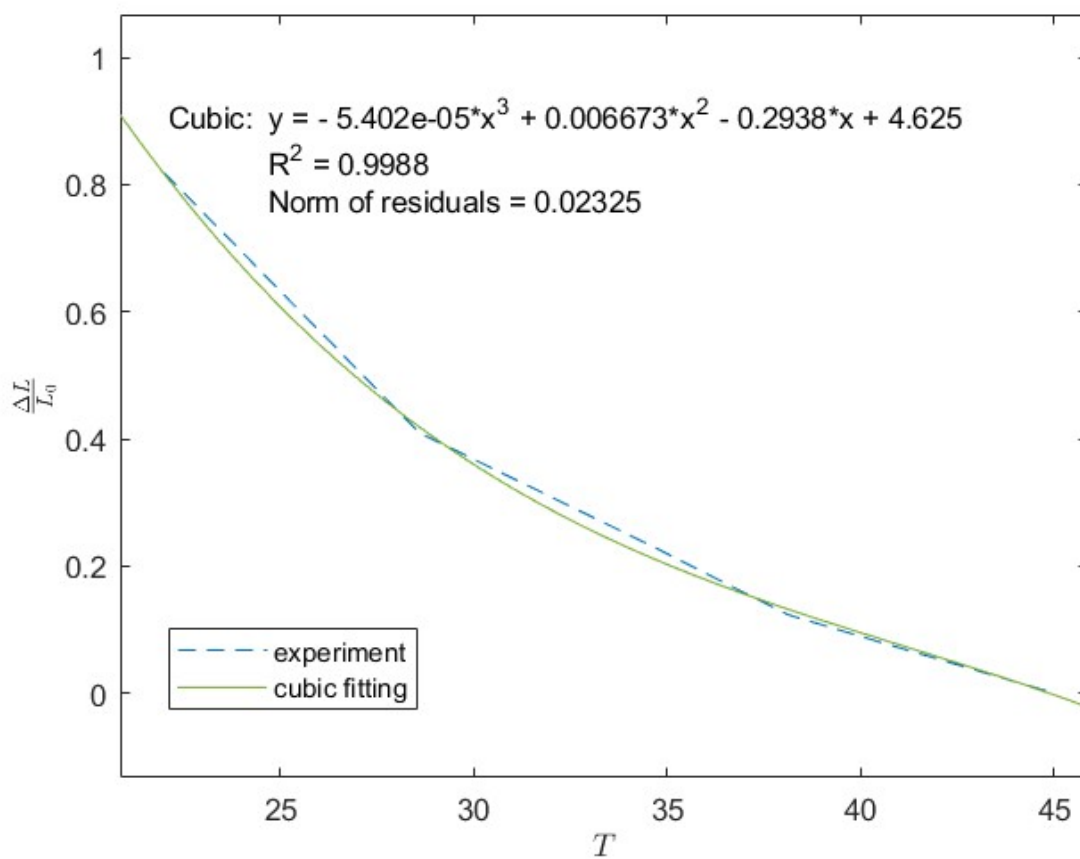


Fig. S1. A cubic curve fitting over the length ratio $\frac{\Delta L}{L_0}$ of NC-PNIPAM as a function of temperature T.

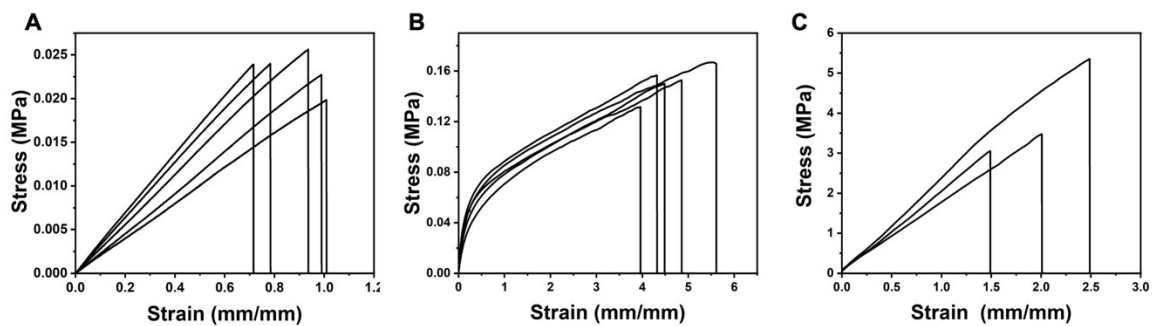


Fig. S2. Stress-strain curves of the NC-PNIPAM at (A) swelled state and (B) de-swelled state, and (C) PDMS substrate.

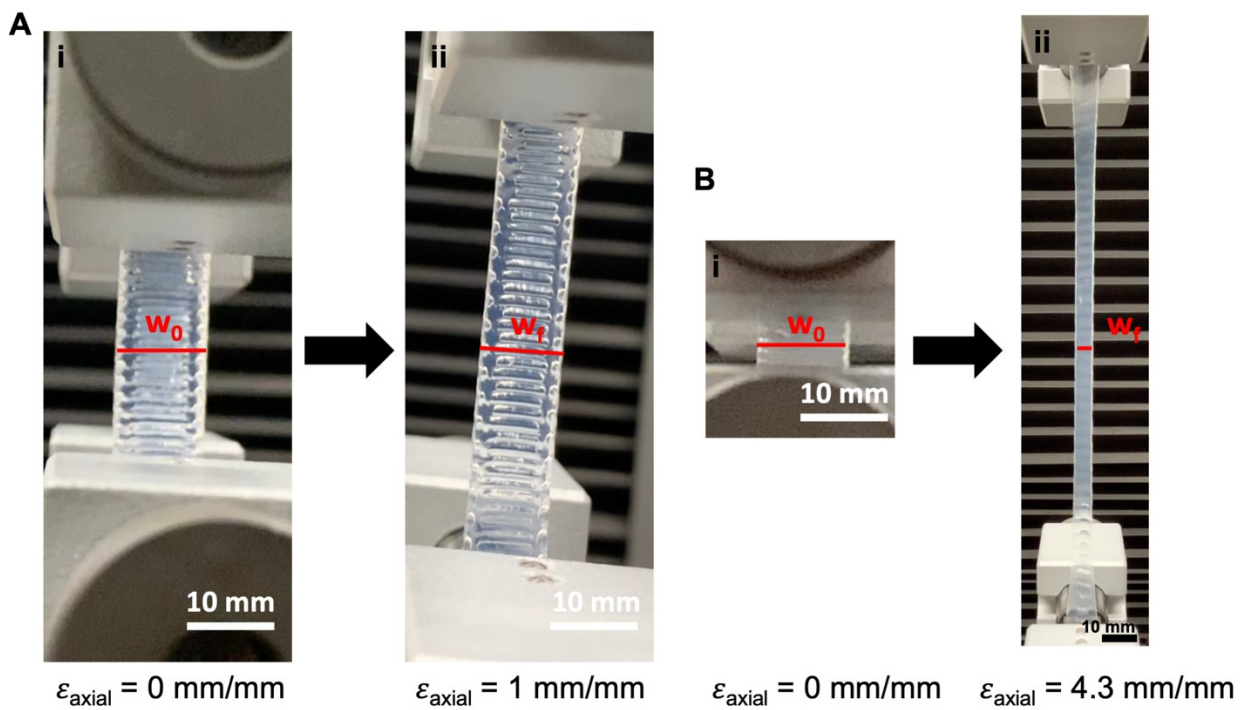


Fig. S3. Photographs of **(A)** swelled and **(B)** de-swelled NC-PNIPAM (i) before and (ii) after stretching, in which w_0 and w_f refers to the initial and final width of the tested sample, respectively.

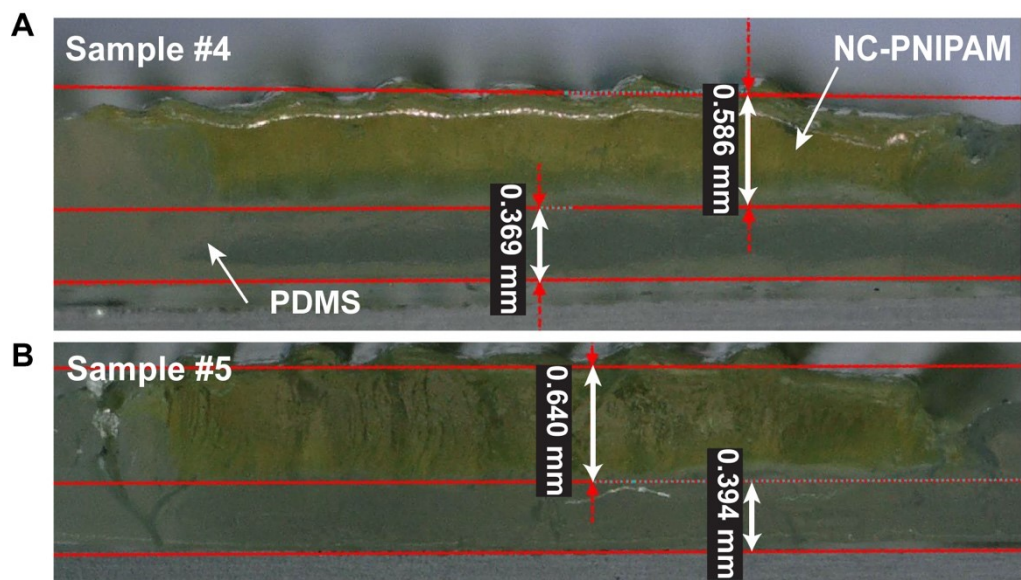


Fig. S4. Optical microscope photographs of the cross-sectional view of the hinge-based bilayer structure of NC-PNIPAM/PDMS printed with the target thickness ($h_1 = 0.6$ mm, $h_2 = 0.4$ mm). **(A)** Sample #4 with $h_1 = 0.586$ mm, $h_2 = 0.369$ mm; **(B)** sample #5 with $h_1 = 0.640$ mm, $h_2 = 0.394$ mm.

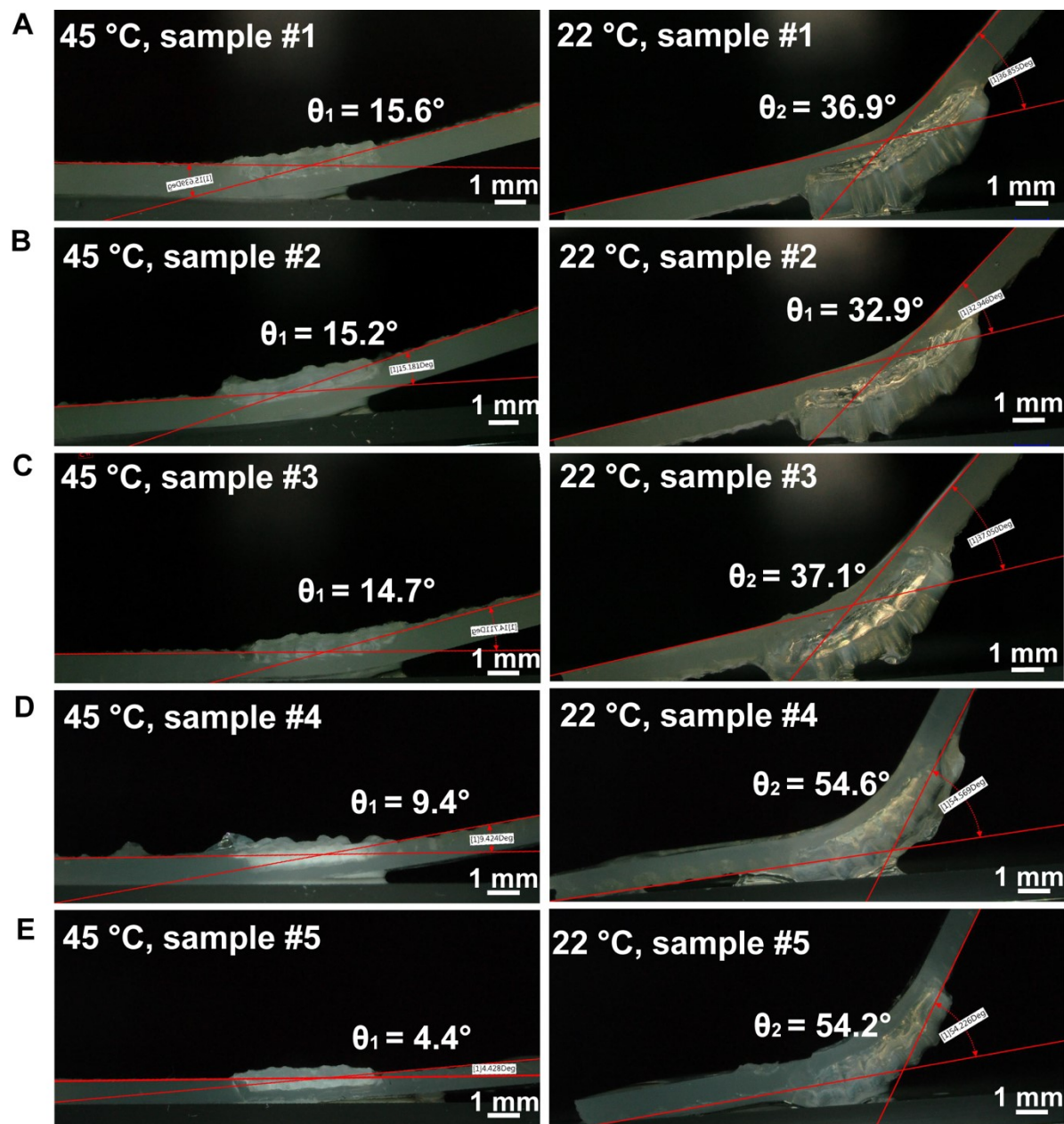


Fig. S5. Optical microscope photographs of the hinge-based bilayer structure of NC-PNIPAM/PDMS sample #1 - #5 de-swelled at 45 °C and swelled at 22 °C (A)-(E), respectively.