ADVANCED MATERIALS

Supporting Information

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Amine-Acrylate Liquid Single Crystal Elastomers Reinforced by Hydrogen Bonding

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Figure S1. FTIR spectra monitoring the acrylate conversion during the reaction.

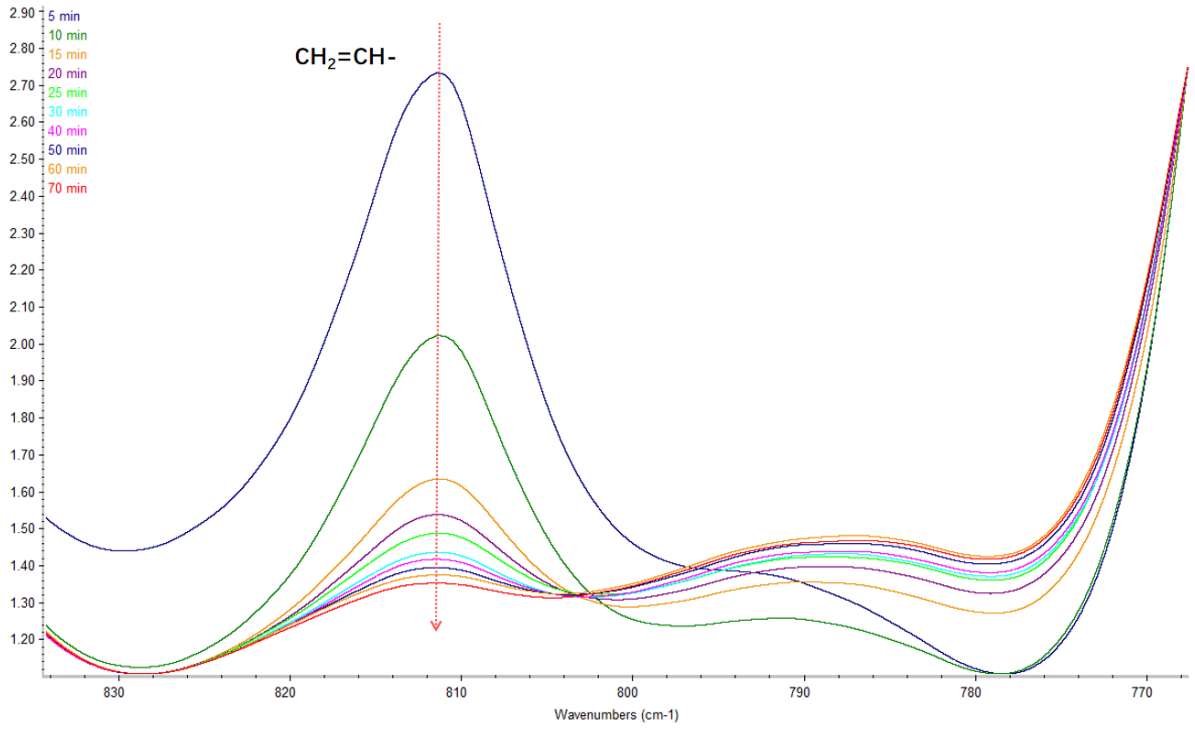


Figure S2. FTIR spectra monitoring the amine consumption during the reaction

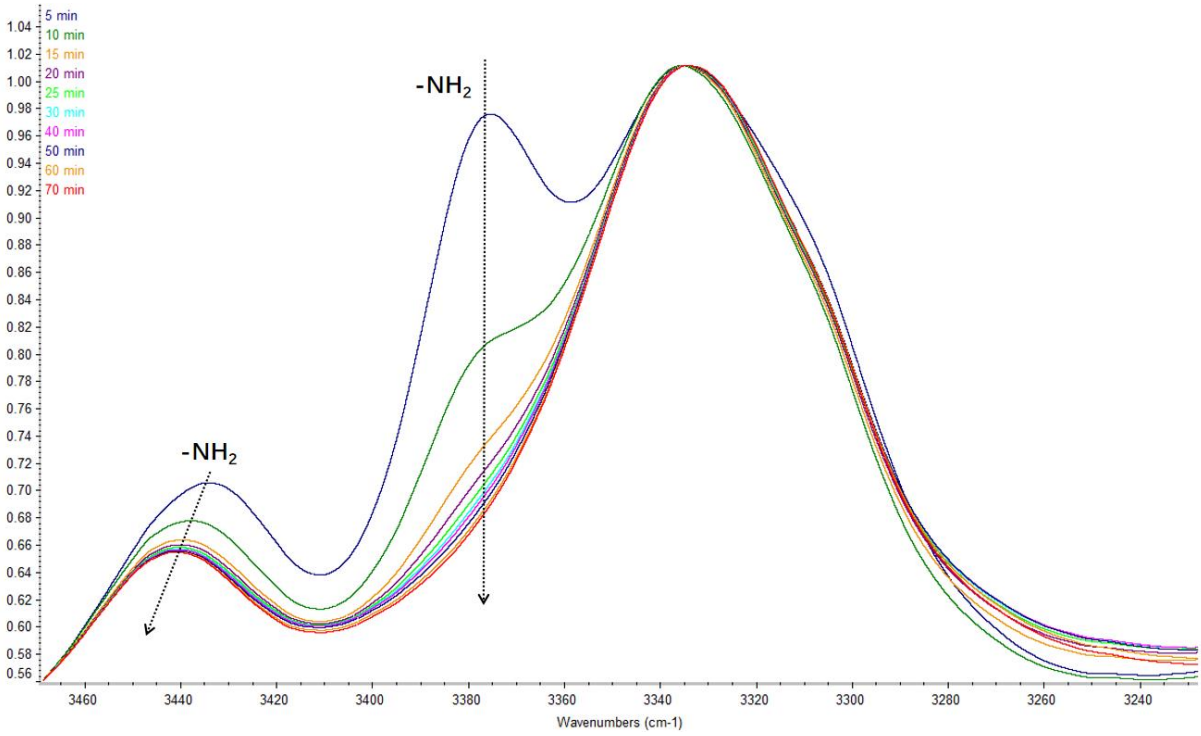


Figure S3. Mechanical stretchability of partially-cured gel, highlighting an exceptional durability up to the tensile strain of 1000%

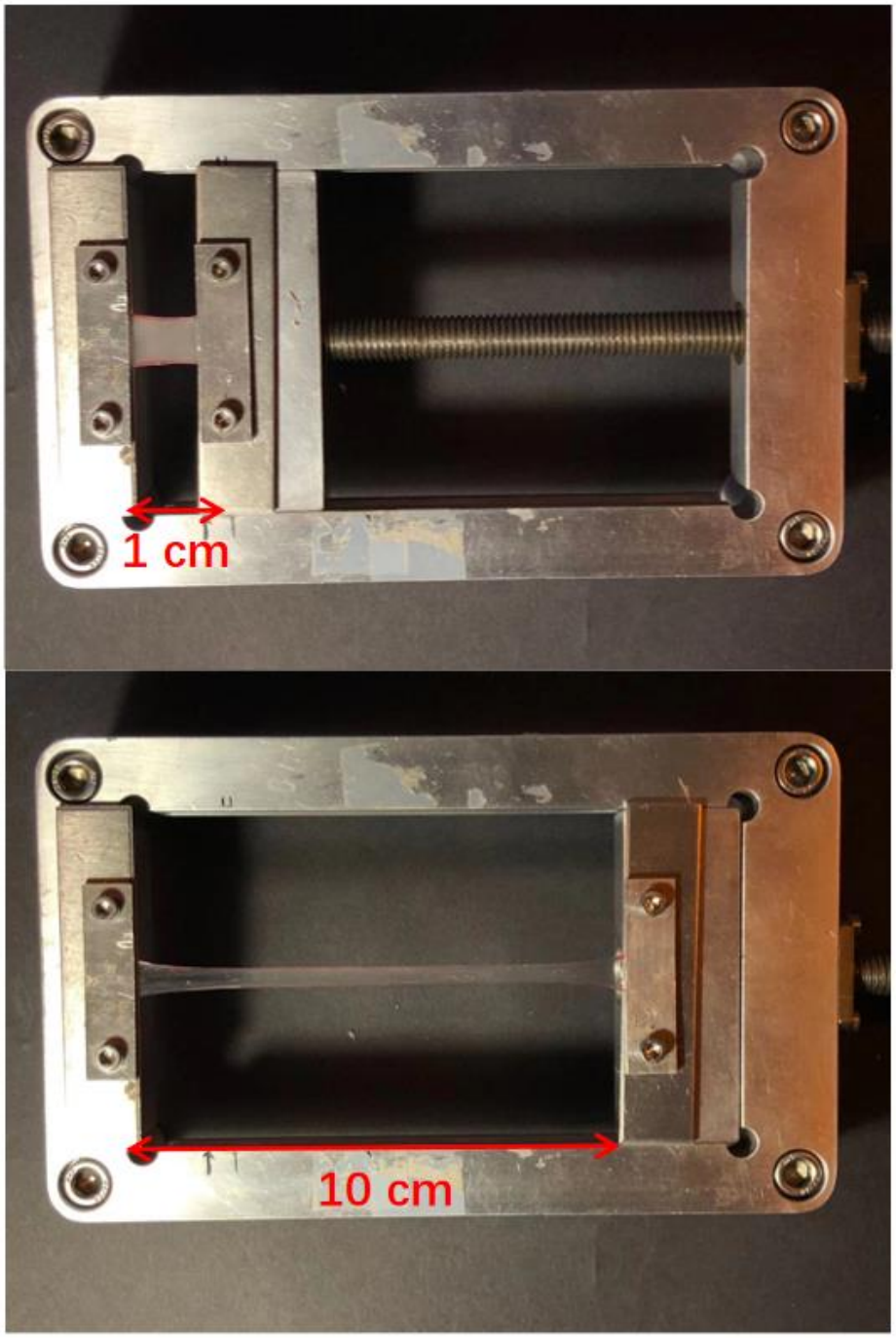


Figure S4. FTIR spectral analysis of free and bonded NH [1]

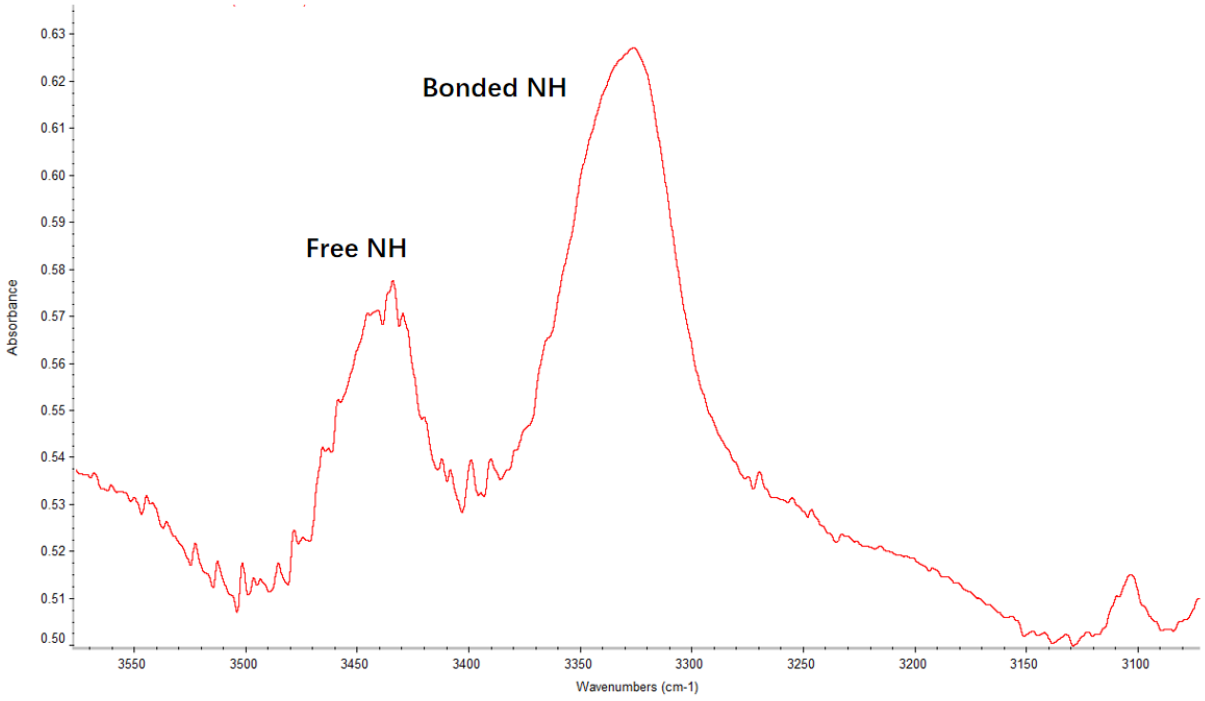
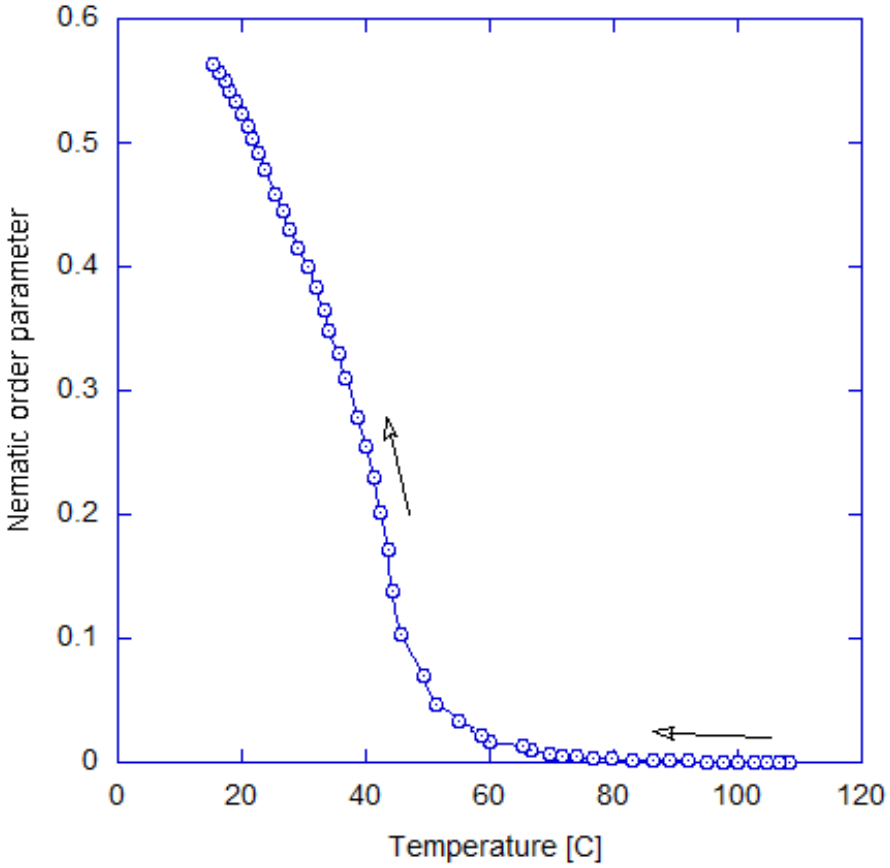


Figure S5. Variation of nematic order parameter Q during cooling from isotropic phase at a rate of cooling 10°/min. We used the theoretical equation relating the spontaneous load-free elongation of monodomain sample (strain ε) to the underlying order Q: $(1+\varepsilon)^3 = 1 + C \cdot Q$, which was extensively tested [2], and for which we had an independent X-ray measurement at room temperature fixing the constant *C*=5.6.



References:

[1] F. C. Wang, M. Feve, T. M. Lam, J. P. Pascault, *Journal of Polymer Science Part B: Polymer Physics* **1994**, 32, 1305.

[2] S. M. Clarke, A. Hotta, A. R. Tajbakhsh, E. M. Terentjev, Physical Review E 2001, 64, 061702.