Supporting Information

Multiple Physical Crosslinker Strategy to Achieve Mechanically Tough and Reversible Properties of Double-Network Hydrogels in Bulk and on Surfaces

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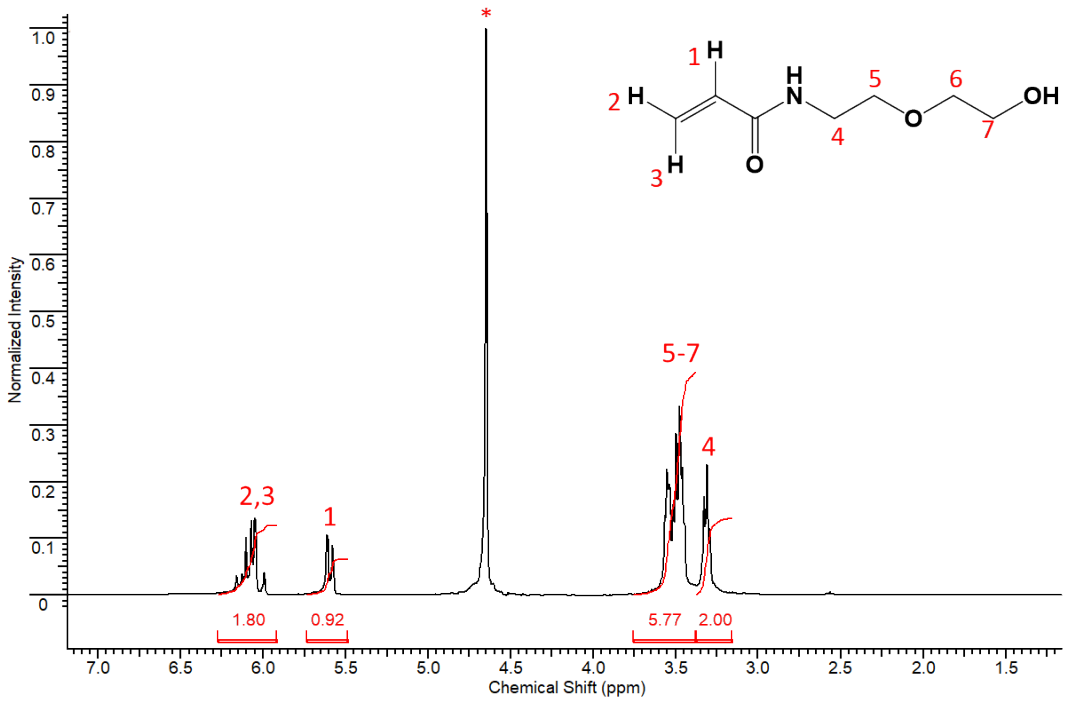

Figure S1. ^{1}H NMR spectrum of N-acryloylaminoethoxyethanol (AAEE) monomer (D_2O, 300 Hz).

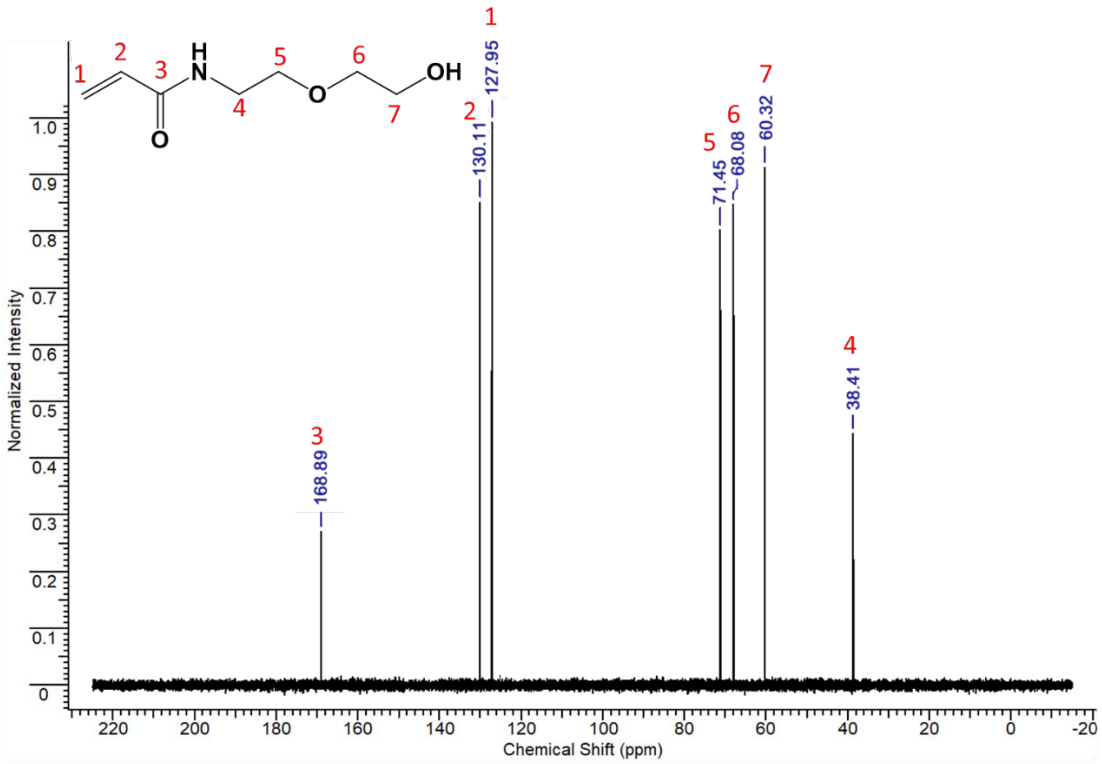

Figure S2. ^{13}C NMR spectrum of N-acryloylaminoethoxyethanol (AAEE) monomer (D_2O, 300 Hz)

Table S1. Concentration effects of the two networks (Agar and AAEE) on the mechanical properties of Agar/pAAEE DN gels.

Gel sample $Agar_x/pAAEE_y$*	E (MPa)	ε (mm/mm)	σ (MPa)	W (MJ/m^3)
$Agar_{20}/pAAEE_{50}$	0.732±0.117	1.62±0.31	0.675±0.010	0.607±0.065
$Agar_{30}/pAAEE_{50}$	0.858±0.142	1.80±0.10	0.959±0.012	0.957±0.055
$Agar_{40}/pAAEE_{50}$	1.580±0.107	2.26±0.16	1.595±0.004	2.187±0.101
$Agar_{50}/pAAEE_{50}$	1.846±0.051	2.54±0.05	1.838±0.101	3.011±0.048
$Agar_{50}/pAAEE_{40}$	1.330±0.199	2.19±0.15	1.122±0.022	1.607±0.140
$Agar_{50}/pAAEE_{30}$	1.368±0.114	2.13±0.27	0.800±0.053	1.251±0.239
$Agar_{50}/pAAEE_{20}$	1.165±0.008	0.80±1.20	0.434±0.042	0.214±0.046

*The Agar/pAAEE hydrogel prepared with *x* mg/mL Agar and *y* wt% AAEE is denoted as $Agar_x/pAAEE_y$ in Table 1.