Supplementary Materials

A Patterned Butyl Methacrylate-*co*-2-Hydroxyethyl Acrylate Copolymer with Softening Surface and Swelling Capacity

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Figure S1 shows a huge crack in AAO template with copolymer confined. Stretched filaments show the copolymer flexibility and stretching, and the polymer reaches to stretch up to 4 microns.

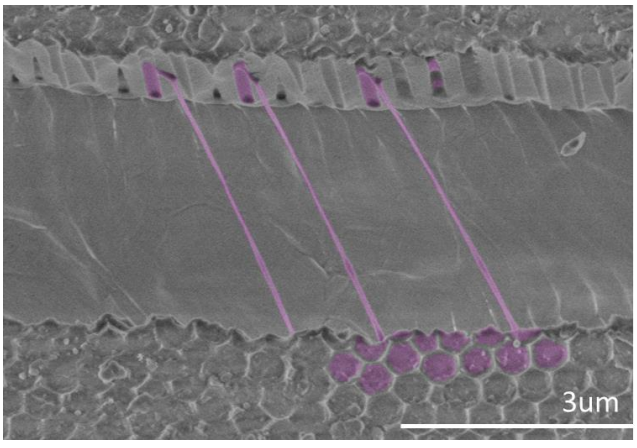

Figure S1. Top view from a huge crack of template polymerized "in-situ" with HEA-BMA.

Figure S2 shows the H NMR extended spectra between 3 and 5 ppm for the homo- and copolymers obtained under bulk conditions with the assignments of resonance peaks.

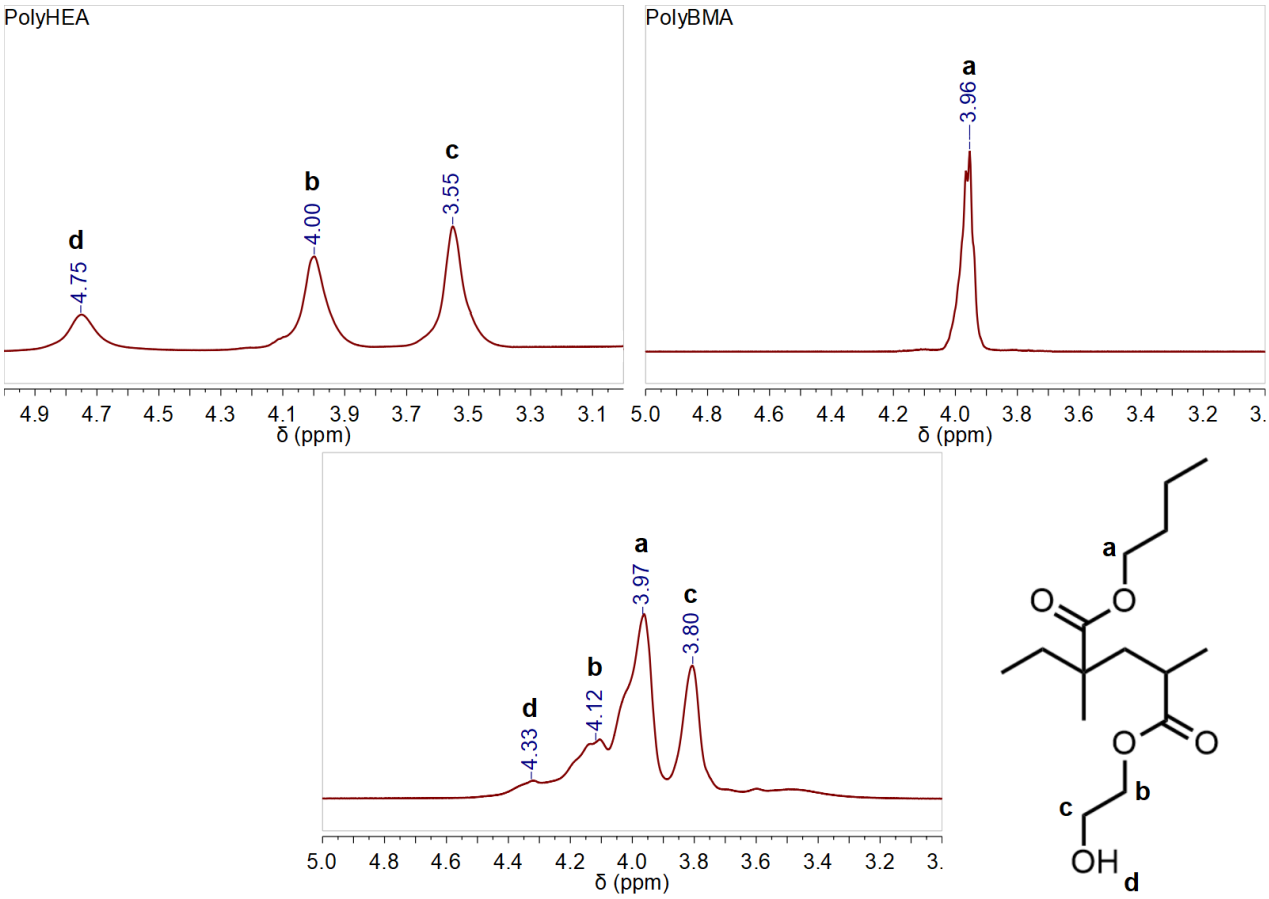

Figure S2. Extended H NMR spectra for homo- and copolymers obtained under bulk condition with assignments of resonance peaks.

The copolymer composition was estimated from the deconvolutionated H NMR signals (figure S2) at δ = 3.80 ppm (signal c for HEA monomer) and 3.97 ppm (signals a for BMA monomer), using Eq. S1.

$$F_{BMA} = \frac{I_{d=3.97}/_2}{I_{d=3.97}/_2 + I_{d=3.80}/_2} \qquad \text{(eq S1)}$$

F_{BMA} represents the BMA molar fraction in the copolymers.

The final copolymer composition were 0.47 for BMA and 0.53 for HEA (F_{BMA}=0.47±0.3 and F_{HEA}=0.53±0.2) in copolymerization under confinement and 0.62 for BMA and 0.38 for HEA (F_{BMA}=0.60±0.5 and F_{HEA}=0.4±0.3) in copolymers obtained under bulk conditions.