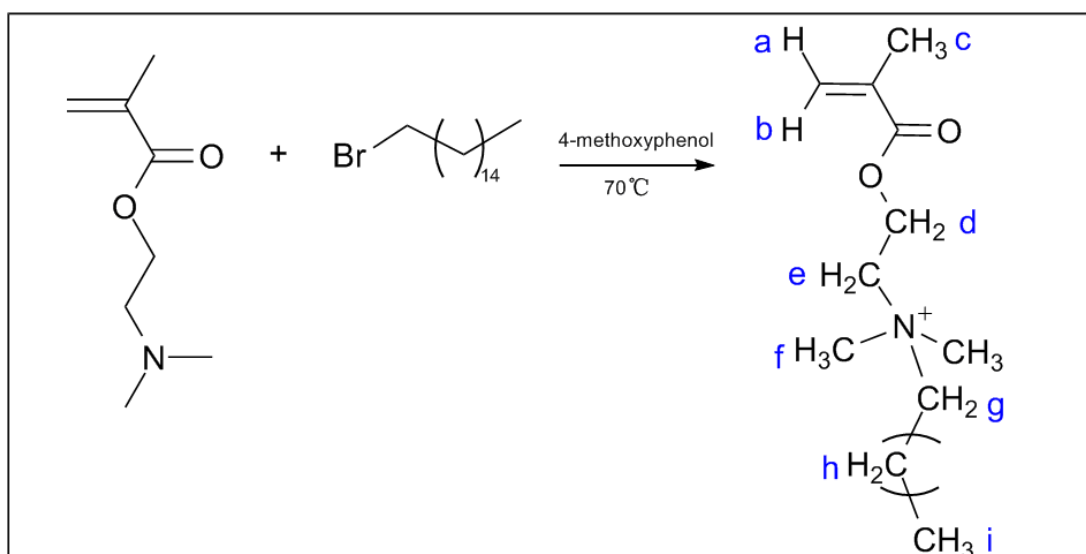
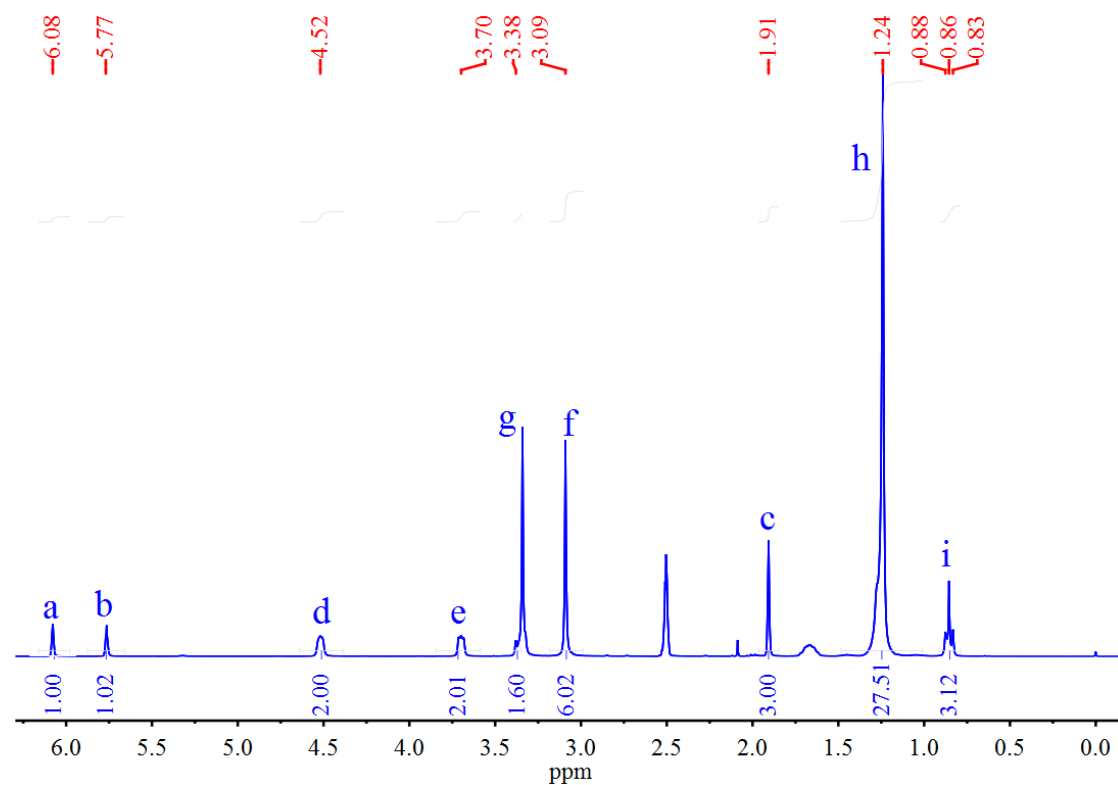


Supporting information

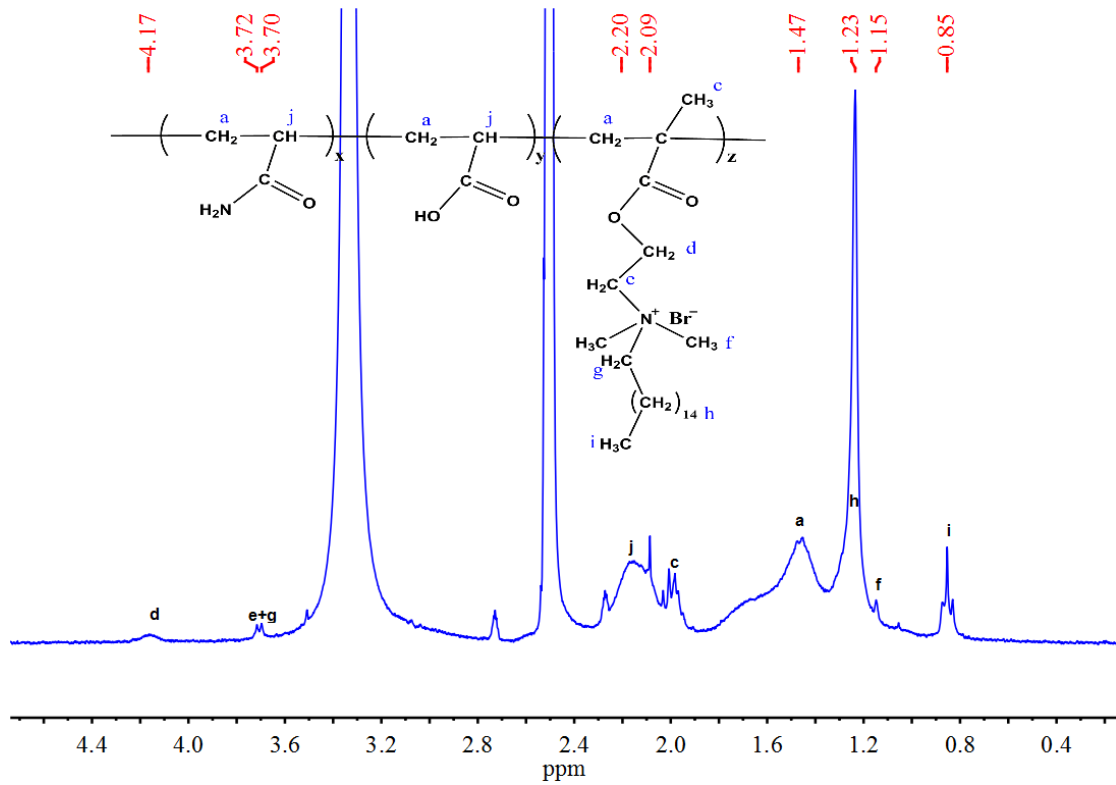
1. Synthesis and characterization of C16DMAEMA and the copolymers



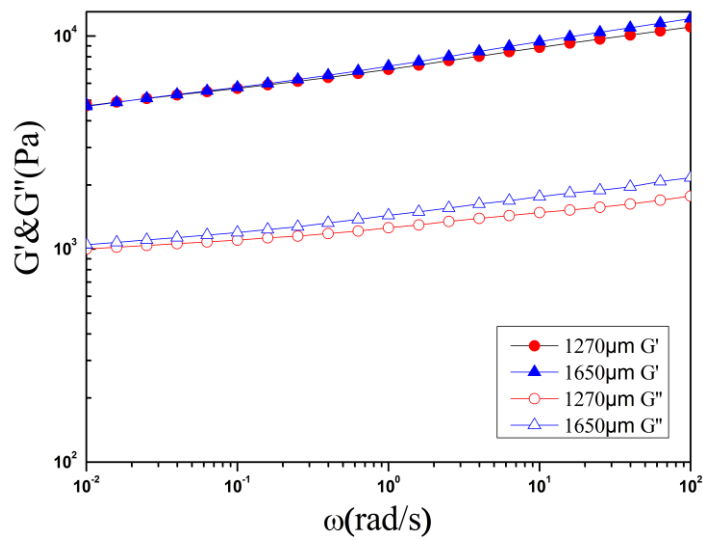
¹HNMR of C16DMAEMA (DMSO-d₆)



¹H NMR of Poly(AM-AA-C16DMAEMA)(DMSO-d6)

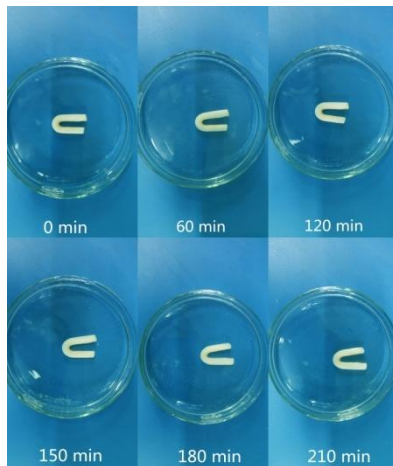


2. Effect of plate to plate distances on the rheological properties of the hydrogels.



Frequency sweep of a hydrogel sample under two different gap values (1270, 1650 μm). The molar ratio for AM, AA and C16DMAEMA in the feed is 0.5/0.485/0.015.

3. Shape memory hydrogel induced by Fe^{3+} (40mM) was exposed to water environment for 3.5h.



The sample retains its temporary shape perfectly, except that it swells slightly after a long immersion time.