Supporting Information

결정성 이온젤: 합성, 특성 분석 및 스트레인 센서 응용

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Semicrystalline Ion Gels: Synthesis, Characterization, and Application in Strain Sensors

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Keywords: ion gel, crystalline, ionic liquid, cross-link, strain sensor

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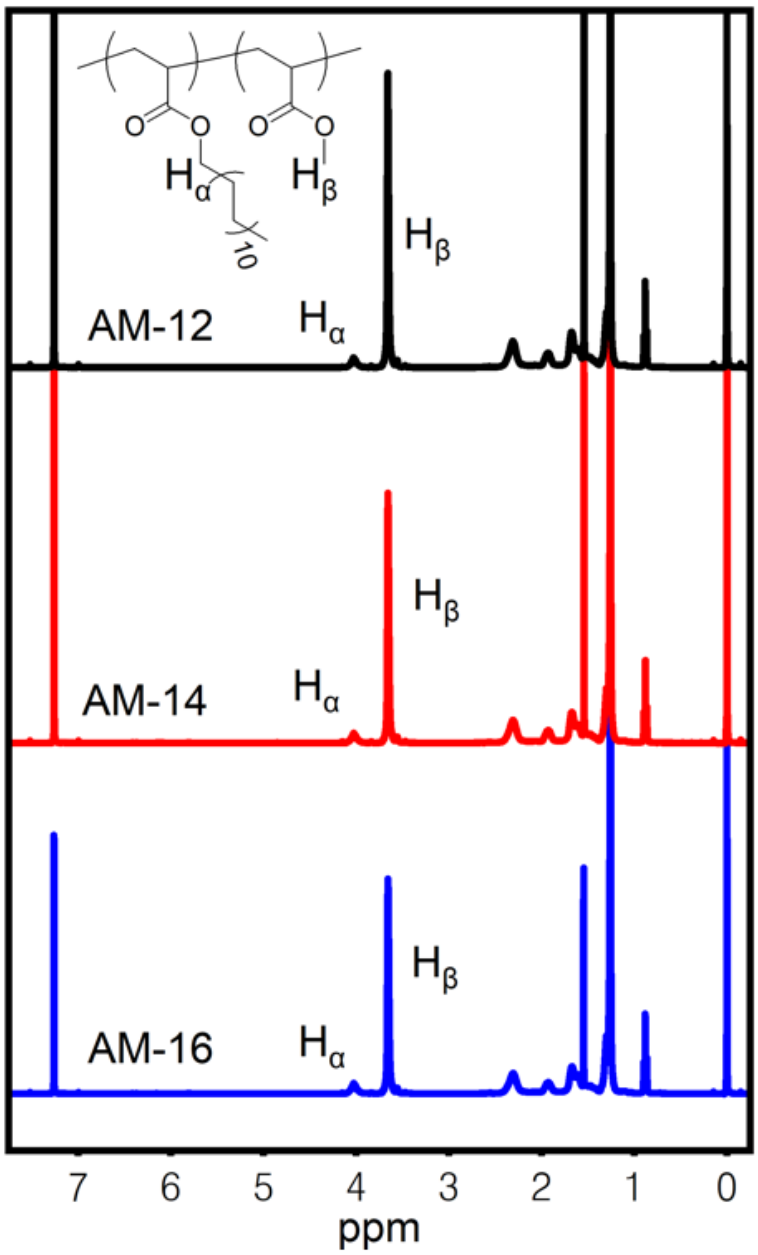

Figure S1. ^{1}H-NMR spectra of AM copolymers (solvent: chloroform-*d*). A small amount of monomer (< 2 mol%) remained after additional purification.

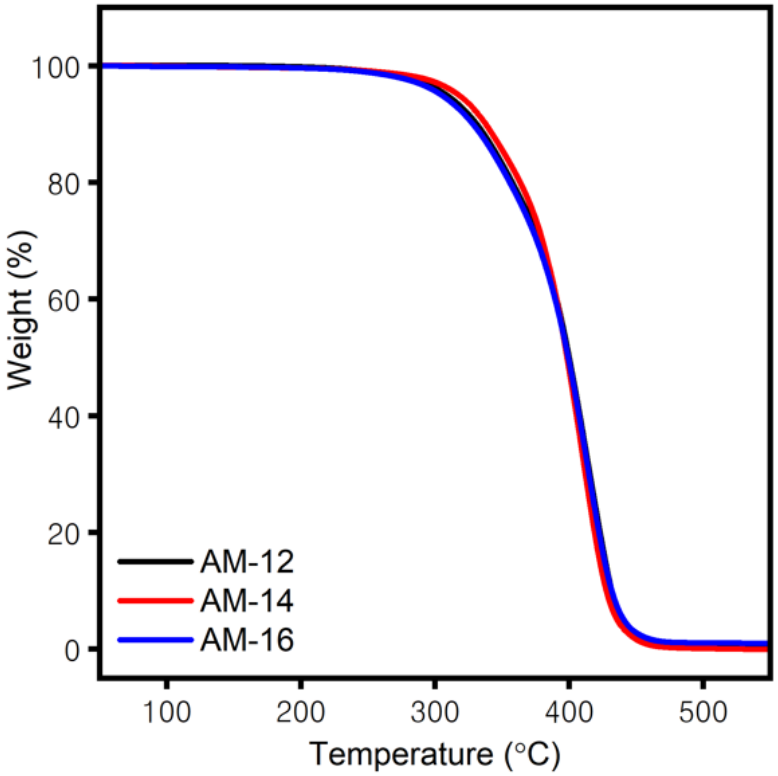

Figure S2. TGA curves of AM copolymers.

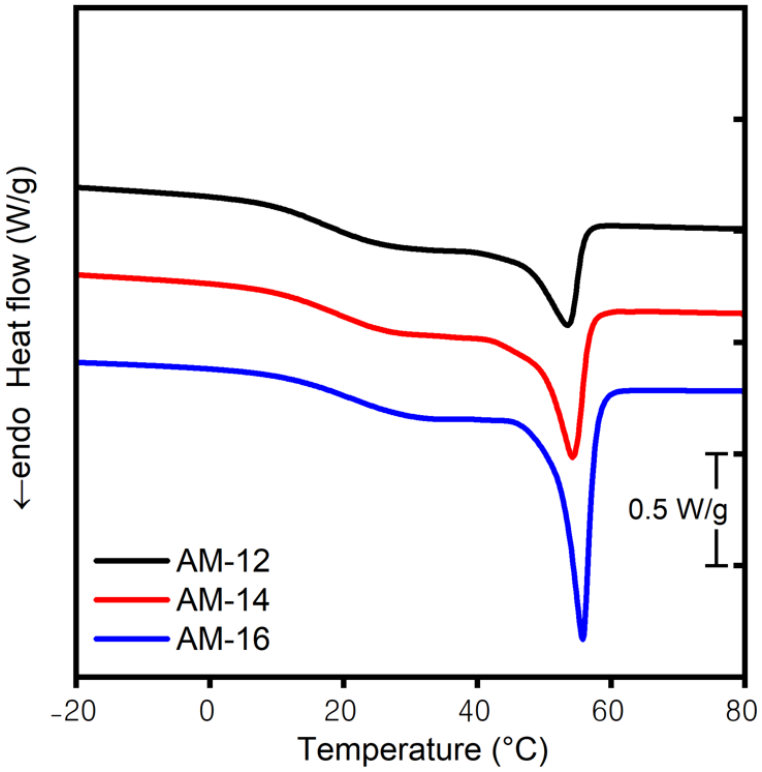

Figure S3. DSC thermograms of AM copolymers (second heating at 10 °C/min).

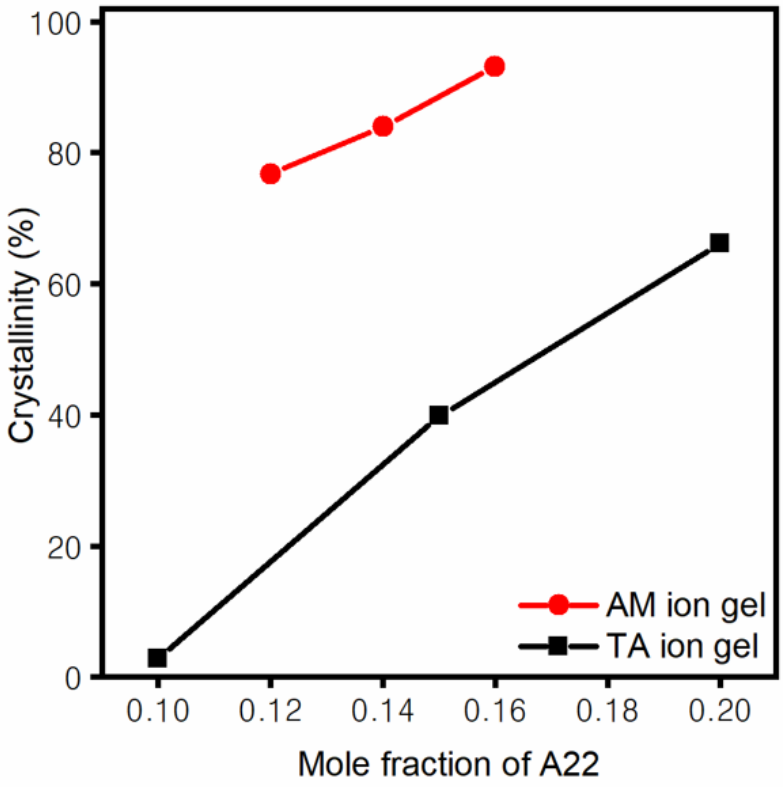

Figure S4. Ion gel crystallinity based on AM copolymers and poly(*tert*-butyl acrylate-*r*-docosyl acrylate) (TA) copolymers. The latter results are reproduced from the previous publication.[1] The lines are guides for the eyes.

1. Lee, Y.; Kim, M.; Kim, H.; Lee, K. H.; Kim, S. Self-Healable and Tough Polymer Electrolyte Composites Based on Associative Nanostructural Networks. *ACS Appl. Polym. Mater.* **2022**, 4, 5821-5830.

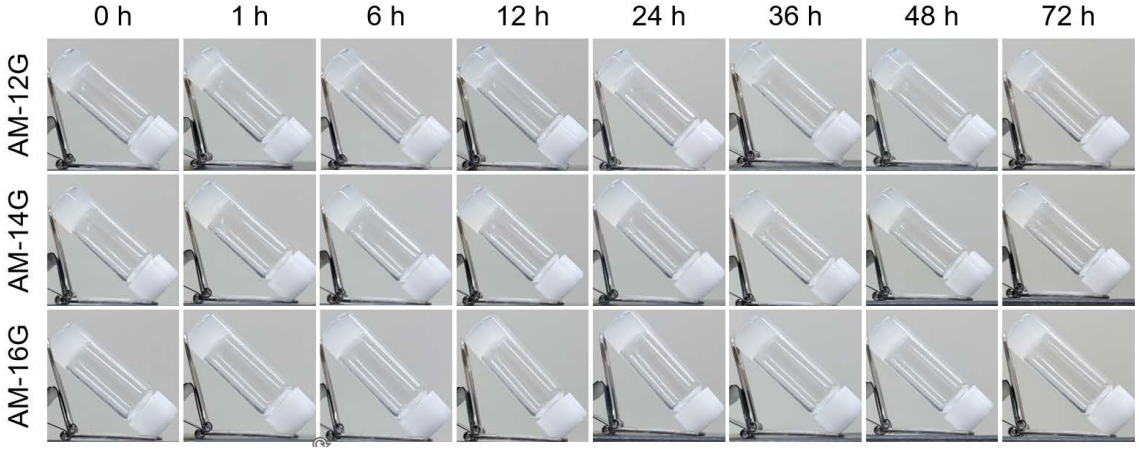

Figure S5. Vial tilt test results of AM ion gels at room temperature monitored over 72 h.

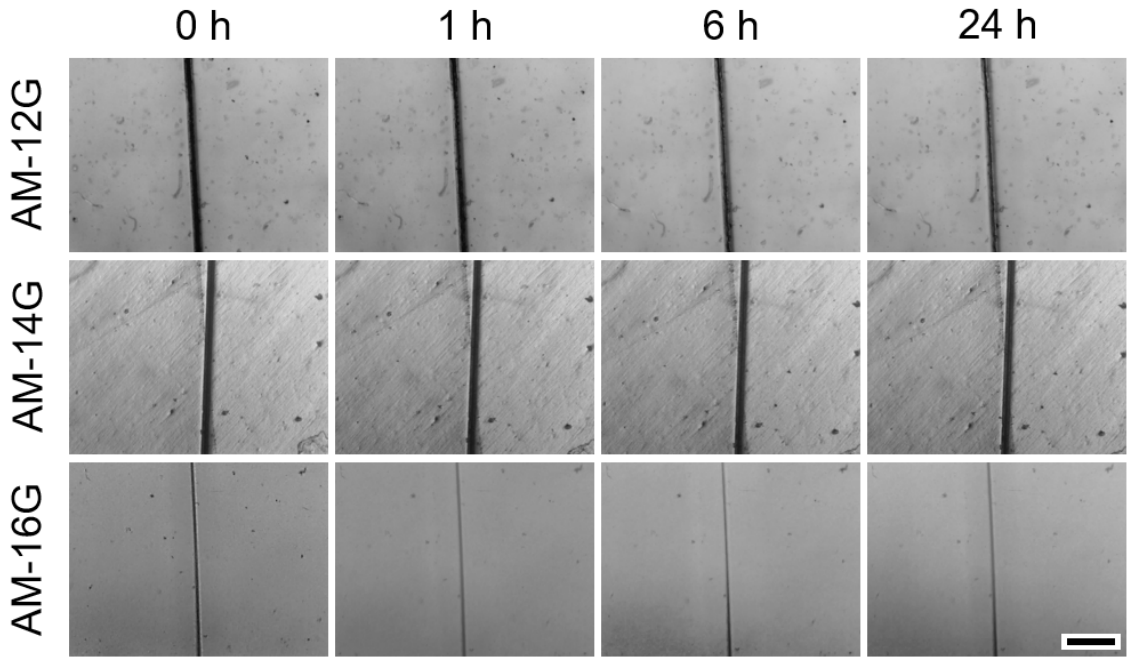

Figure S6. Optical microscope images of scratched AM ion gels at room temperature monitored over 24 h. The scale bar corresponds to 100 μm.

Table S1. Mechanical Properties of AM Ion Gels

Sample	E^a (MPa)	σ^b (MPa)	$\varepsilon_b{}^c$ (%)
AM-12G	0.8	0.1	56
AM-14G	6.4	1.4	35
AM-16G	8.8	0.8	13

[a]Young's modulus was calculated from the slope of the stress–strain curve at a strain of 5%; [b]tensile strength and [c]elongation at break of AM ion gels.