

Electronic Supplementary Information

Title: **Acid-amplifying polymers: synthesis, characterization, and application to environmentally stable chemical amplification positive (ESCAP) resists**

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Fig. S1 Spectral changes in FT-IR measurements of a film of copolymer **2c** containing 0 or 1 wt% TsOH with heating at 120 °C.

Fig. S2 Photosensitivity curves of films of **2a** containing 1 wt% of PAG **5**, with various postbaking times.

Fig. S3 Photosensitivity curves of films of **2a** containing 1 wt% of PAG **5**, with various postbaking temperatures.

Fig. S4 Changes in peak intensities of sulfonate in the presence of 1 wt% of TsOH on a film of **1a** and **2a**.

Fig. S1 (a) Spectral changes in FT-IR measurements of a film of **2c** containing 1 wt% of TsOH, with heating at 120 °C. (b) Changes in peak intensities of sulfonate (red) and sulfonic acid (blue) in the presence (circle) and in the absence (triangle) of 1 wt% of TsOH.

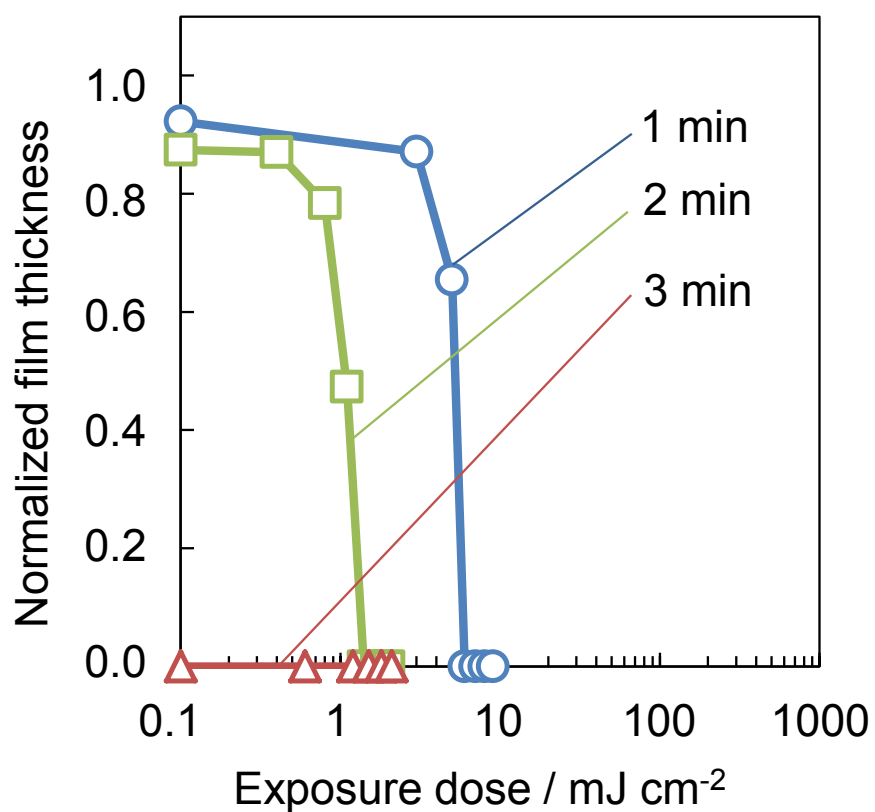


Fig. S2 Photosensitivity curves of films of **2a** containing 1 wt% of PAG **5**, with various postbaking times.

The films were exposed to 254 nm light, followed by heating at 140 °C, and development was performed with 2.38 wt% aqueous TMAH solution for 30 s.

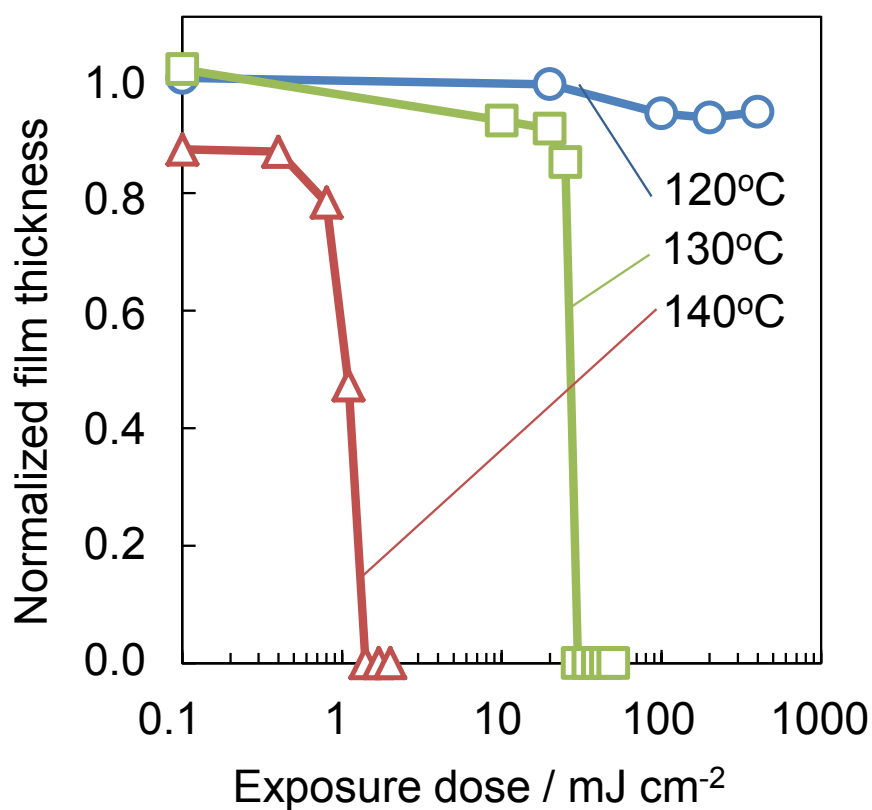


Fig. S3 Photosensitivity curves of films of **2a** containing 1 wt% of PAG **5**, with various postbaking temperatures.

The films were exposed to 254 nm light, followed by heating for 2 min, and development was performed with 2.38 wt% aqueous TMAH solution for 30 s.

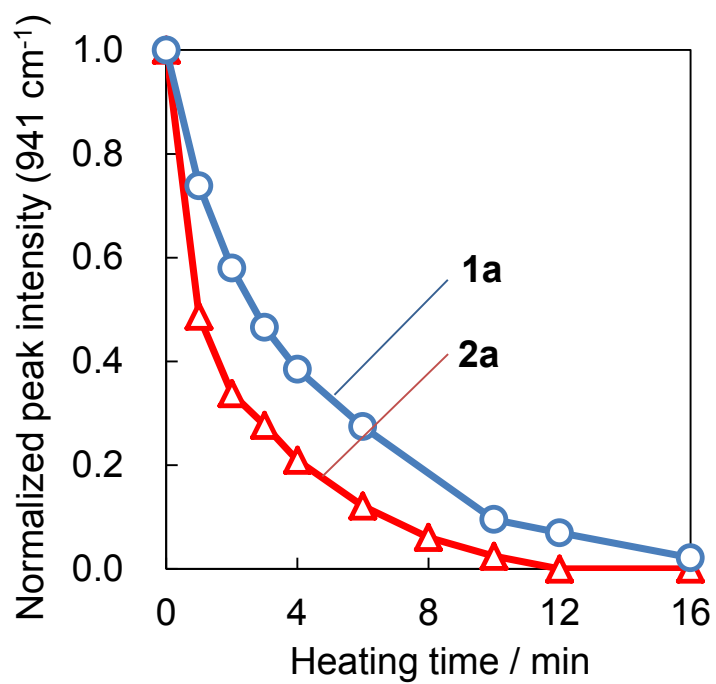


Fig. S4 Changes in peak intensities of sulfonate in the presence of 1 wt% of TsOH on a film of **1a** (blue, circle) and **2a** (red, triangle). Postbaking temperature was 140 °C.