Electronic Supplementary Material (ESI) for Polymer Chemistry.

Supporting information

Poly(propylene fumarate) Stars, Using Architecture to Reduce the Viscosity of 3D Printable Resins

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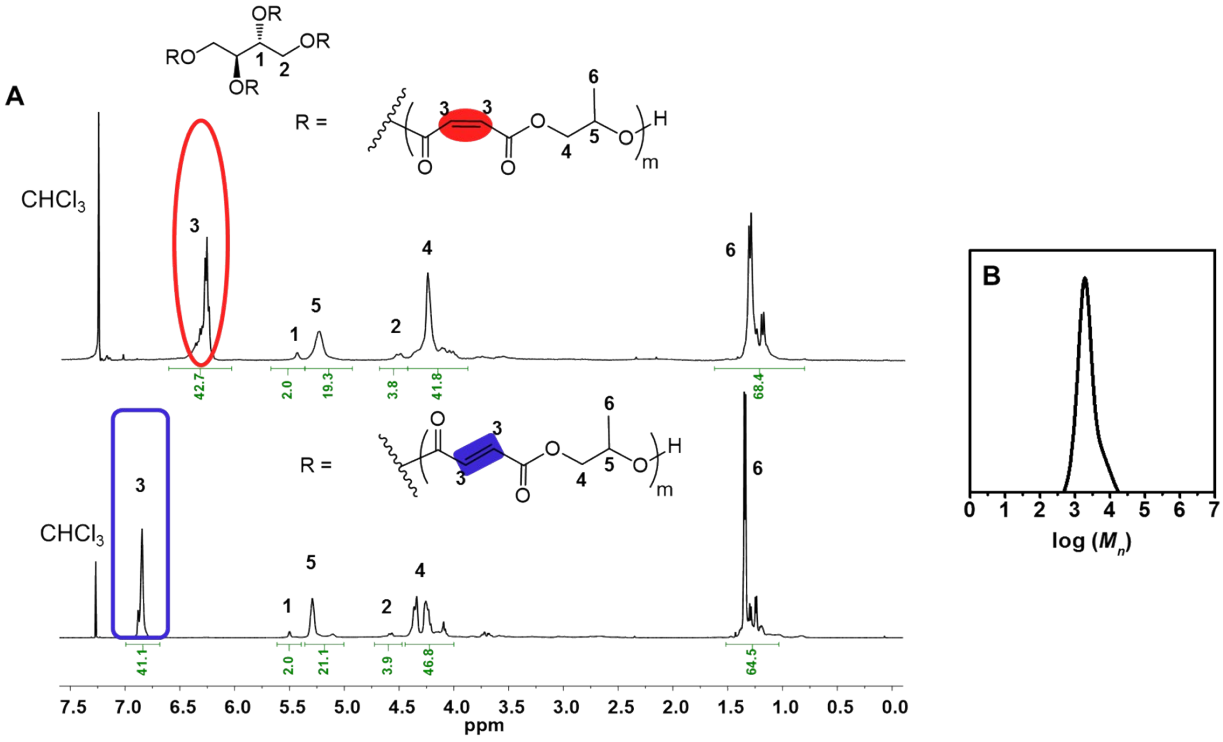

Figure S1. (A) Comparison of ^{1}H NMR spectra of four-arm star poly(propylene maleate) of a total DP20 with a *meso*-erythritol core (top) and corresponding four-arm star poly(propylene fumarate) obtained after isomerization (bottom). (B) Size exclusion chromatography profile of four-arm star poly(propylene maleate) of a total DP20 with a *meso*-erythritol core.

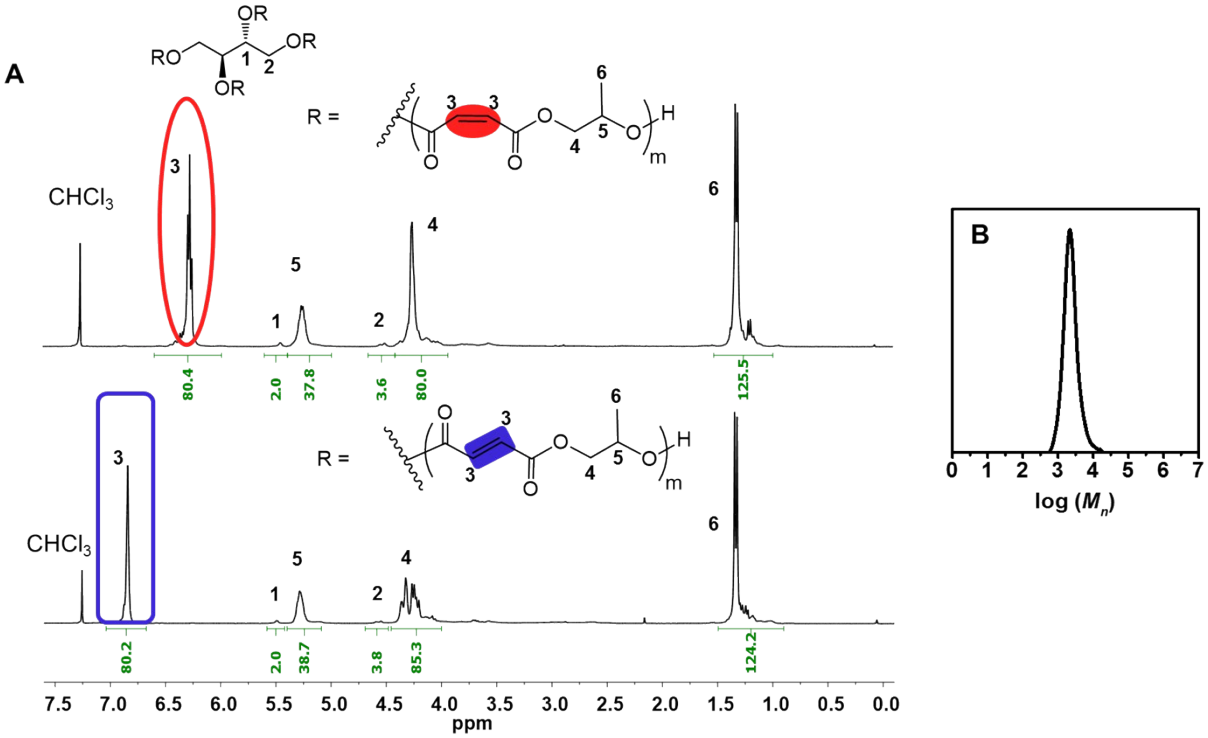

Figure S2. (A) Comparison of ^{1}H NMR spectra of four-arm star poly(propylene maleate) of a total DP40 with a *meso*-erythritol core (top) and corresponding four-arm star poly(propylene fumarate) obtained after isomerization (bottom). (B) Size exclusion chromatography profile of four-arm star poly(propylene maleate) of a total DP40 with a *meso*-erythritol core.

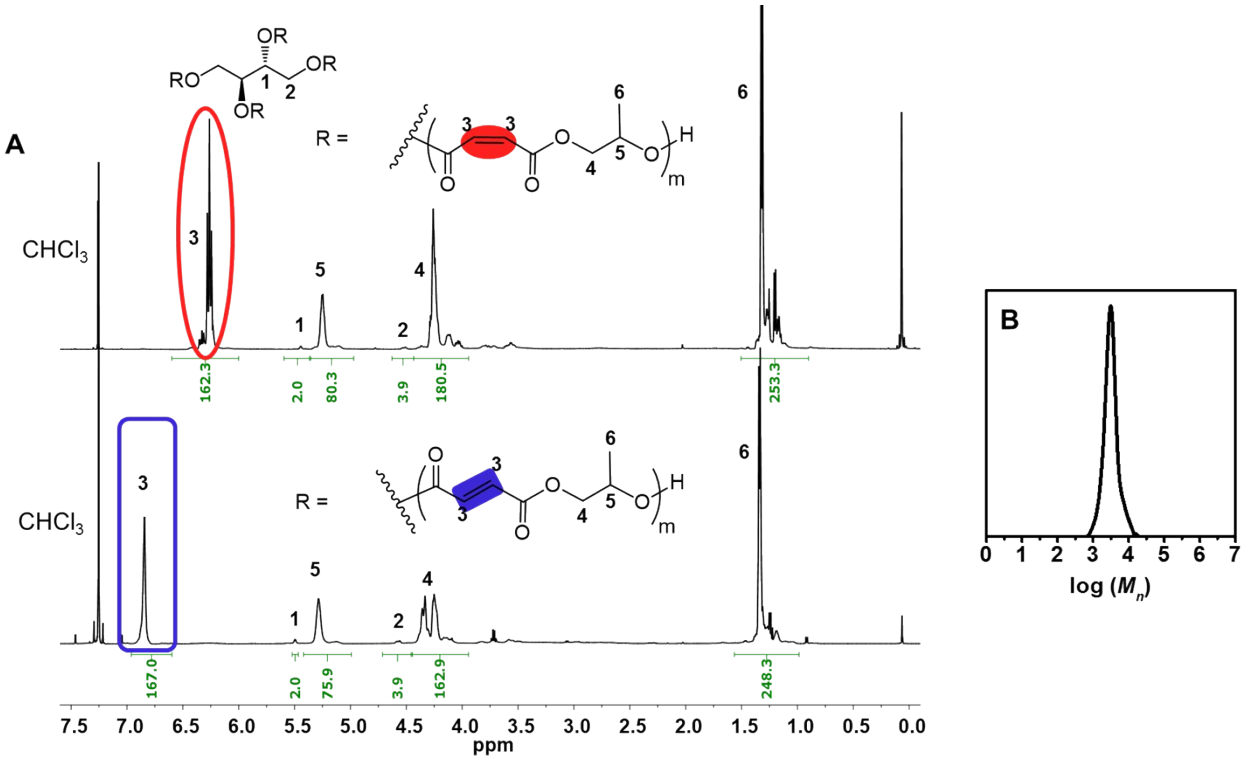

Figure S3. (A) Comparison of ^{1}H NMR spectra of four-arm star poly(propylene maleate) of a total DP80 with a *meso*-erythritol core (top) and corresponding four-arm star poly(propylene fumarate) obtained after isomerization (bottom). (B) Size exclusion chromatography profile of four-arm star poly(propylene maleate) of a total DP80 with a *meso*-erythritol core.

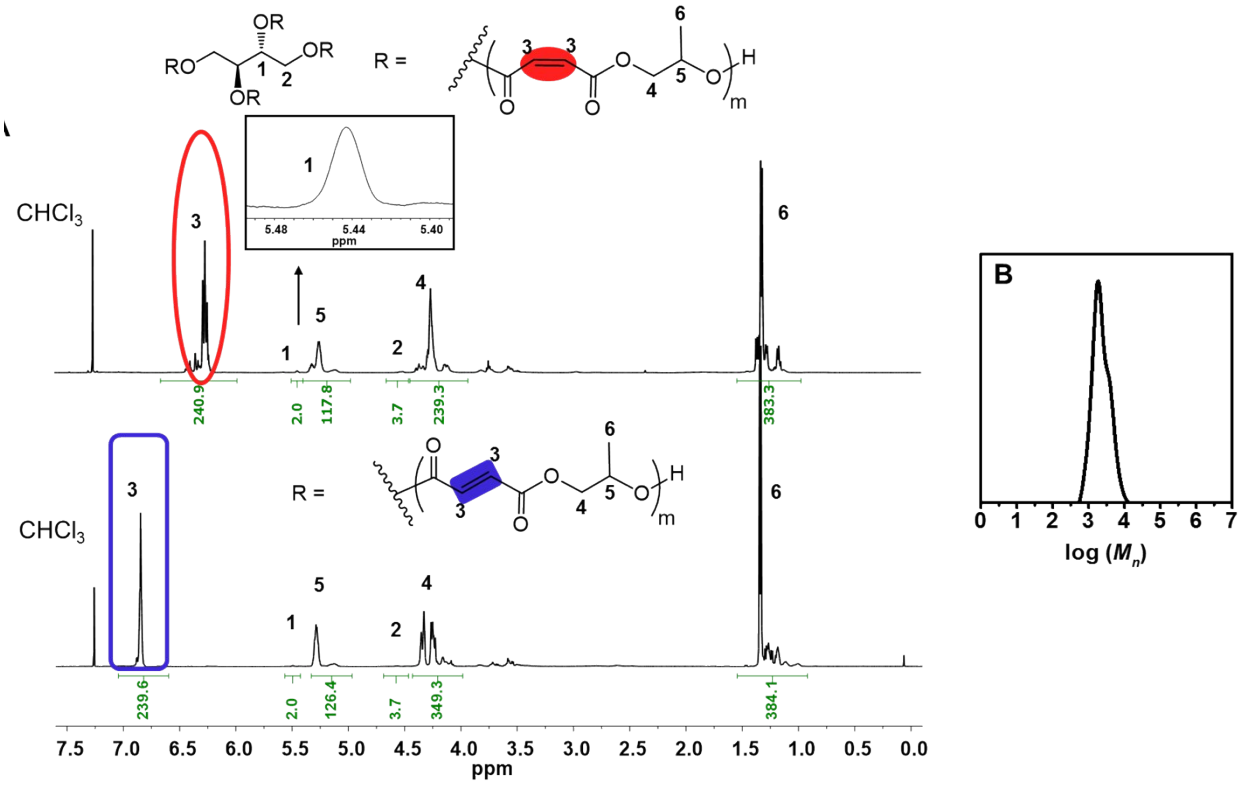

Figure S4. (A) Comparison of ^{1}H NMR spectra of four-arm star poly(propylene maleate) of a total DP120 with a *meso*-erythritol core (top) and corresponding four-arm star poly(propylene fumarate) obtained after isomerization (bottom). (B) Size exclusion chromatography profile of four-arm star poly(propylene maleate) of a total DP120 with a *meso*-erythritol core.

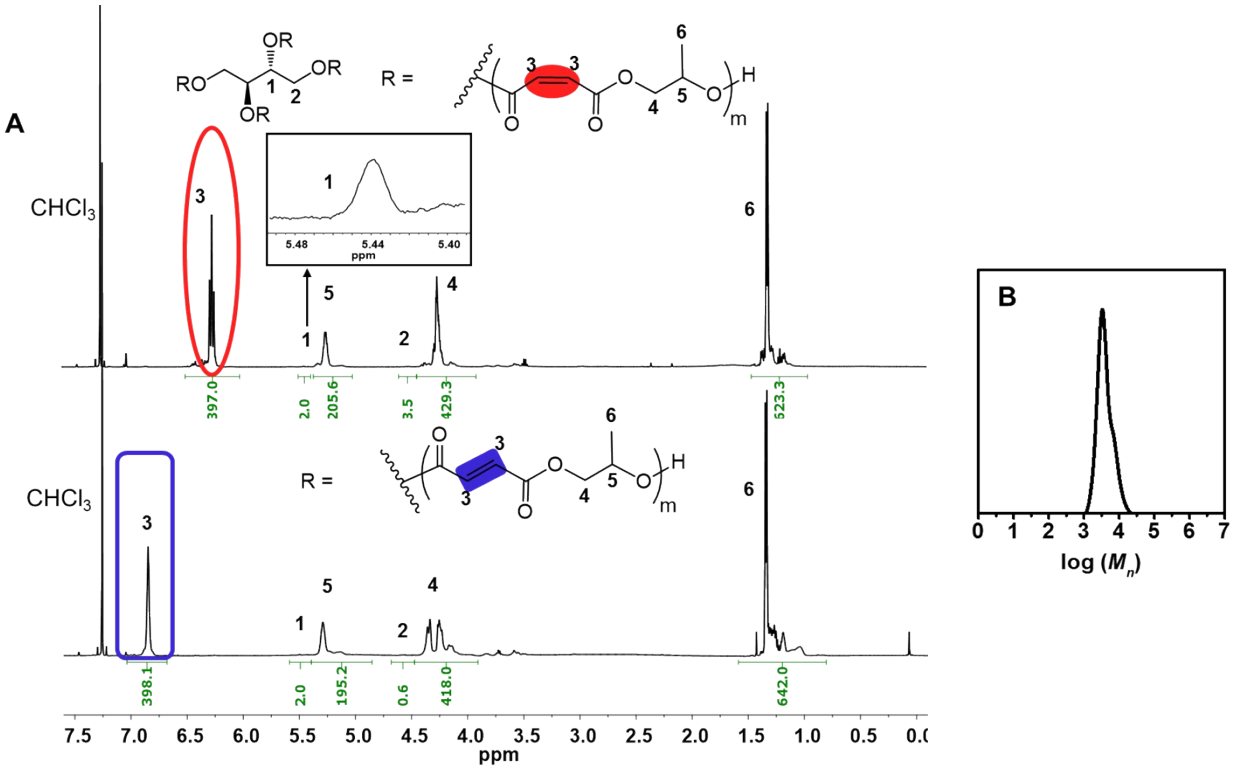

Figure S5. (A) comparison of ^{1}H NMR spectra of four-arm star poly(propylene maleate) of a total DP200 with a *meso*-erythritol core (top) and corresponding four-arm star poly(propylene fumarate) obtained after isomerization (bottom). (B) Size exclusion chromatography profile of four-arm star poly(propylene maleate) of a total DP200 with a *meso*-erythritol core.

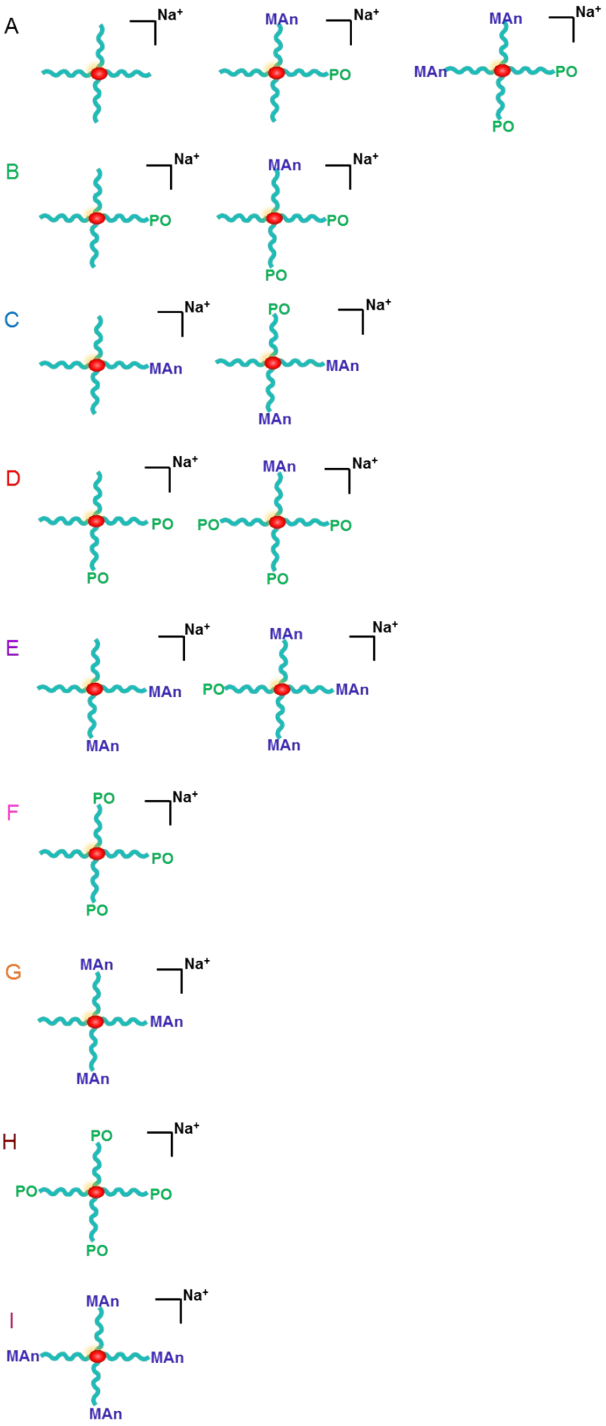

Figure S6. End-chain possibilities for each distribution from MALDI-ToF MS spectrum of four-arm poly(propylene maleate) (PPM)

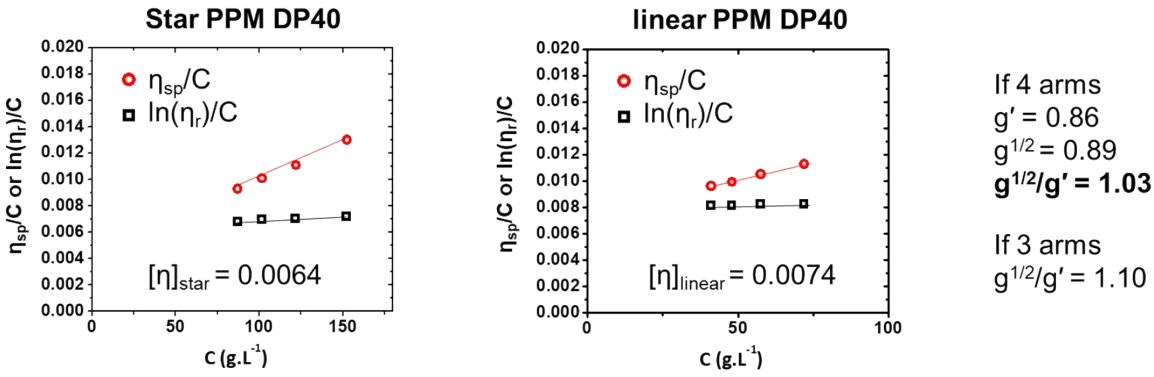

Figure S7. η_{sp}/C and $\ln(\eta_r)/C$ *versus* polymer concentration for star PPF DP40 and linear PPM DP40 solution in THF. Calculation of $g^{1/2}/g'$ ratios corresponding to three or four arms demonstrating the synthesis of four-arm PPF.

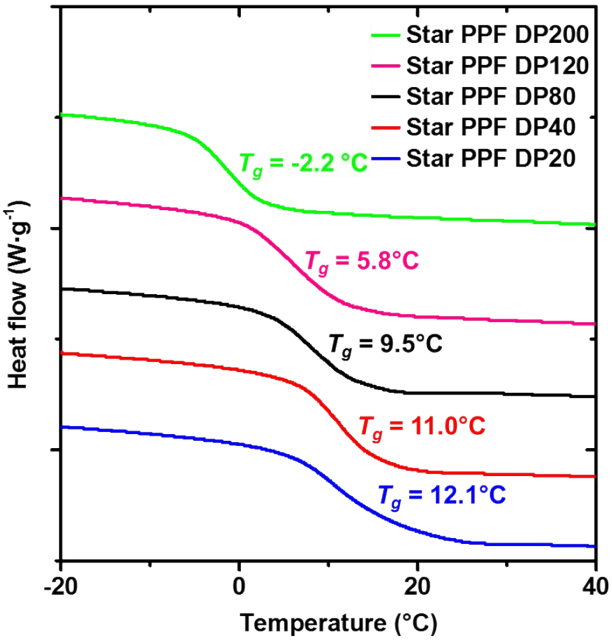

Figure S8. Differential scanning calorimetry (DSC) traces for PPF star polymers. Temperature scan rate was 10 °C·min^{-1}.