

Supplementary data for article :

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Supporting information

Simple one-pot synthesis of fully bio-based unsaturated polyester resins based on itaconic acid

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Prepolymer: ^1H NMR (CDCl_3 , 400 MHz): δ 1.22 (d, 0.79H, $J=6.1$ Hz, end group), 1.30 (d, 3H, $J=6.1$ Hz), 2.20 (s, 0.18H, mesaconate), 3.30 (s, 2H), 3.54 (m, 0.22H, end group), 3.87 (s, 0.52H, end group), 3.97 (s, 1H), 4.14 (s, 1H), 5.08 (m, 1H), 5.67 (s, 1H), 6.27 (s, 1H), 6.61 (s, 0.06H, mesaconate). $^{13}\text{C}\{^1\text{H}\}$ NMR (CDCl_3 , 100 MHz): δ 14.1 (mesaconate), 18.7, 37.5, 65.4 (end-group), 67.2, 71.7, 73.9 (end-group), 124.1 (mesaconate), 126.3, 135.9, 143.7 (mesaconate), 164.3 (mesaconate), 165.8 168.1

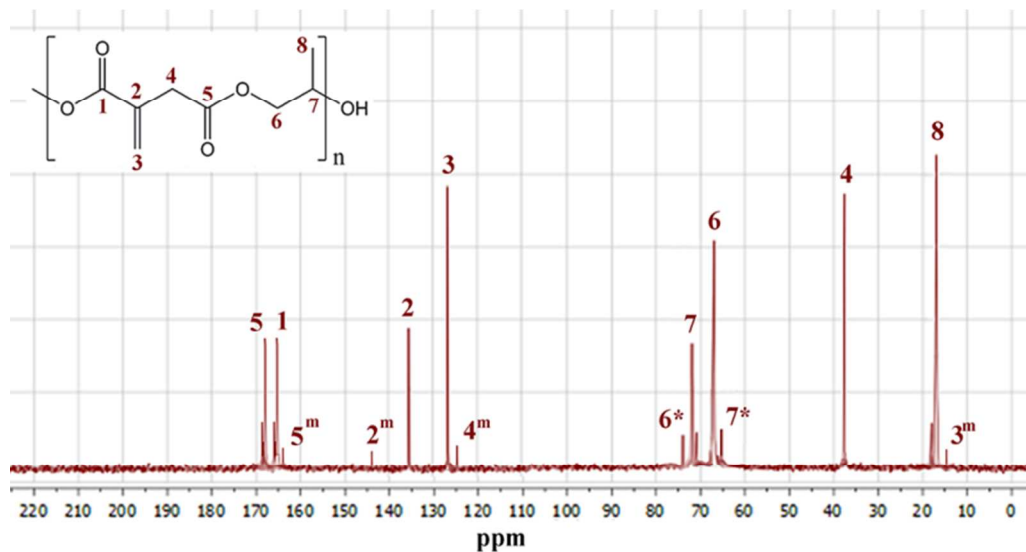


Figure S1. ^{13}C NMR spectra of prepolymer. Peaks marked with * are the protons of the end-groups; Peaks marked with ^m are the protons of the mesaconate moiety.

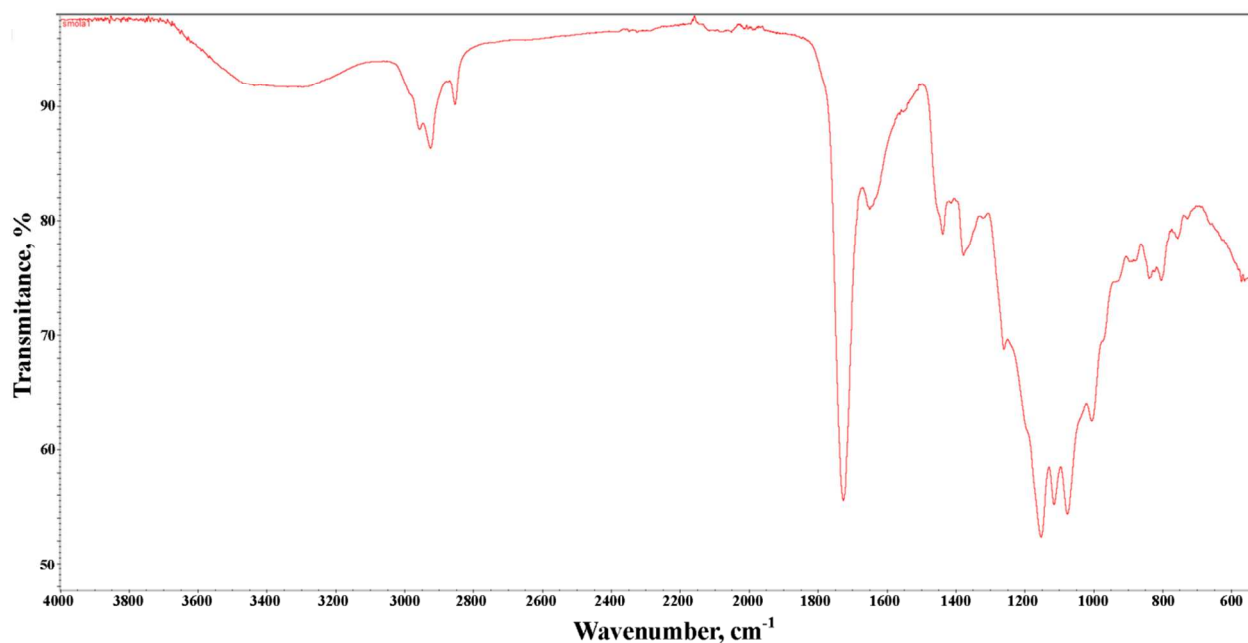
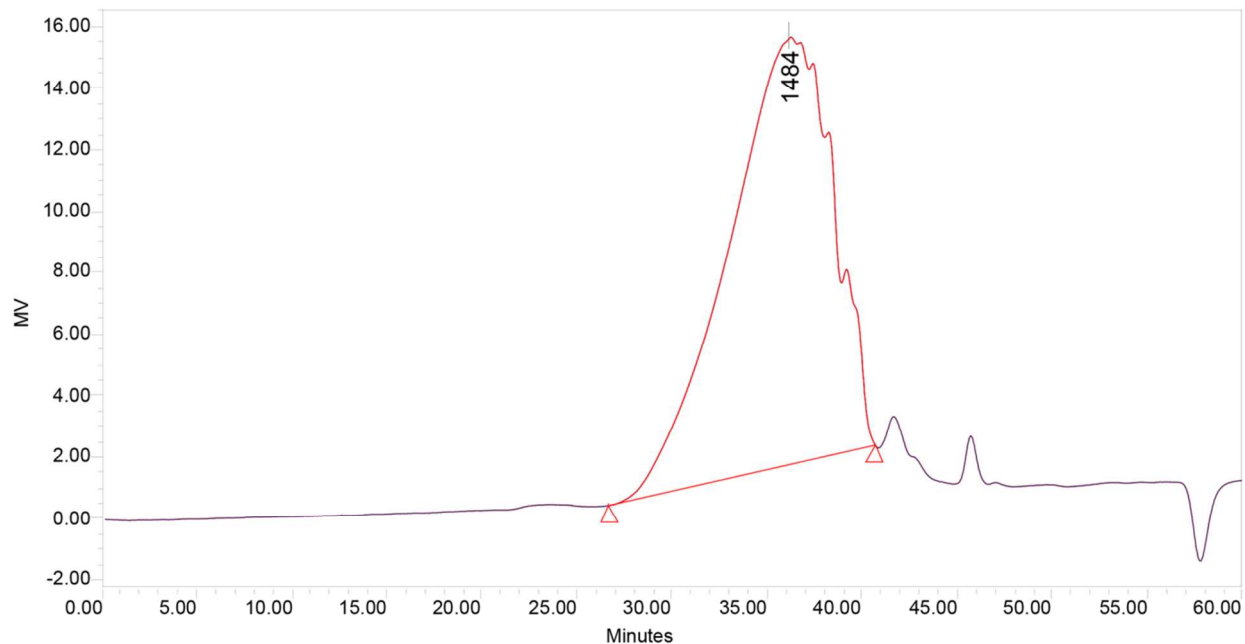


Figure S2. The FTIR spectra of prepolymer



GPC Results

	Dist Name	Elution Volume (ml)	Retention Time (min)	Adjusted RT (min)	Mn	Mw	MP	Mz	Mz+1	Mz/Mw
1		36.185	36.185	36.185	1254	3234	1484	7733	14157	2.391354

Figure S3. GPC chromatogram of prepolymer

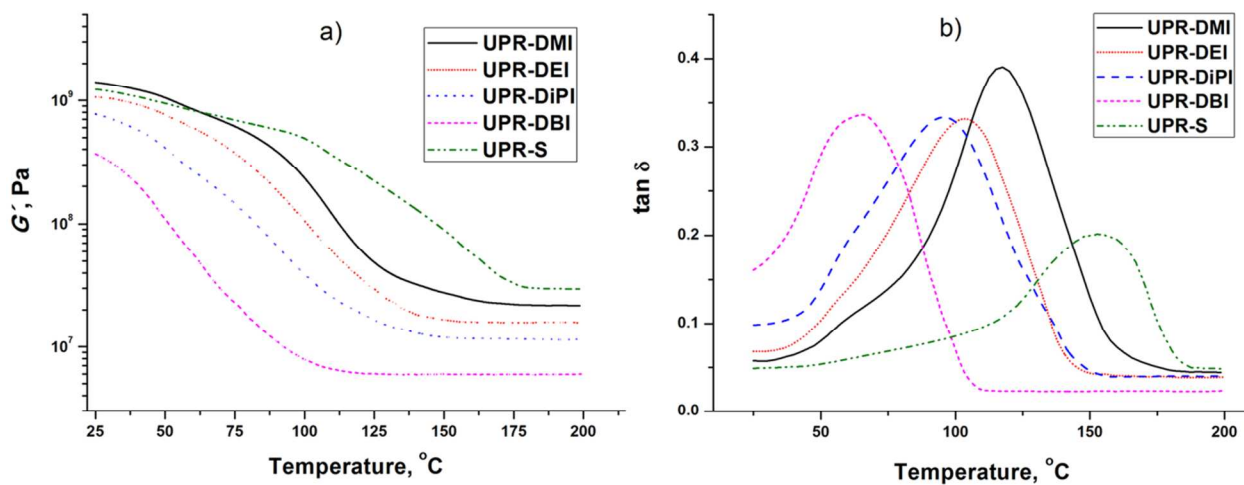


Figure S4. The dependences of (a) the storage modulus and (b) the loss tangent of the cured resins on temperature

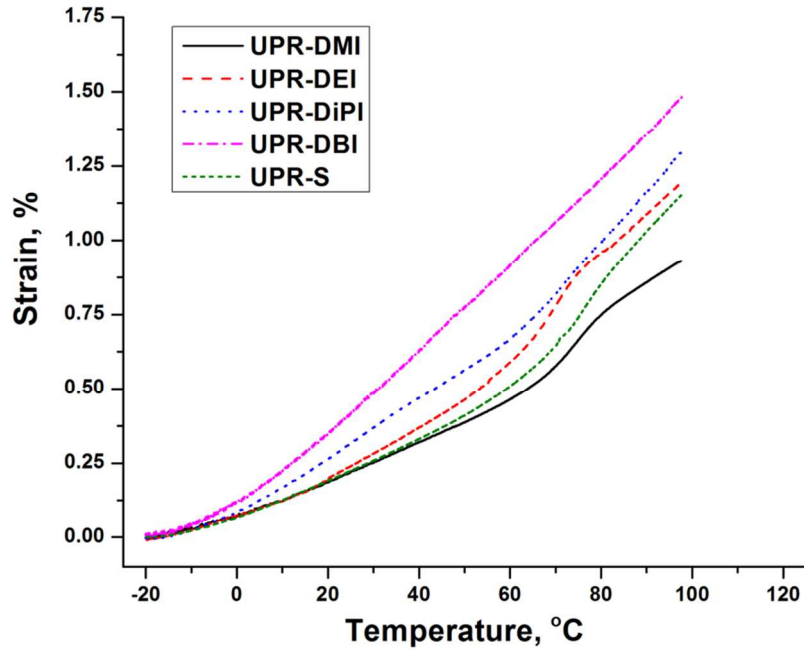


Figure S5. Strain change with temperature for prepared UPRs

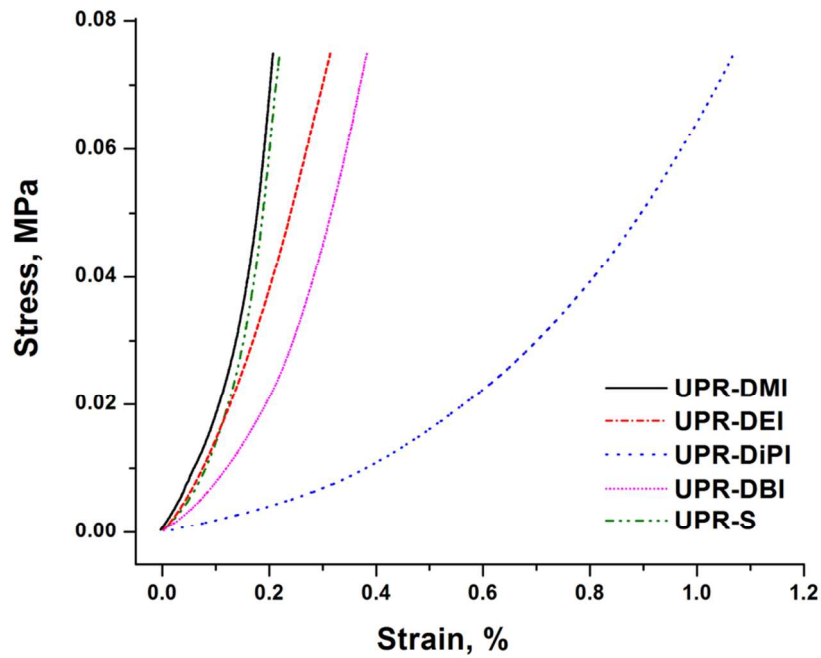


Figure S6. Stress vs. strain curves of prepared UPRs under compressive loading