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Supplementary Material

Sequential Modification of ADMET Polyketone via Oxime Chemistry and Electrophilic Alkoxyetherification

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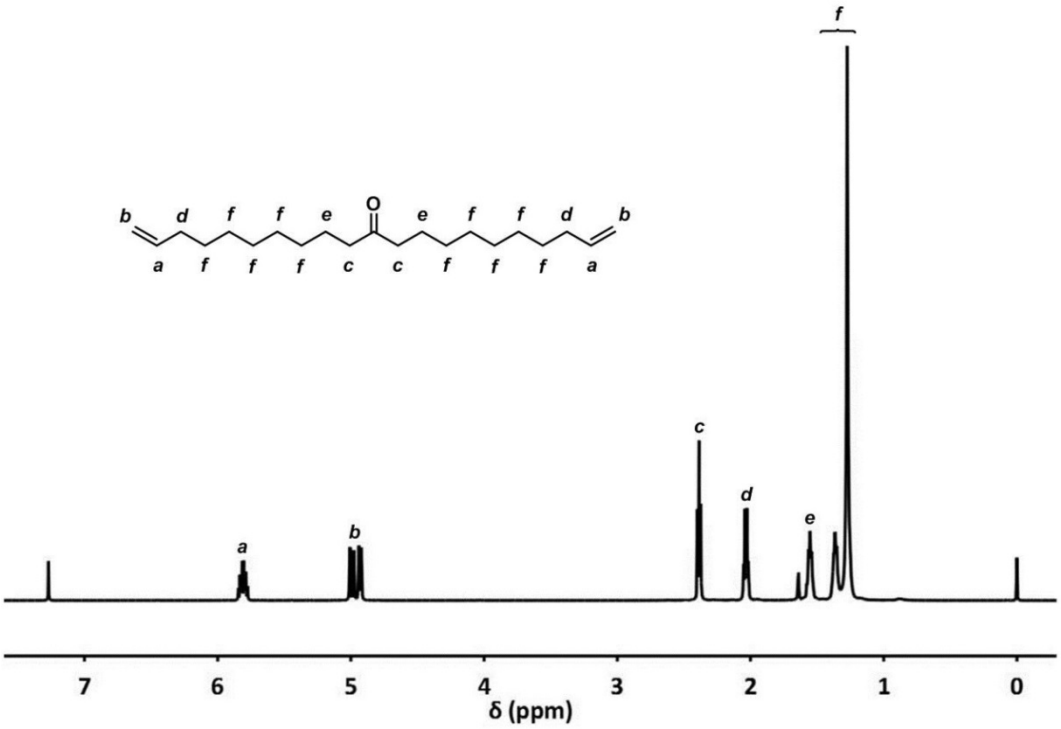

Fig. S1. ^{1}H NMR spectrum of ADMET monomer **M0** in $CDCl_3$.

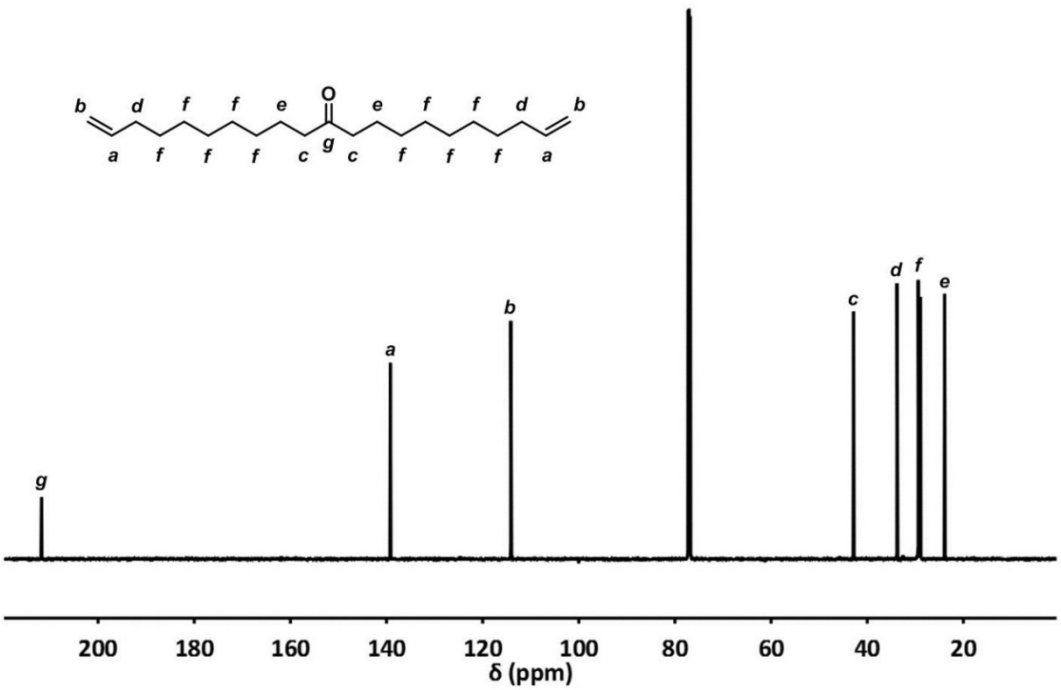

Fig. S2. ^{13}C NMR spectrum of ADMET monomer **M0** in $CDCl_3$.

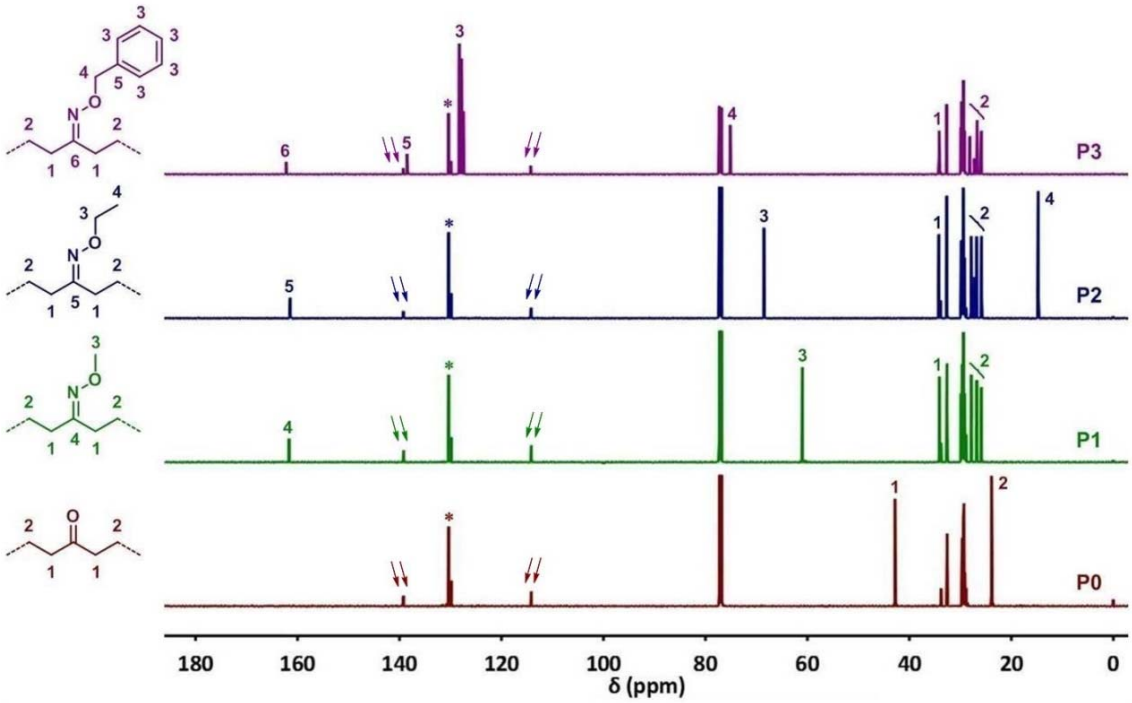

Fig. S3. ^{13}C NMR spectra of **P0**-**P3** in $CDCl_3$ (characteristic structures shown only). The asterisk- and arrow-labeled signals correspond to internal and terminal alkenes, respectively. Signal of carbonyl group of **P0** appears at 211.75 ppm (not included in the figure).

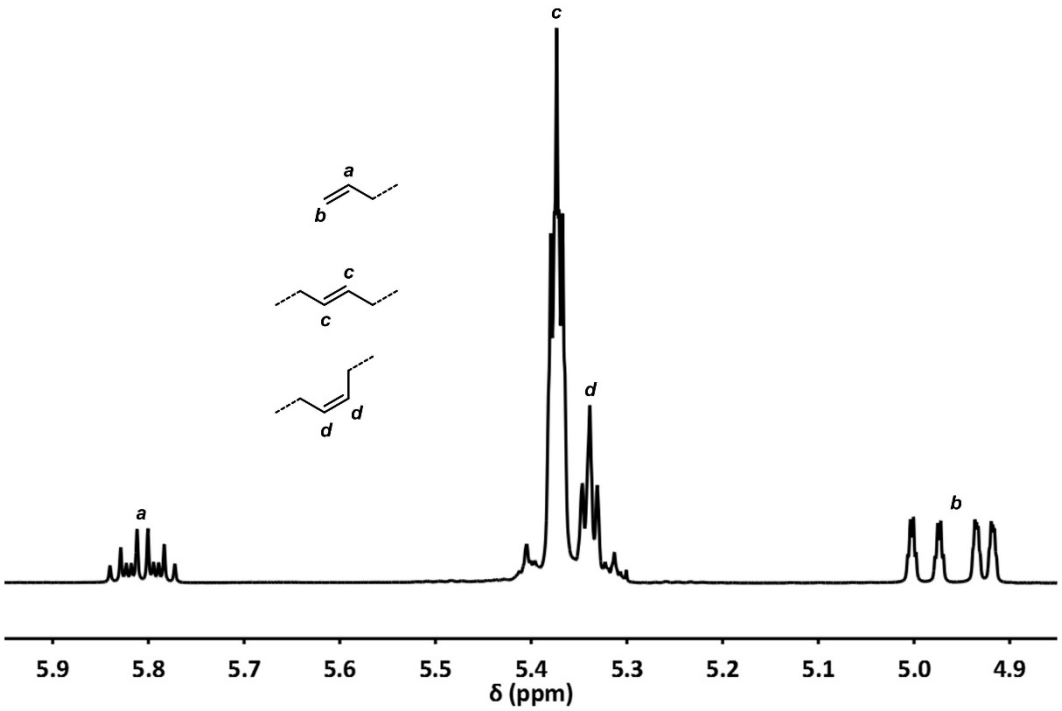

Fig. S4. Terminus analysis for **P0** based on related ^{1}H NMR spectrum (olefinic signals shown only).

$M_{n,NMR}$ is calculated based on the integration ratio between signals of internal alkene protons (peak c+d at 5.30-5.41 ppm) and terminal alkene protons (peak a at 5.77-5.84 ppm or peak b at 4.90-5.02 ppm), so that

$$M_{n,NMR} = \text{theoretical repeating unit mass} \times (S_{c+d}/S_a + 1) + \text{terminuses}$$

$$\text{Or } M_{n,NMR} = \text{theoretical repeating unit mass} \times (2S_{c+d}/S_b + 1) + \text{terminuses}$$

And, theoretical repeating unit mass = 278, terminuses = 28.

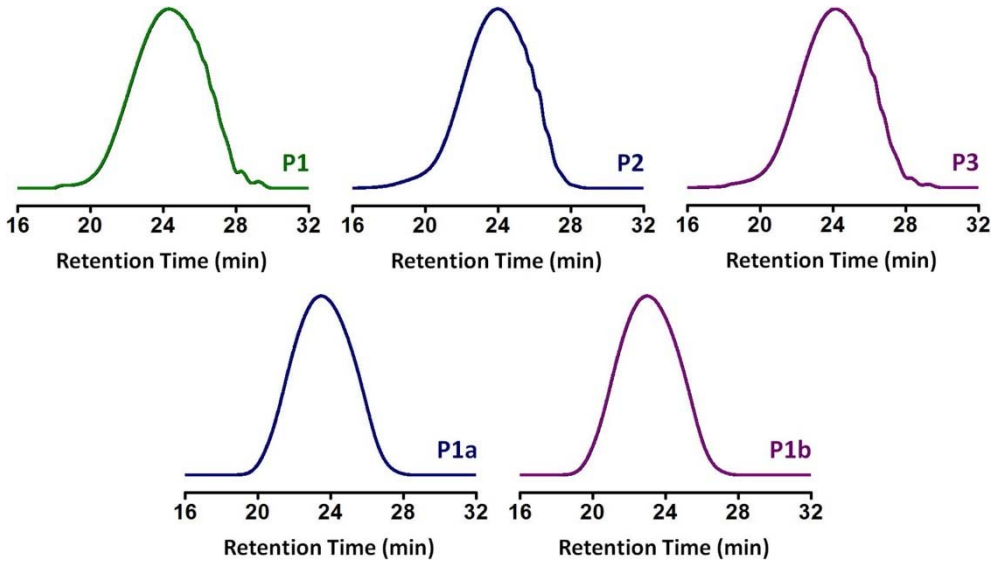

Fig. S5. GPC traces of **P1**-**P3**, **P1a** and **P1b** using THF (35 ^{o}C, 1 mL/min) as the eluent.

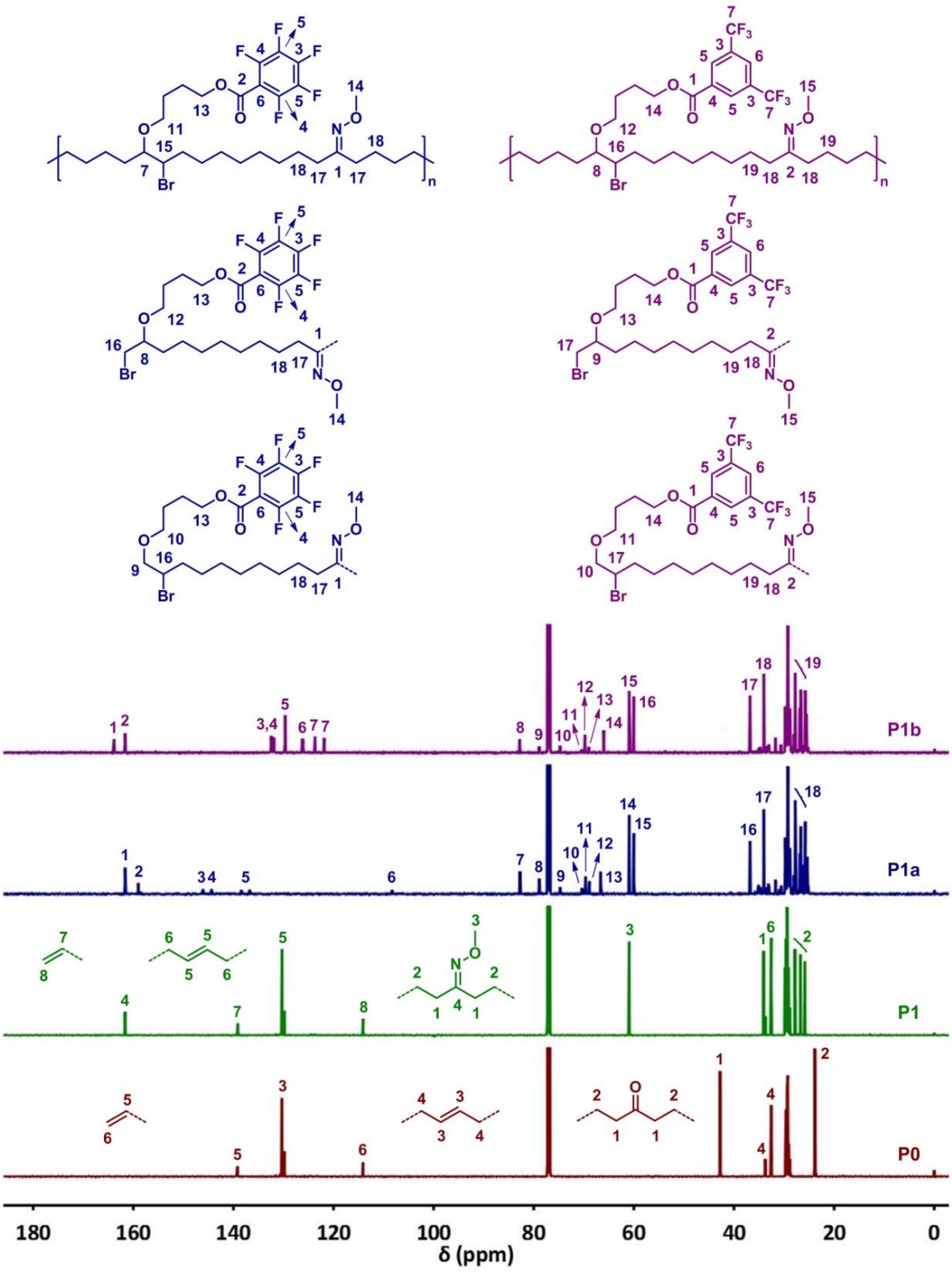

Fig. S6. ^{13}C NMR spectra of polymers **P0**, **P1**, **P1a** and **P1b** in $CDCl_3$. Characteristic microstructures of **P1a** and **P1b** are shown with two types of terminuses.

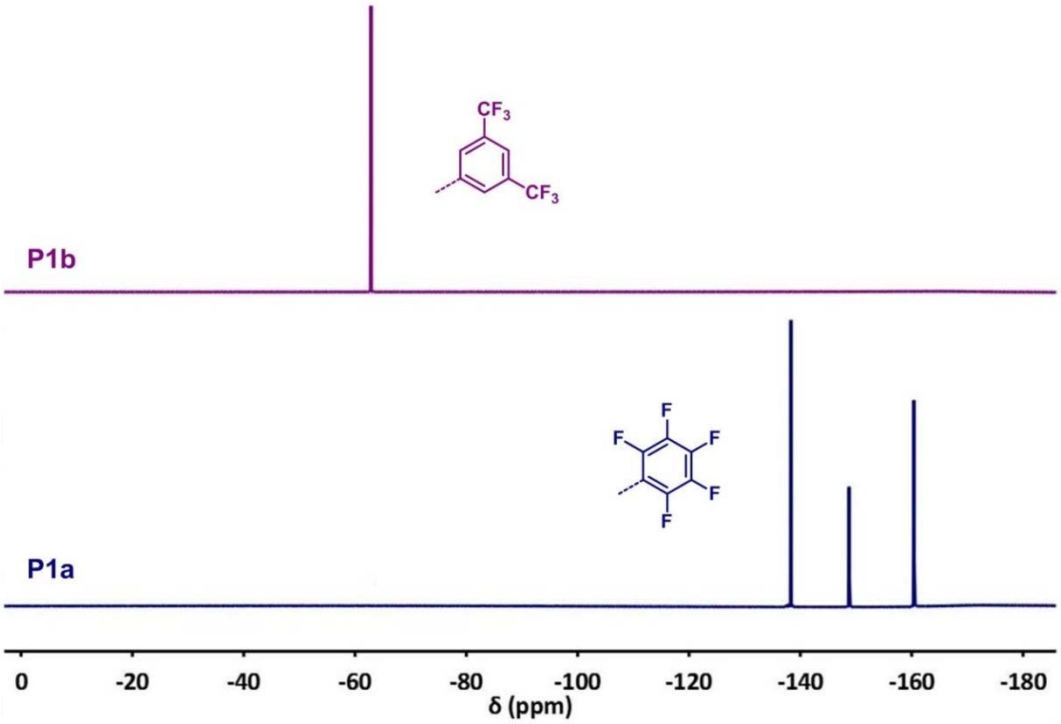

Fig. S7. ^{19}F NMR spectra of **P1a** and **P1b** by using trifluoroacetic acid as the external reference.

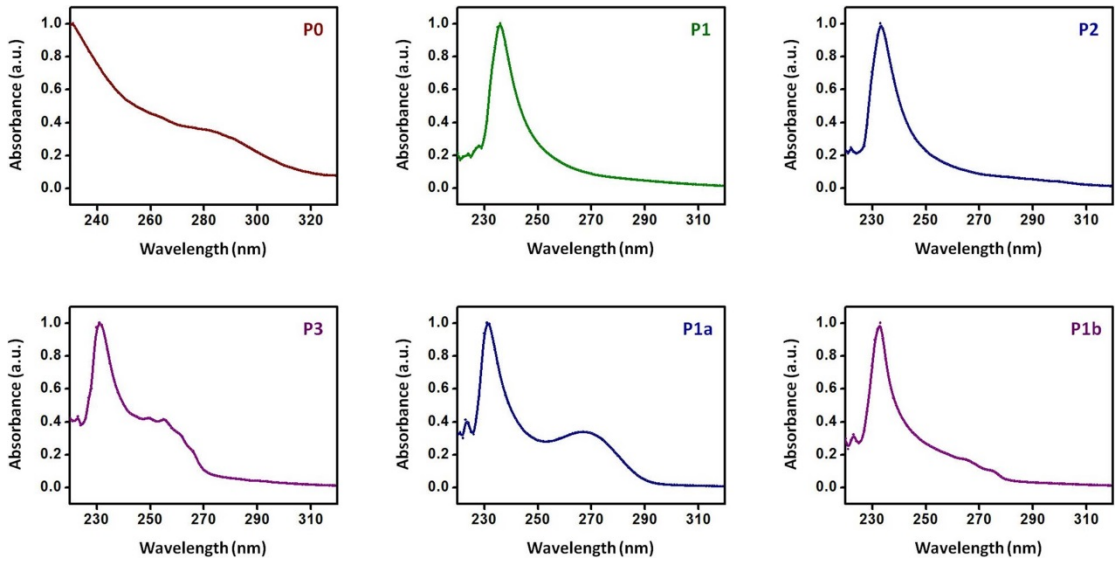

Fig. S8. UV-Vis spectra of all the polymer samples in $CHCl_3$ at room temperature.

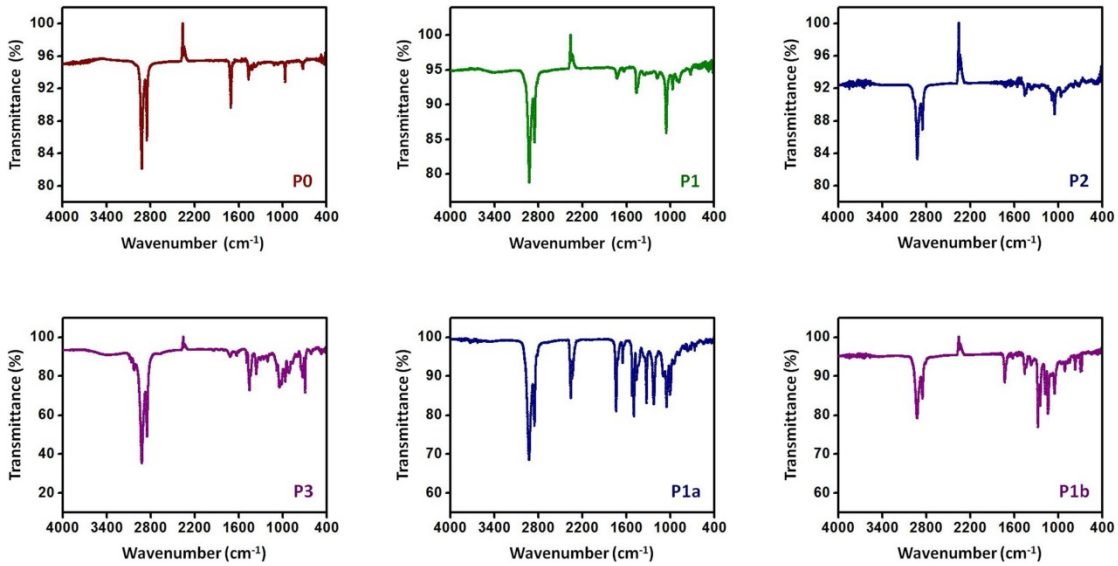

Fig. S9. IR spectra of all the polymer samples.

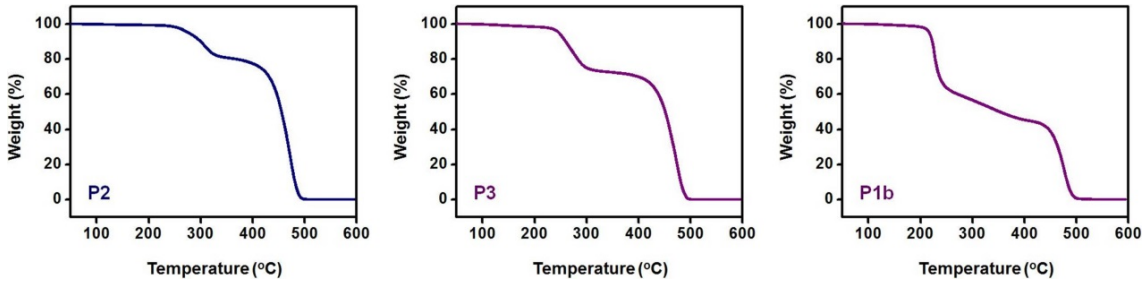

Fig. S10. TGA curves of **P2**, **P3** and **P1b**.