Supporting Information

Closed-loop chemically recyclable aromatic polyesters based on asymmetric dicarboxylates obtainable from lignocellulose

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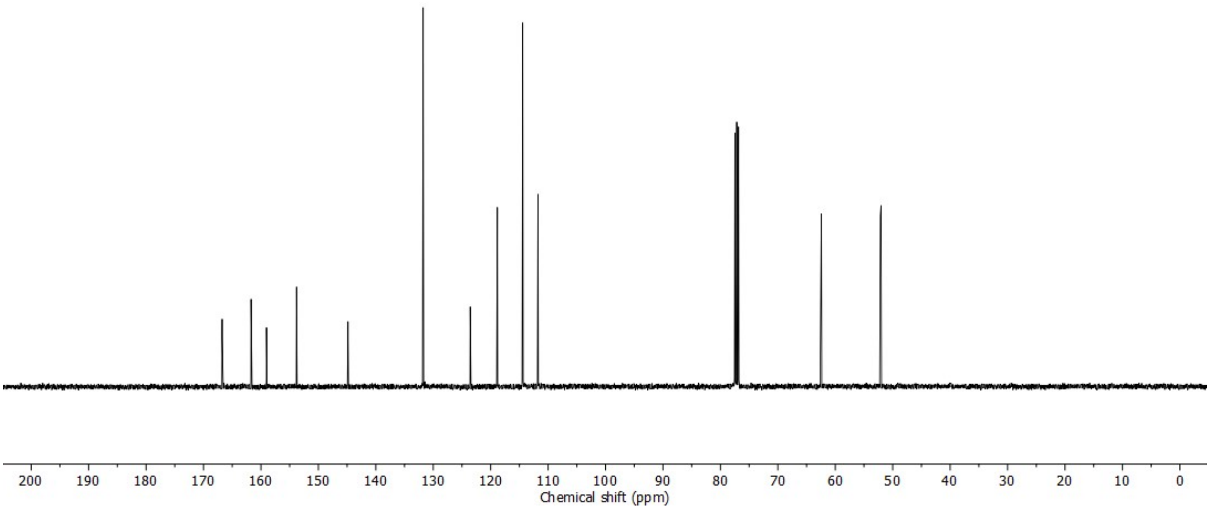


Figure S1. ^{13}C NMR spectrum of monomer M1.

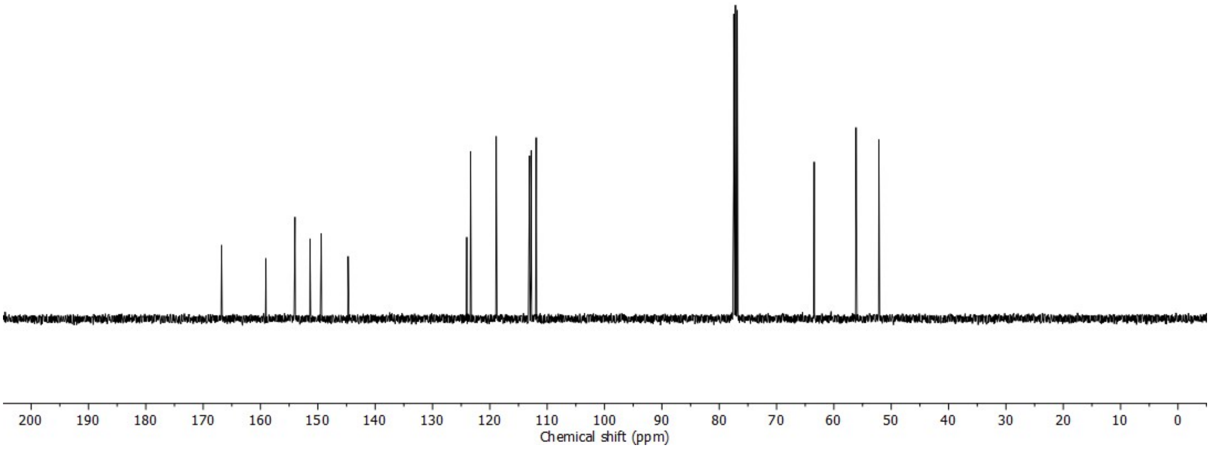


Figure S2. ^{13}C NMR spectrum of monomer M2.

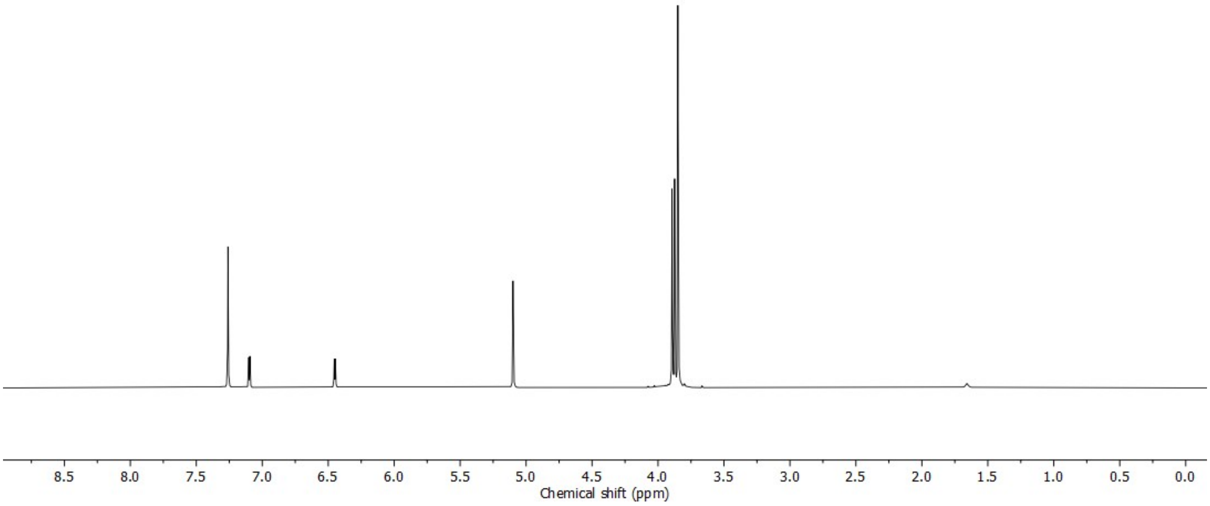


Figure S3. ^{1}H NMR spectrum of monomer M3.

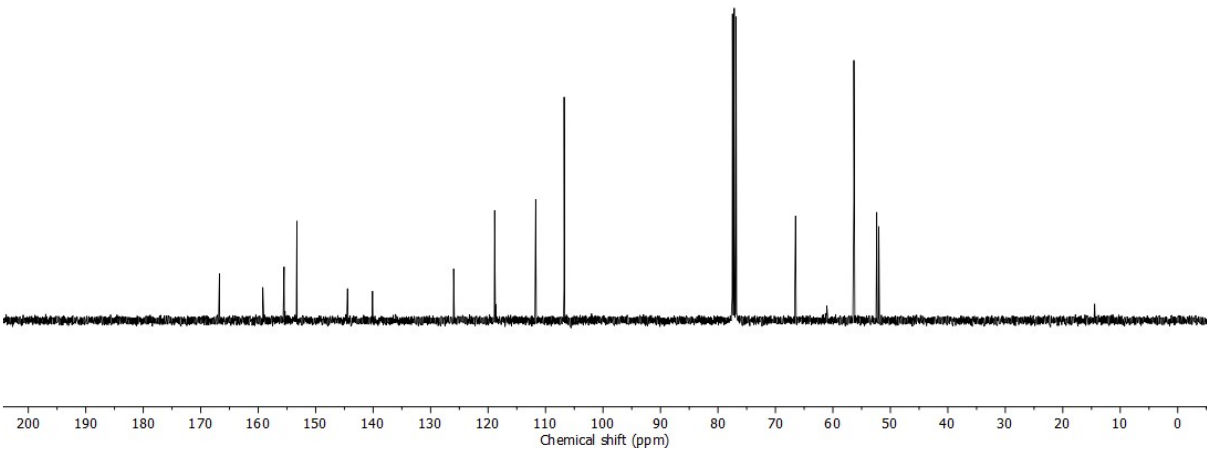


Figure S4. ^{13}C NMR spectrum of monomer M3.

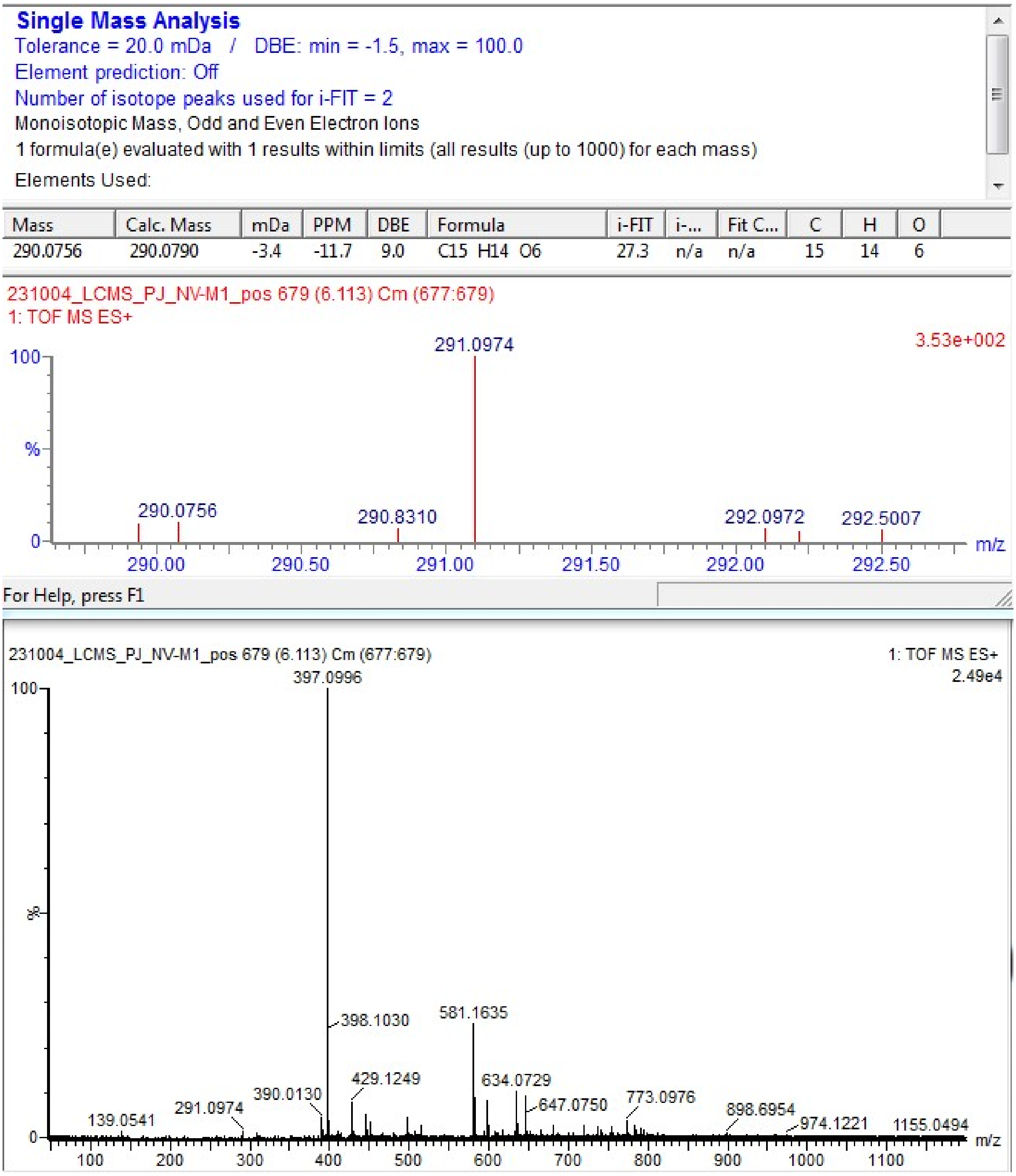
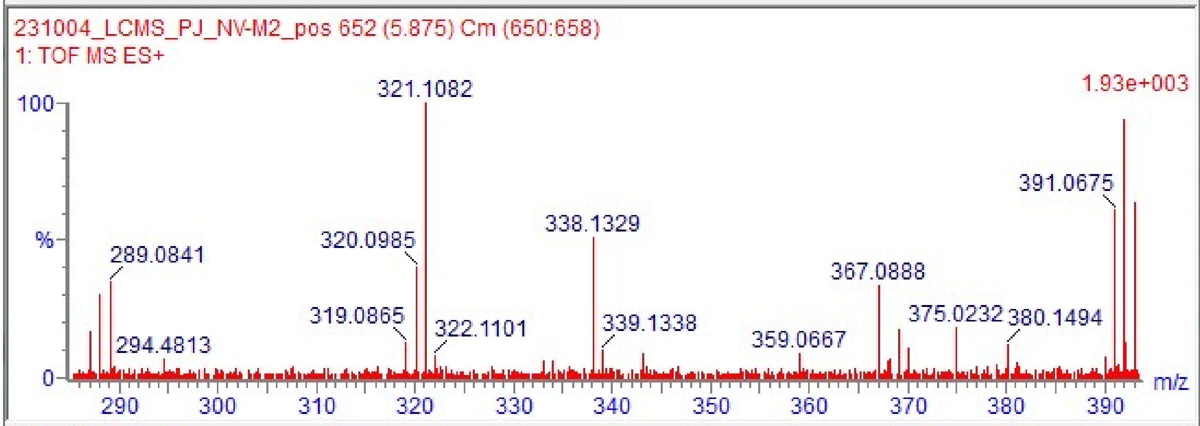


Figure S5. HRMS data of monomer M1.

Single Mass Analysis
Tolerance = 20.0 mDa / DBE: min = -1.5, max = 100.0
Element prediction: Off
Number of isotope peaks used for i-FIT = 2
Monoisotopic Mass, Odd and Even Electron Ions
1 formula(e) evaluated with 1 results within limits (all results (up to 1000) for each mass)
Elements Used:

Mass	Calc. Mass	mDa	PPM	DBE	Formula	i-FIT	i-FI...	Fit Co...	C	H	O
320.0985	320.0896	8.9	27.8	9.0	C16 H16 O7	113.4	n/a	n/a	16	16	7



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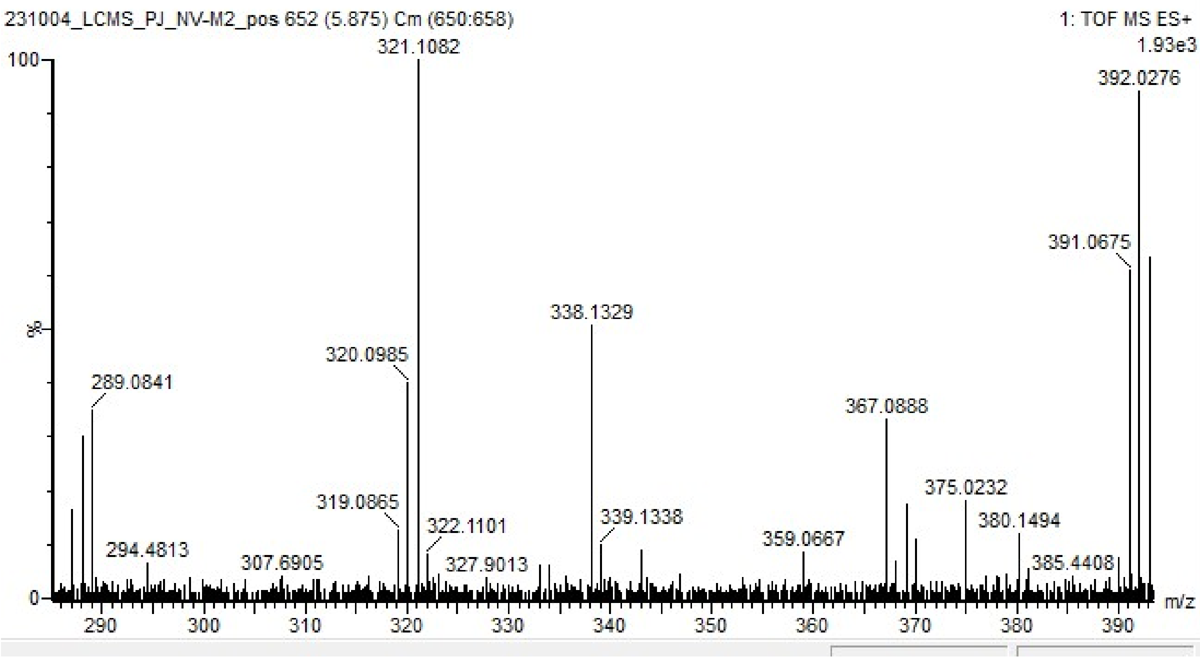

Figure S6. HRMS data of monomer M2.

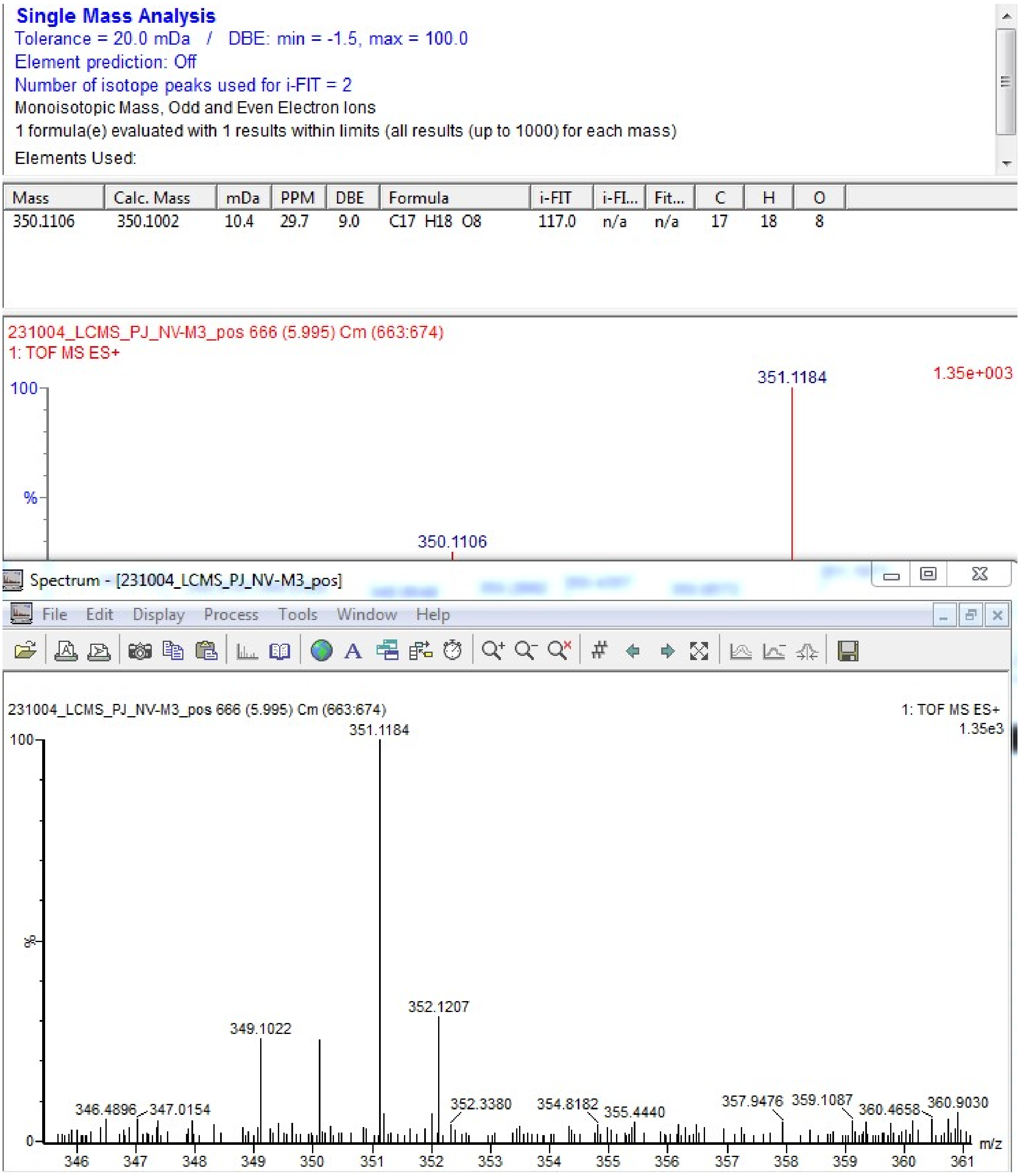

Figure S7. HRMS data of monomer M3.

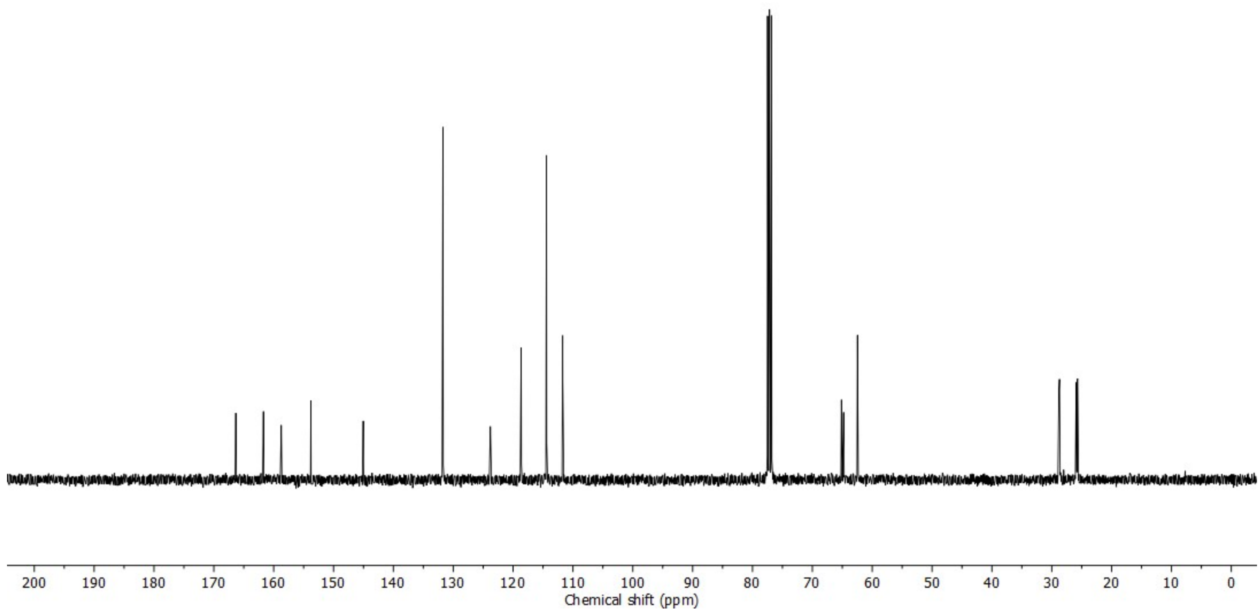

Figure S8. ^{13}C NMR spectrum of polyester P1a.

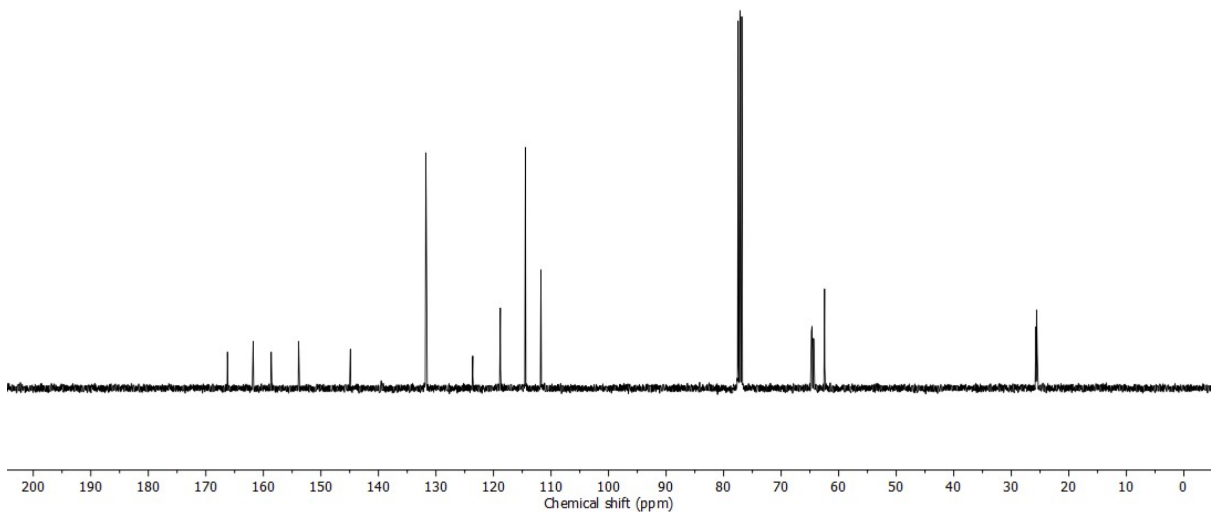

Figure S9. ^{13}C NMR spectrum of polyester P1b.

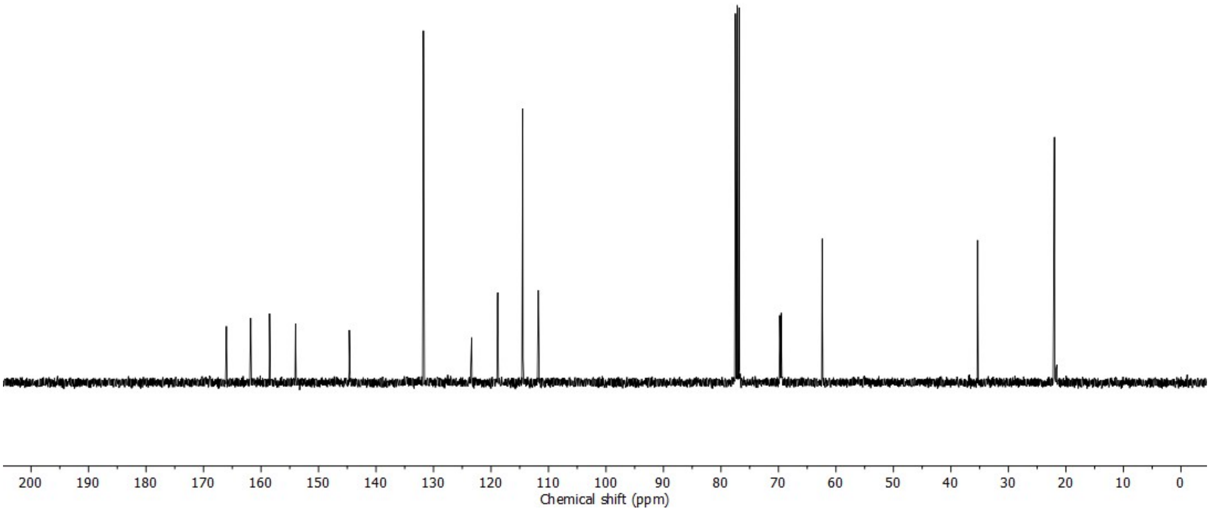

Figure S10. ^{13}C NMR spectrum of polyester P1c.

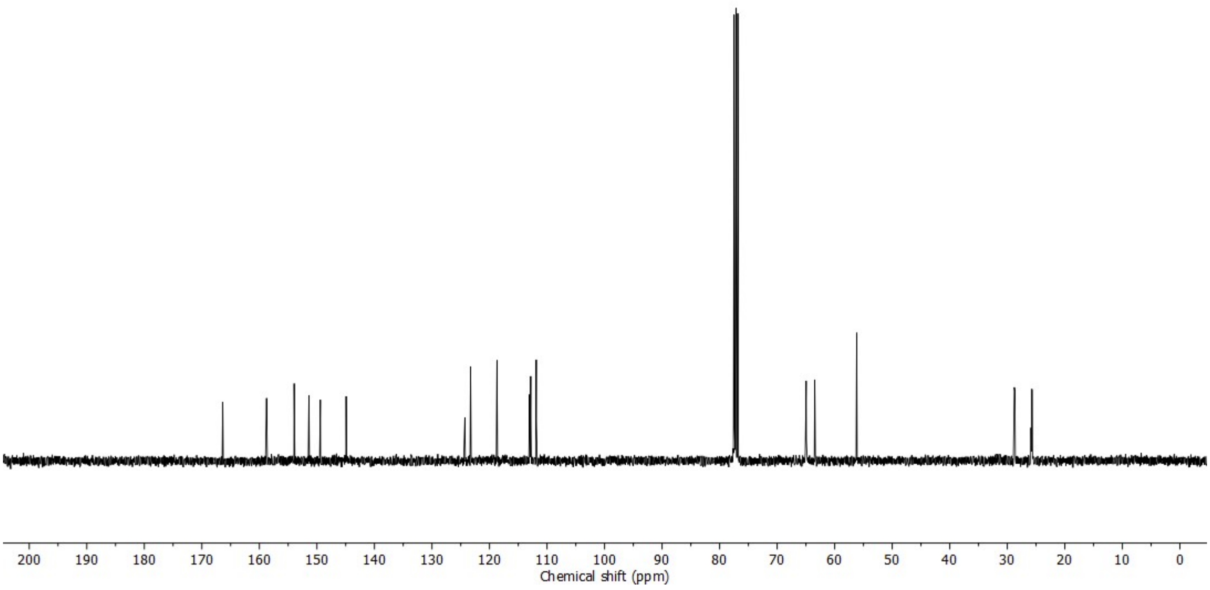

Figure S11. ^{13}C NMR spectrum of polyester P2a.

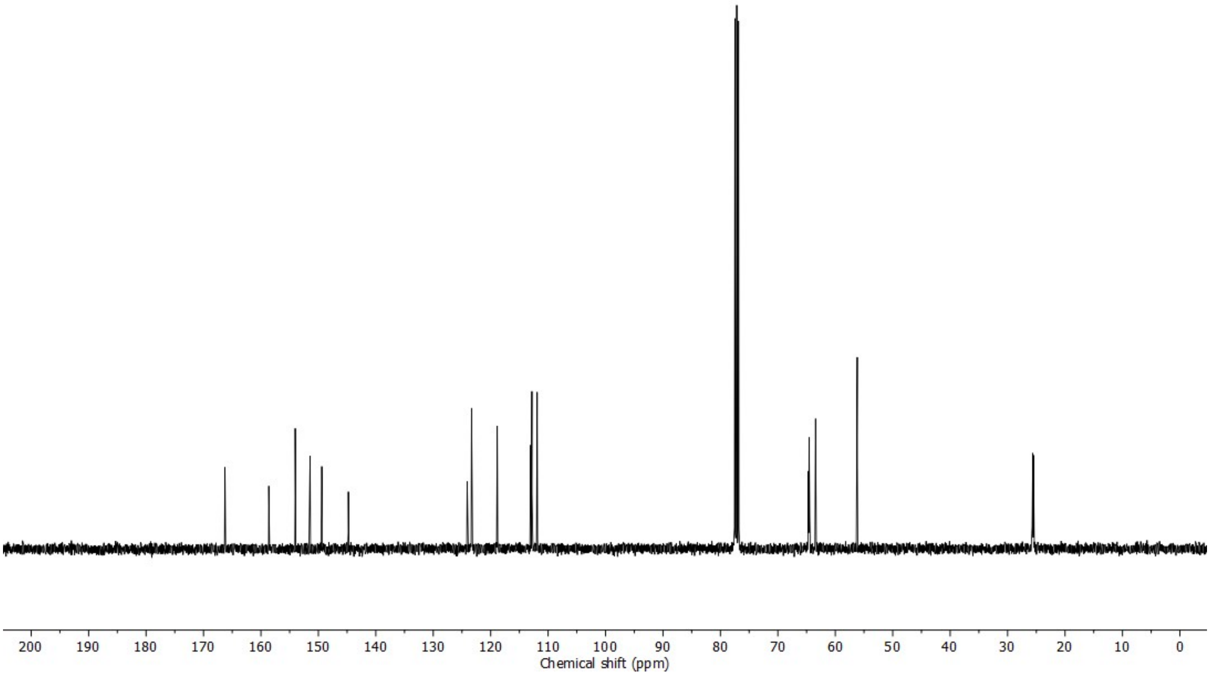

Figure S12. ^{13}C NMR spectrum of polyester P2b.

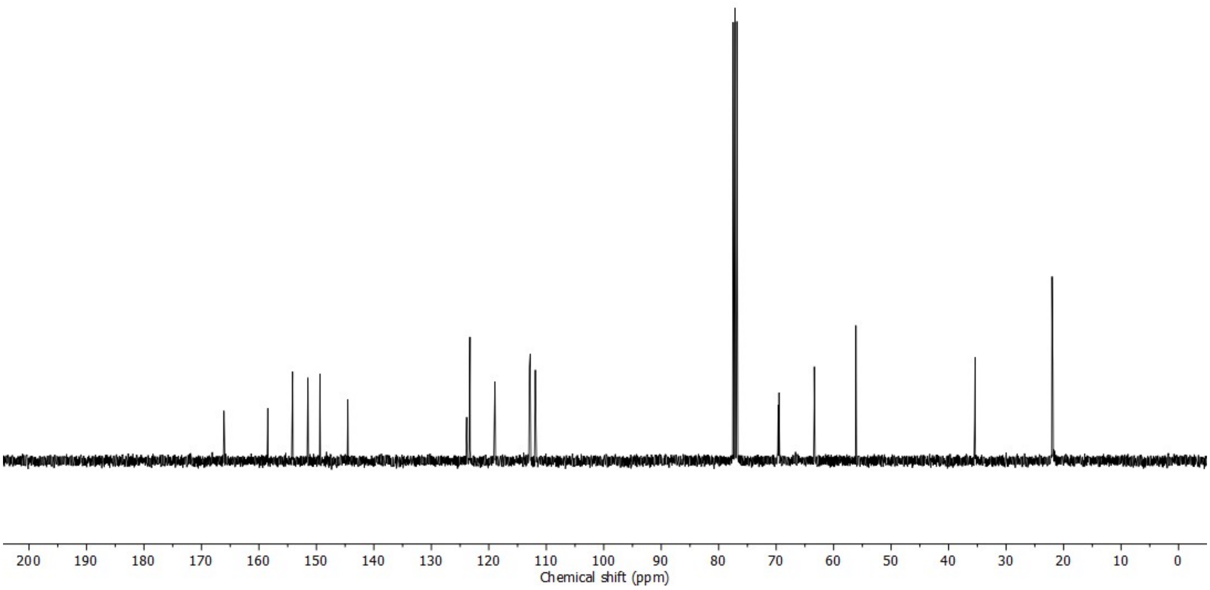

Figure S13. ^{13}C NMR spectrum of polyester P2c.

Calculation of the monomer recovery yields:

Diester monomer (r-M2):

$$Theoretical\ wt. = \frac{Wt.\ of\ the\ polymer}{MW\ of\ the\ repeating\ unit}\ x\ MW\ of\ the\ r-M2$$

$$Theoretical\ wt. = \frac{4.0}{374.39}\ x\ 320.3$$

$$Theoretical\ wt. = 3.42\ gm$$

$$Yield\ of\ the\ r-M2 = \frac{Wt.\ of\ r-M2}{Theoretical\ wt.\ of\ r-M2}\ x\ 100$$

$$Yield\ of\ the\ r-M2 = \frac{2.53}{3.42}\ x\ 100$$

$$Yield\ of\ the\ r-M2 = 74\%$$

Diol monomer (r-1,6-HD):

$$Theoretical\ wt. = \frac{Wt.\ of\ the\ polymer}{MW\ of\ the\ repeating\ unit}\ x\ MW\ of\ the\ r-1{,}6-HD$$

$$Theoretical\ wt. = \frac{4.0}{374.39}\ x\ 118.18$$

$$Theoretical\ wt. = 1.26\ gm$$

$$Yield\ of\ the\ r-1{,}6-HD = \frac{Wt.\ of\ the\ r-1{,}6-HD}{Theoretical\ wt.\ of\ r-1{,}6-HD}\ x\ 100$$

$$Yield\ of\ the\ r-1{,}6-HD = \frac{0.91}{1.26}\ x\ 100$$

$$Yield\ of\ the\ r-1{,}6-HD = 72\%$$