

Supplementary Materials

Ferrocene-Containing Conjugated Oligomers Synthesized by Acyclic Diene Metathesis Polymerization

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1. ^1H , ^{13}C NMR spectra and HRMS spectra of monomers and oligomer A

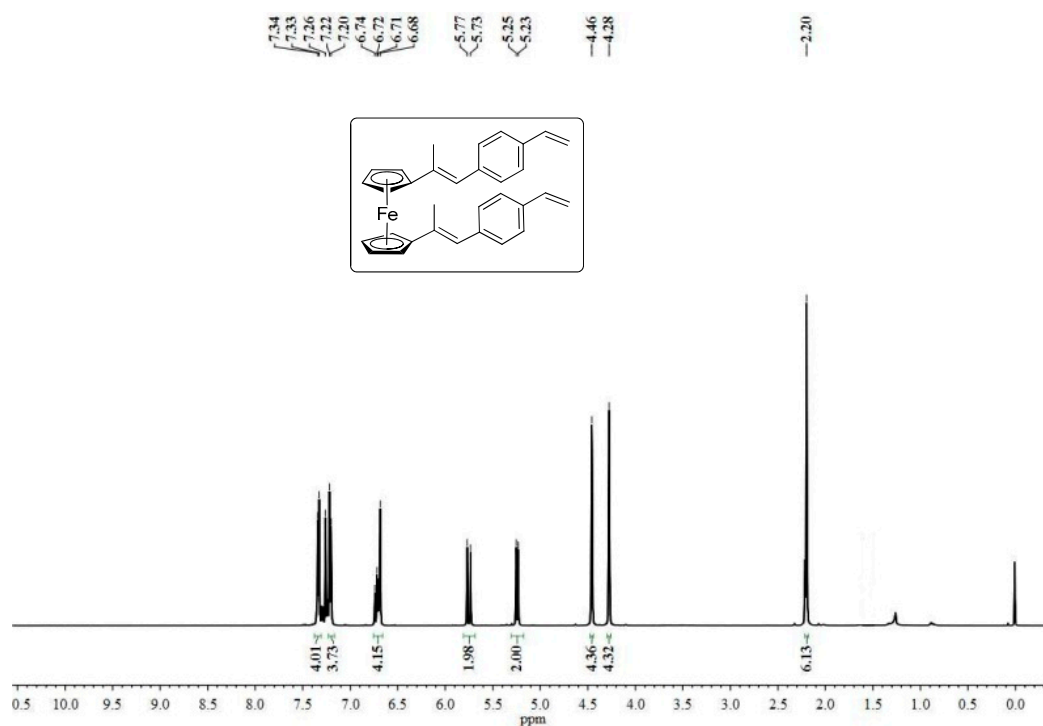


Figure S1 ^1H NMR (500 MHz) spectrum of monomer A measured in CDCl_3 at 25 °C.

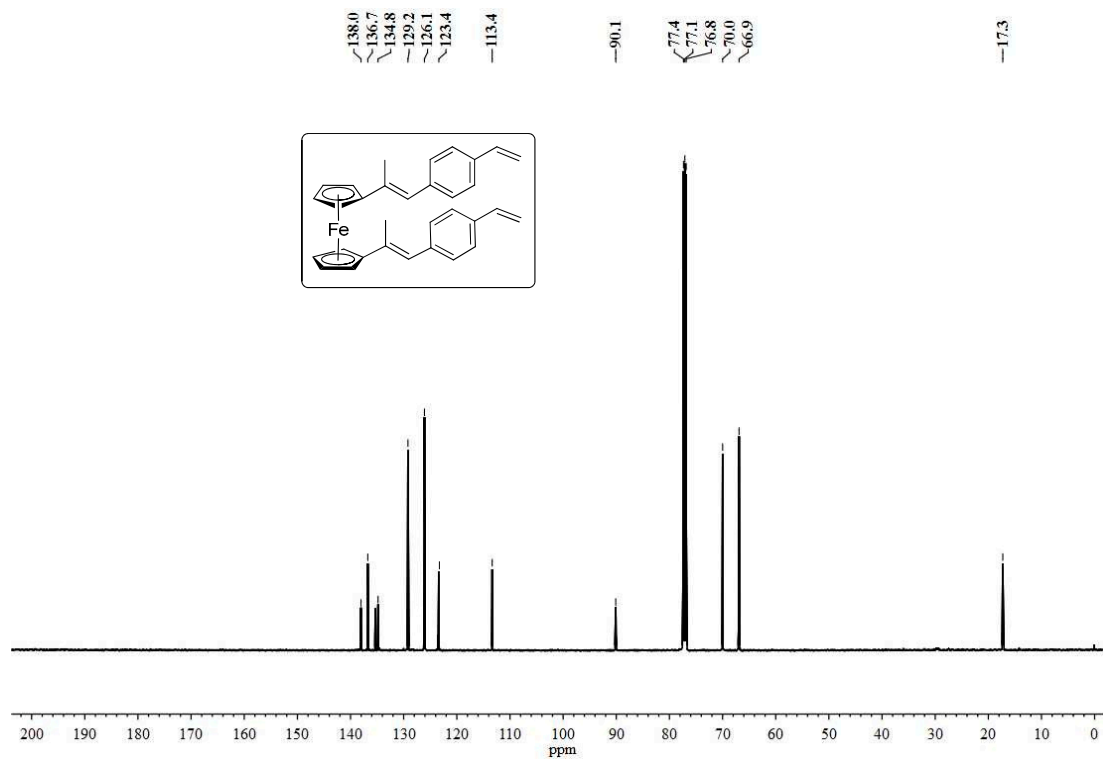


Figure S2 ^{13}C NMR (126 MHz) spectrum of monomer A measured in CDCl_3 at 25 °C.

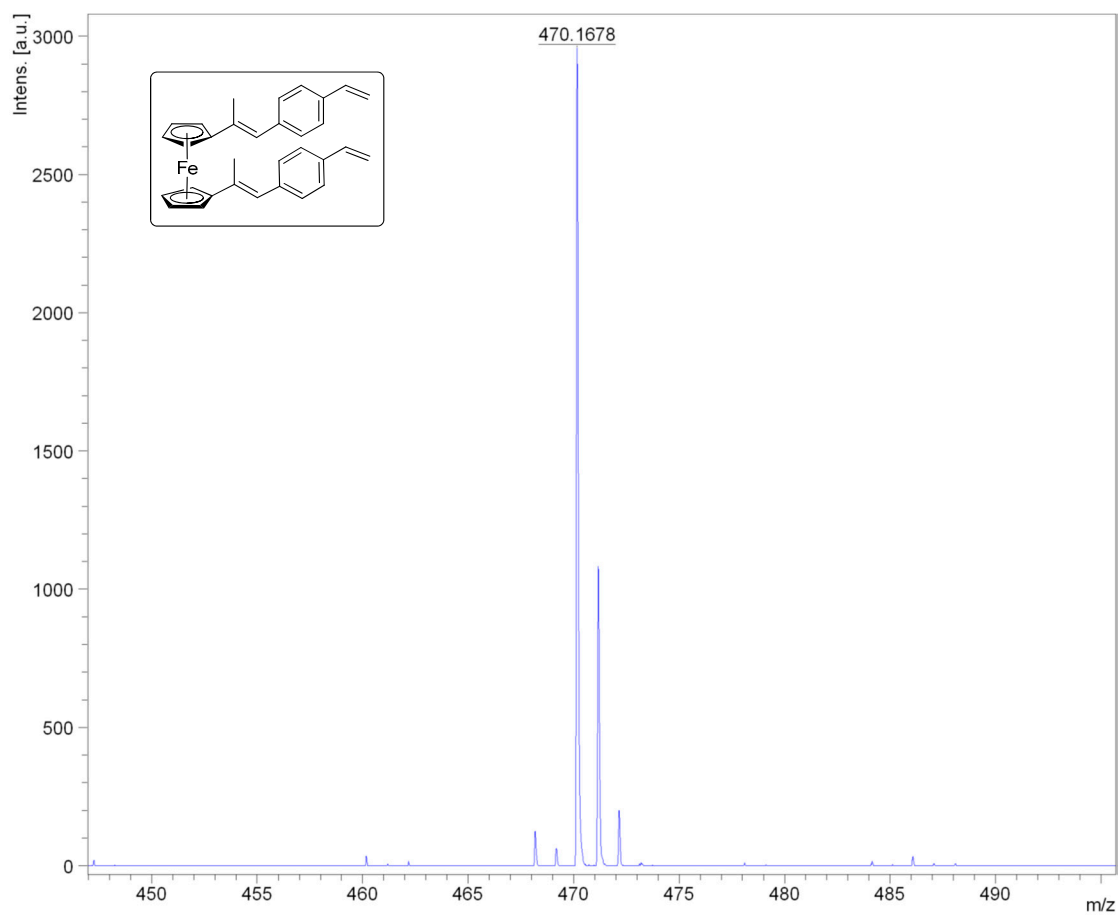


Figure S3 The HRMS (ESI-TOF) spectra of monomer A.

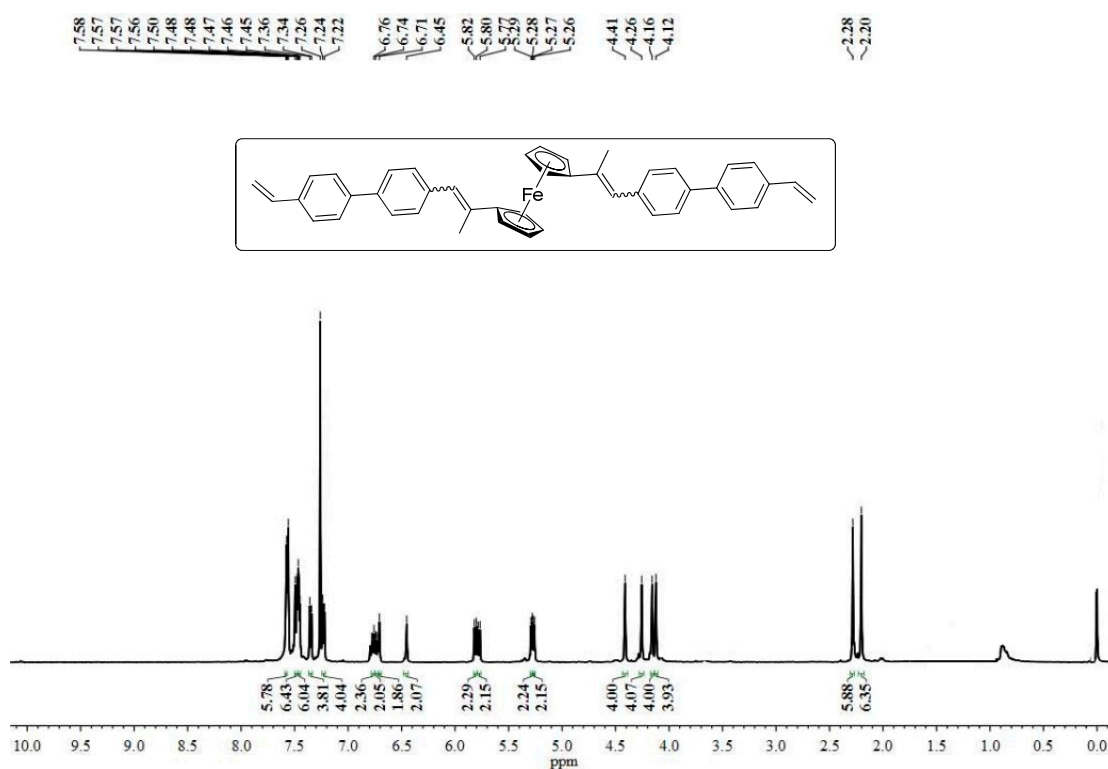


Figure S4 ^1H NMR (500 MHz) spectrum of monomer B measured in CDCl_3 at 25°C .

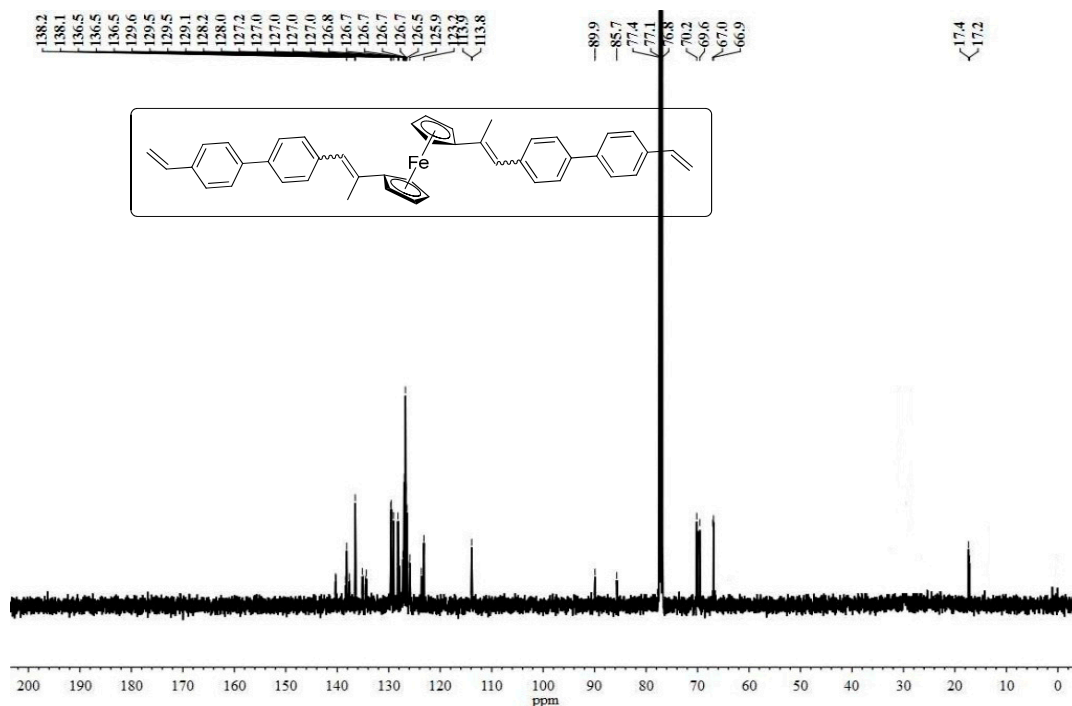


Figure S5 ^{13}C NMR (126 MHz) spectrum of monomer B measured in CDCl_3 at 25 °C.

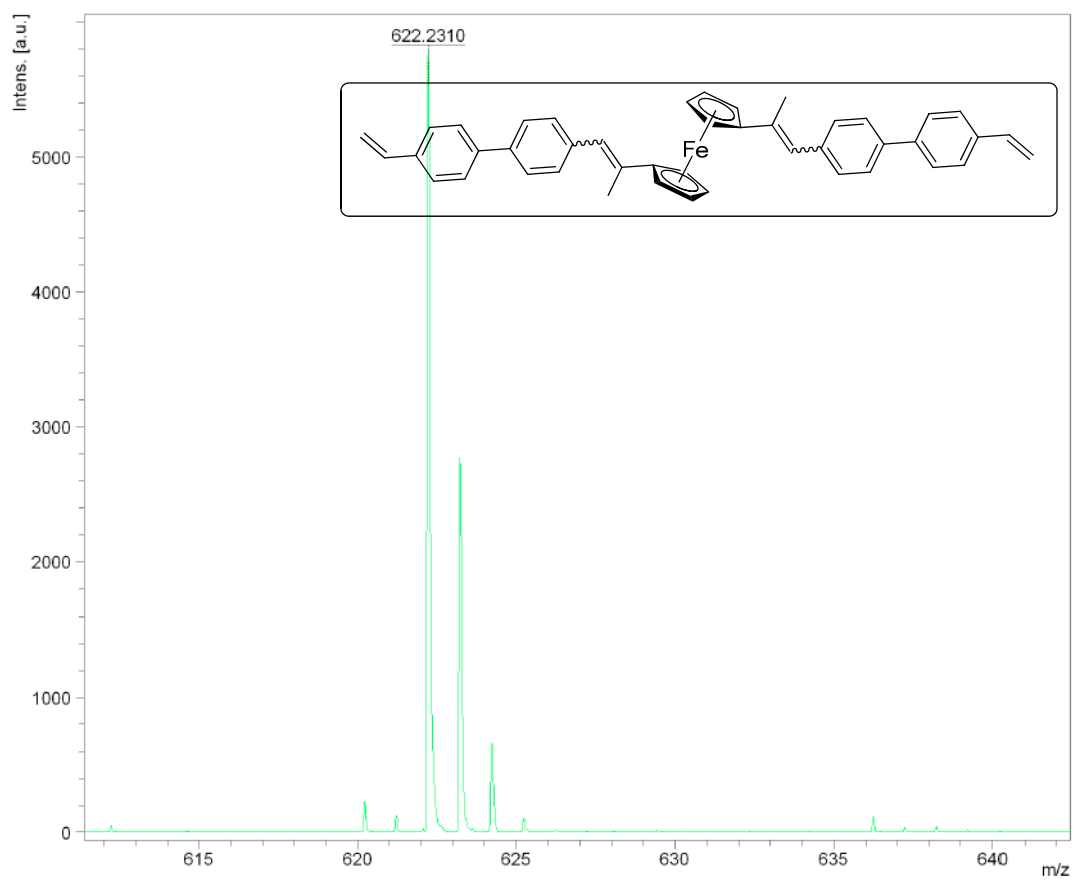


Figure S6 The HRMS (ESI-TOF) spectra of monomer B.

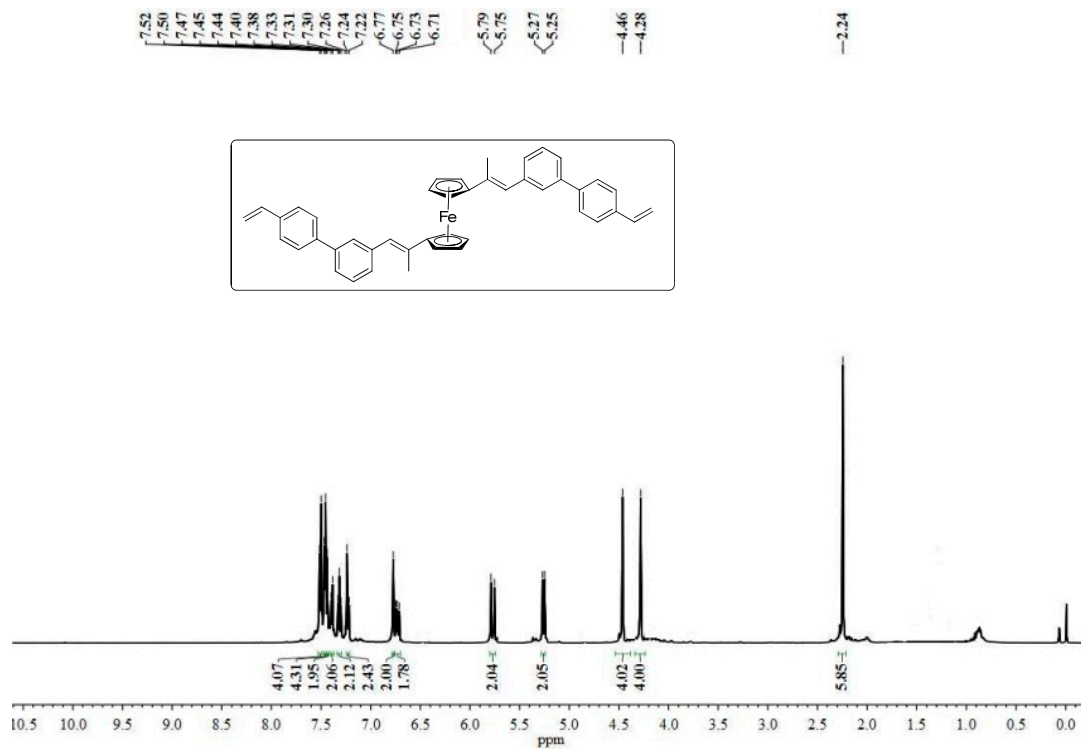


Figure S7 ^1H NMR (500 MHz) spectrum of monomer C measured in CDCl_3 at 25 $^\circ\text{C}$.

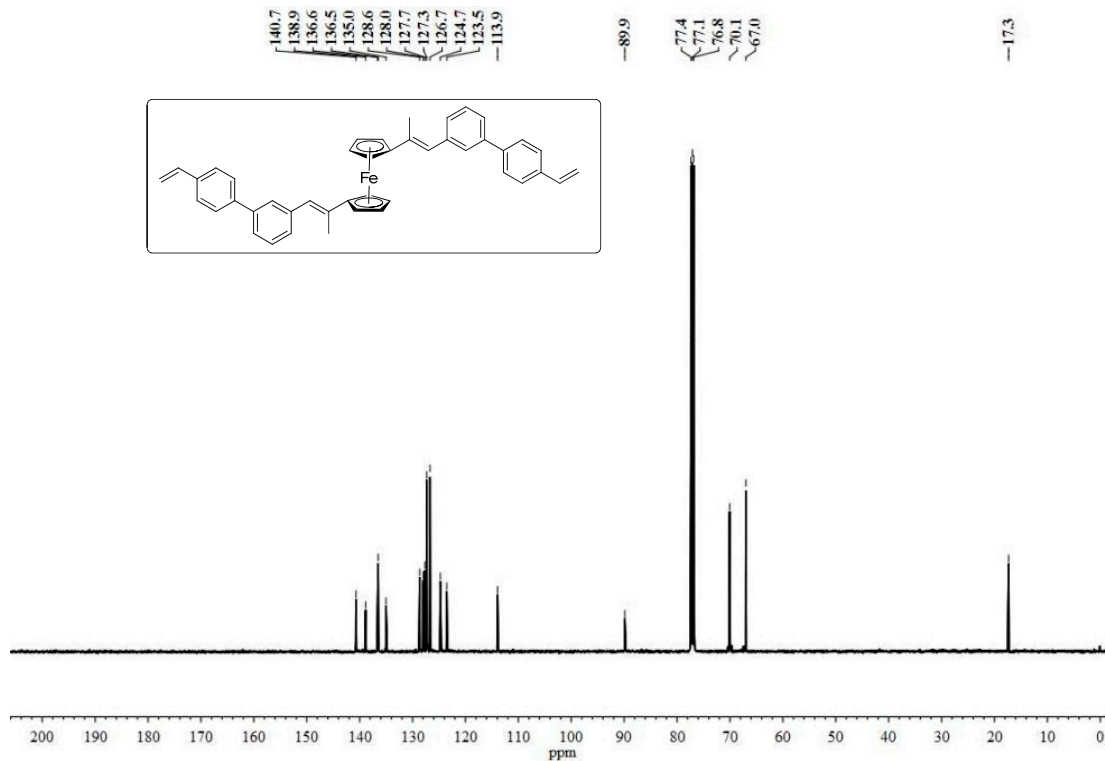


Figure S8 ^{13}C NMR (126 MHz) spectrum of monomer C measured in CDCl_3 at 25 $^\circ\text{C}$.

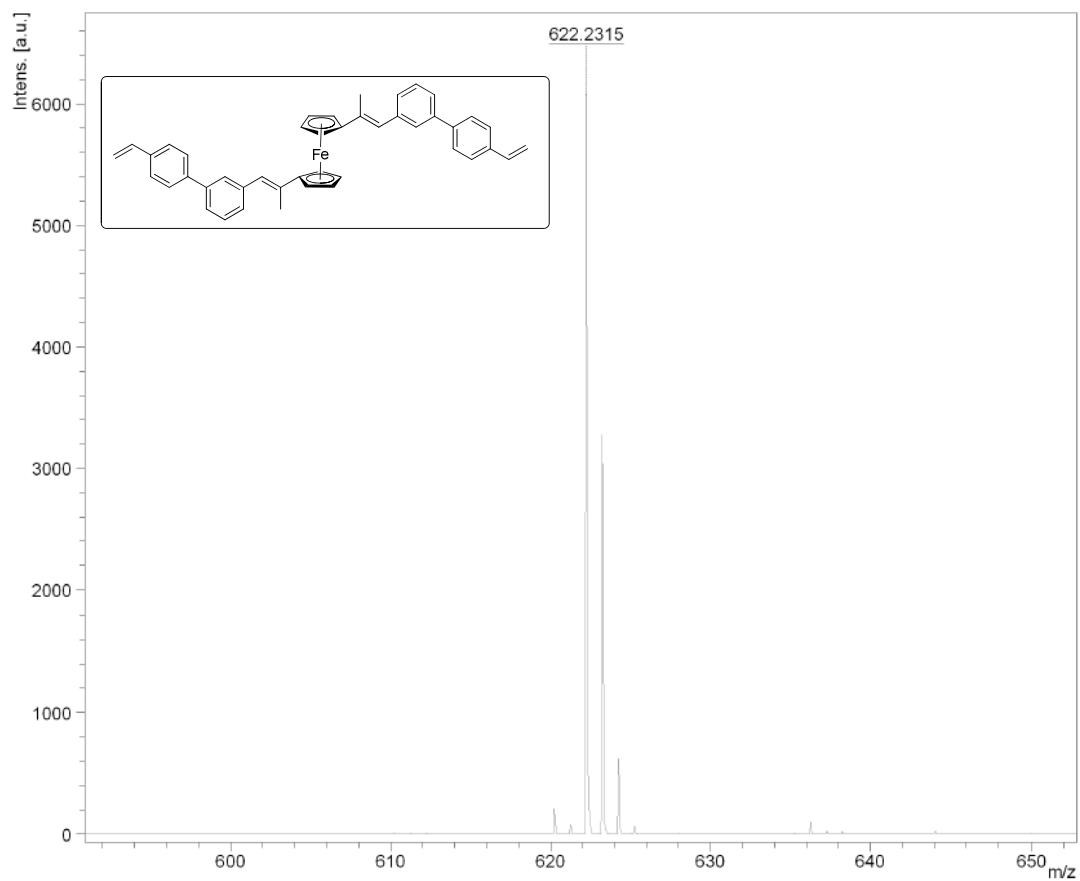


Figure S9 The HRMS (ESI-TOF) spectra of monomer C.

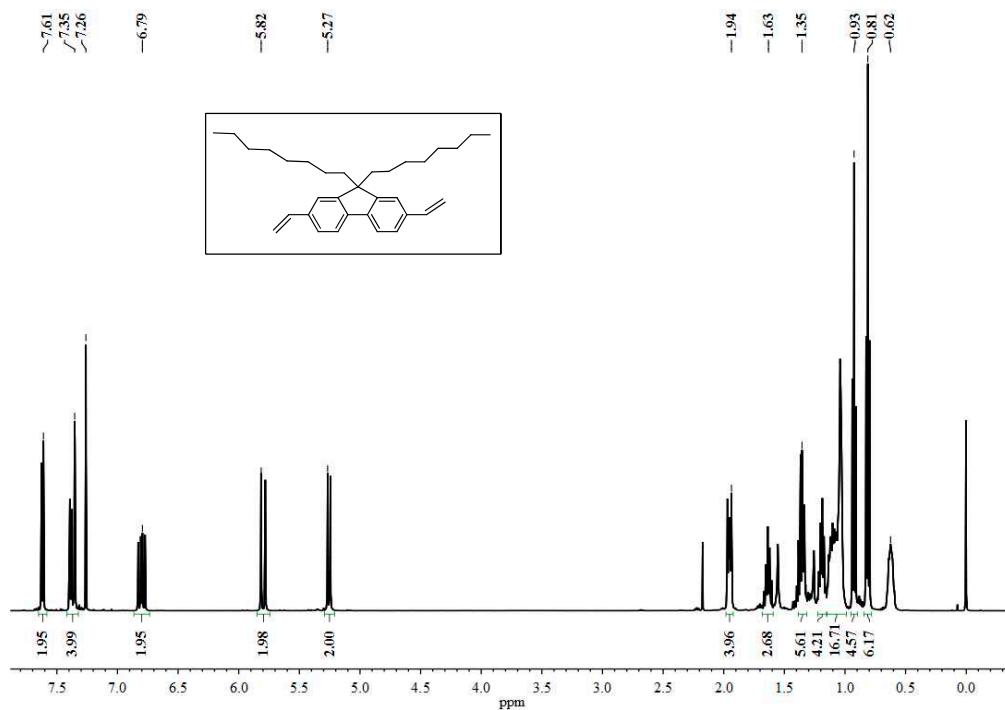


Figure S10 ^1H NMR (500 MHz) spectrum of monomer D measured in CDCl_3 at 25°C .

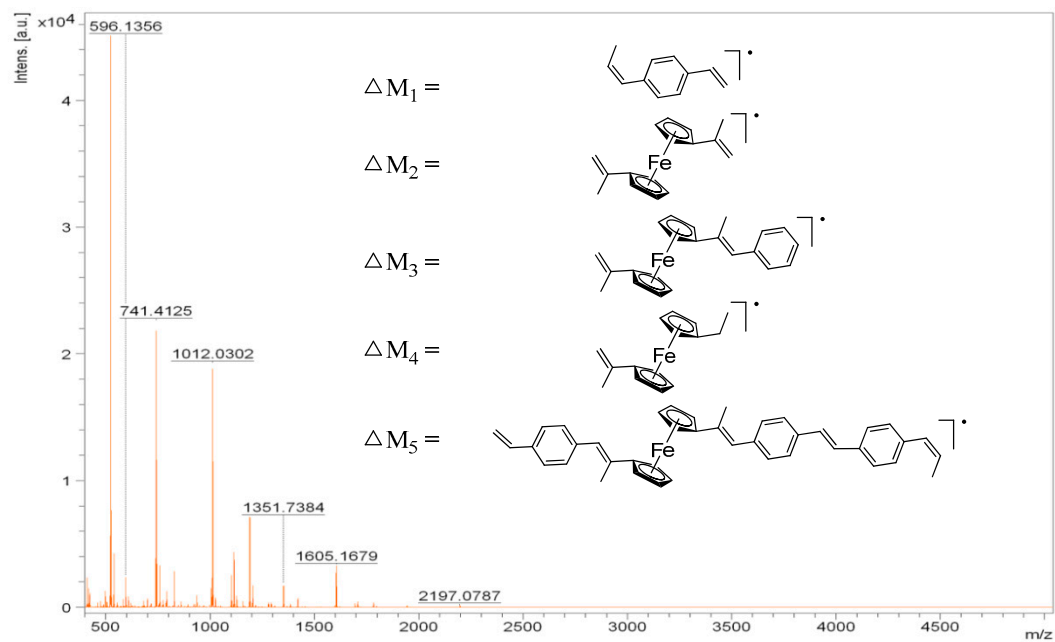


Figure S11 MALDI-TOF spectrum of oligomer A ($M_n = 2021$, PDI = 1.06, Table 1, entry 4)

2. GPC data

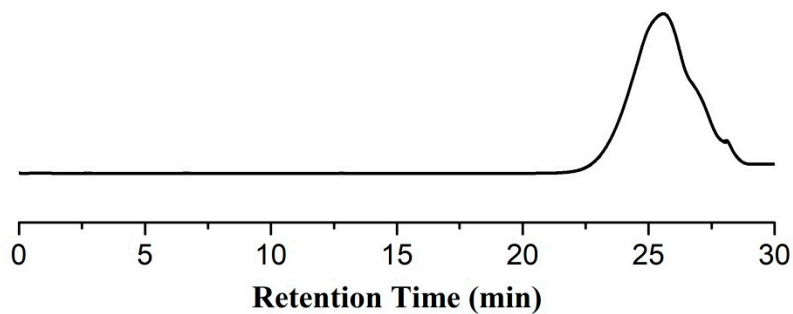


Figure S12 GPC data of oligomer A (Table 1, entry 1)

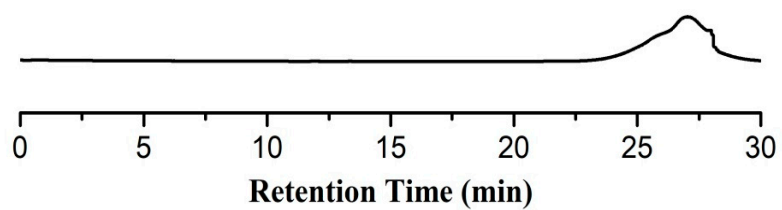


Figure S13 GPC data of oligomer A (Table 1, entry 3)

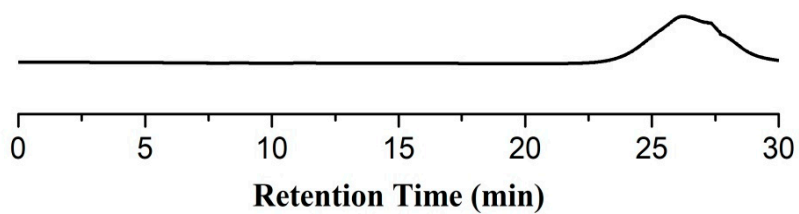


Figure S14 GPC data of oligomer B (Table 1, entry 8)

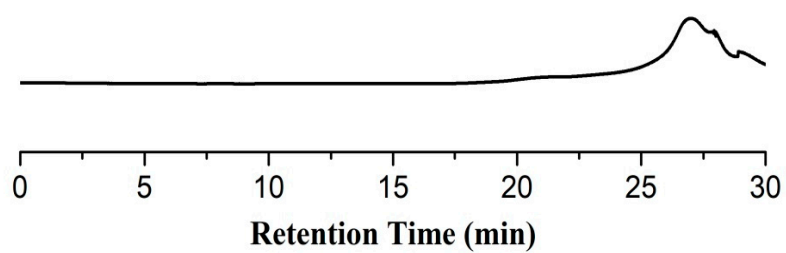


Figure S15 GPC data of oligomer B (Table 1, entry 9)

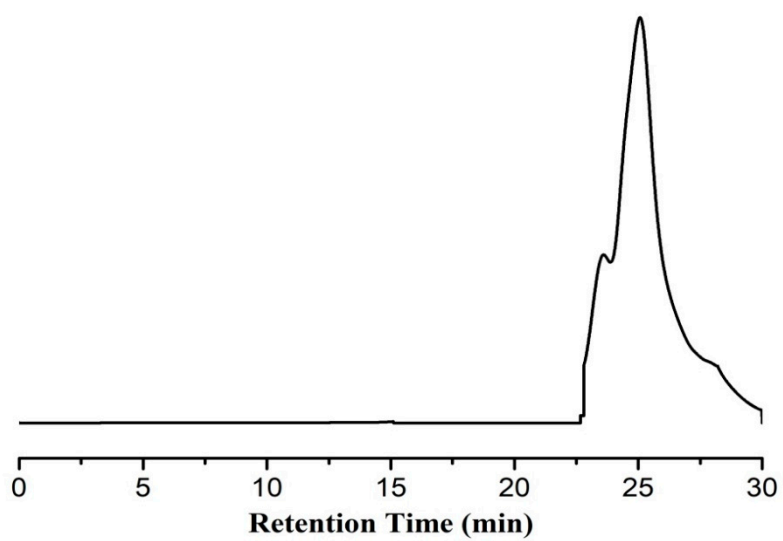


Figure S16 GPC data of oligomer B (Table 1, entry 10)

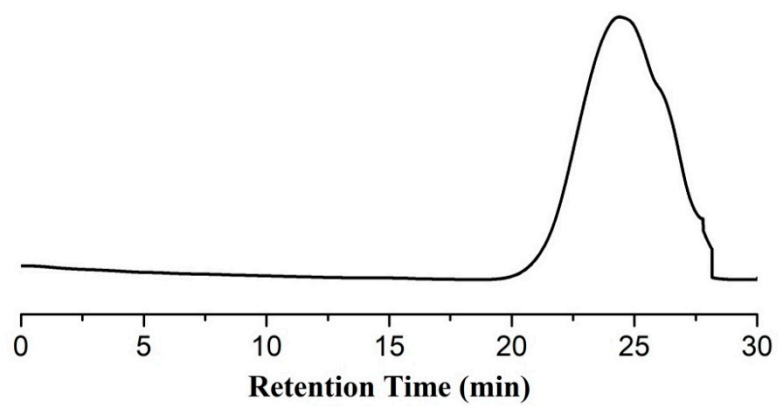


Figure S17 GPC data of oligomer C (Table 1, entry 11)

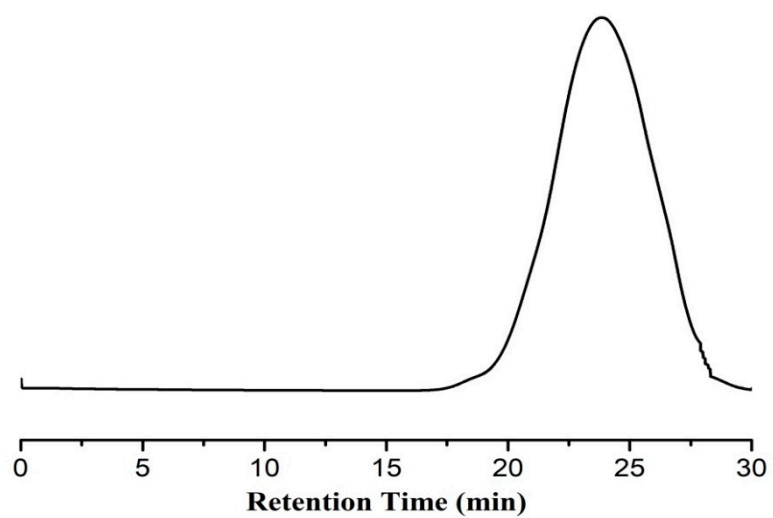


Figure S18 GPC data of oligomer C (Table 1, entry 13)

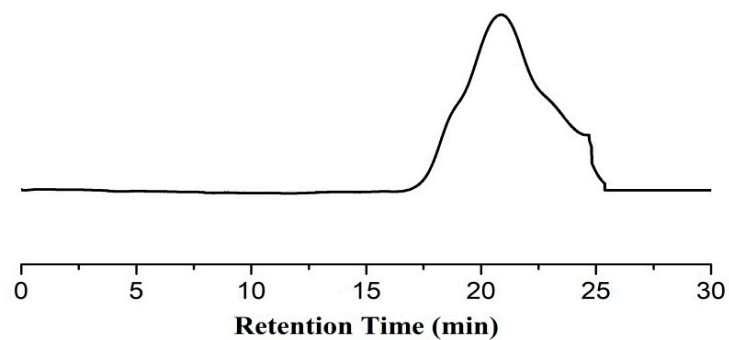


Figure S19 GPC data of copolymer 1 (Table 3, entry 1)

3. ^1H , ^{13}C NMR spectra of oligomer A - C

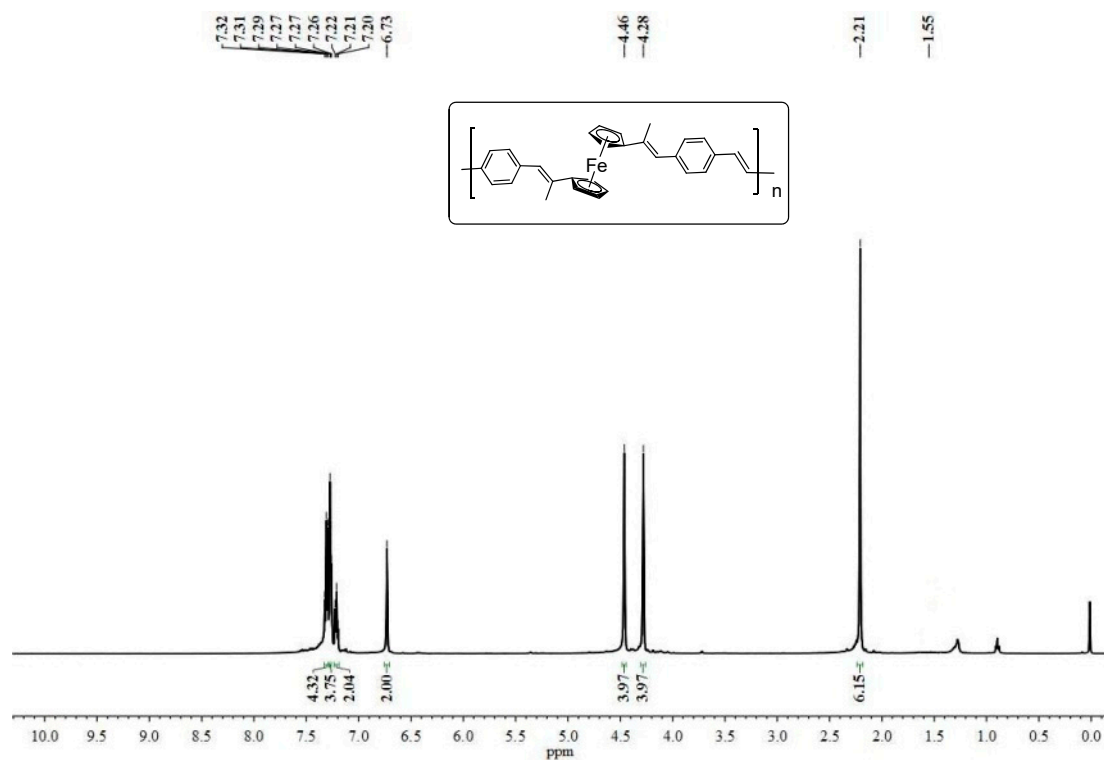


Figure S20 ^1H NMR (500 MHz) spectrum of oligomer A measured in CDCl_3 at 25 $^\circ\text{C}$.

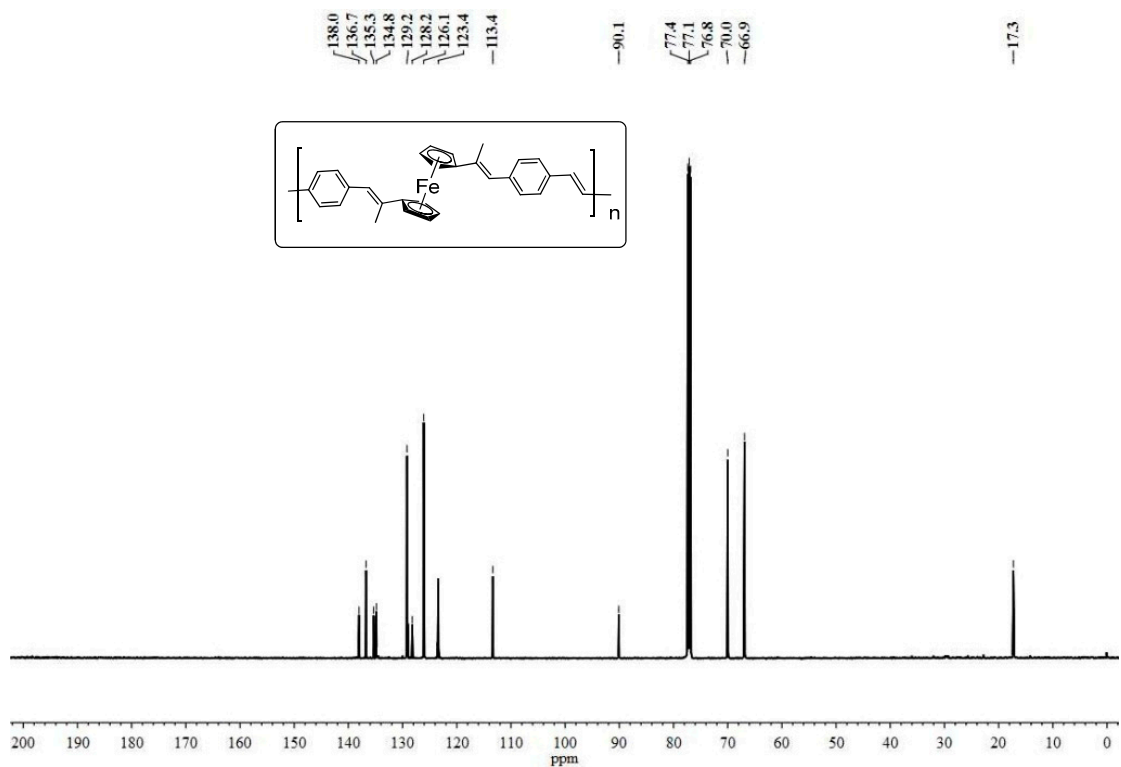


Figure S21 ¹³C NMR (126 MHz) spectrum of oligomer A measured in CDCl₃ at 25 °C.

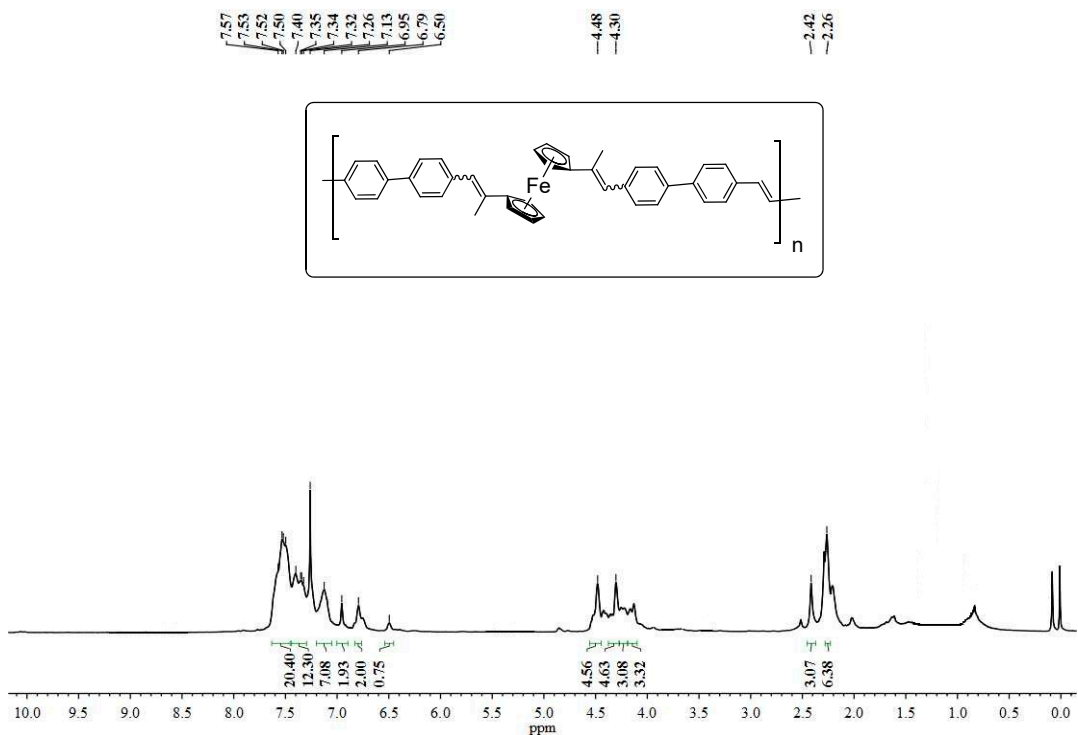


Figure S22 ¹H NMR (500 MHz) spectrum of oligomer B measured in CDCl₃ at 25 °C.

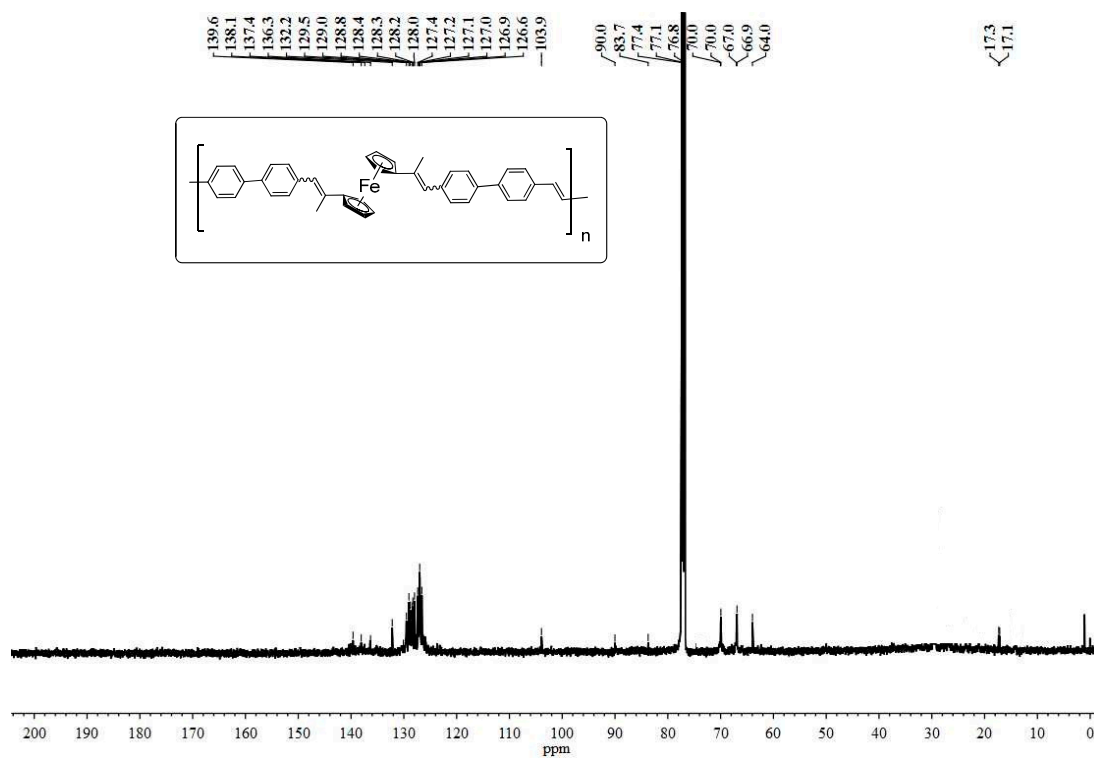


Figure S23 ¹³C NMR (126 MHz) spectrum of oligomer B measured in CDCl₃ at 25 °C.

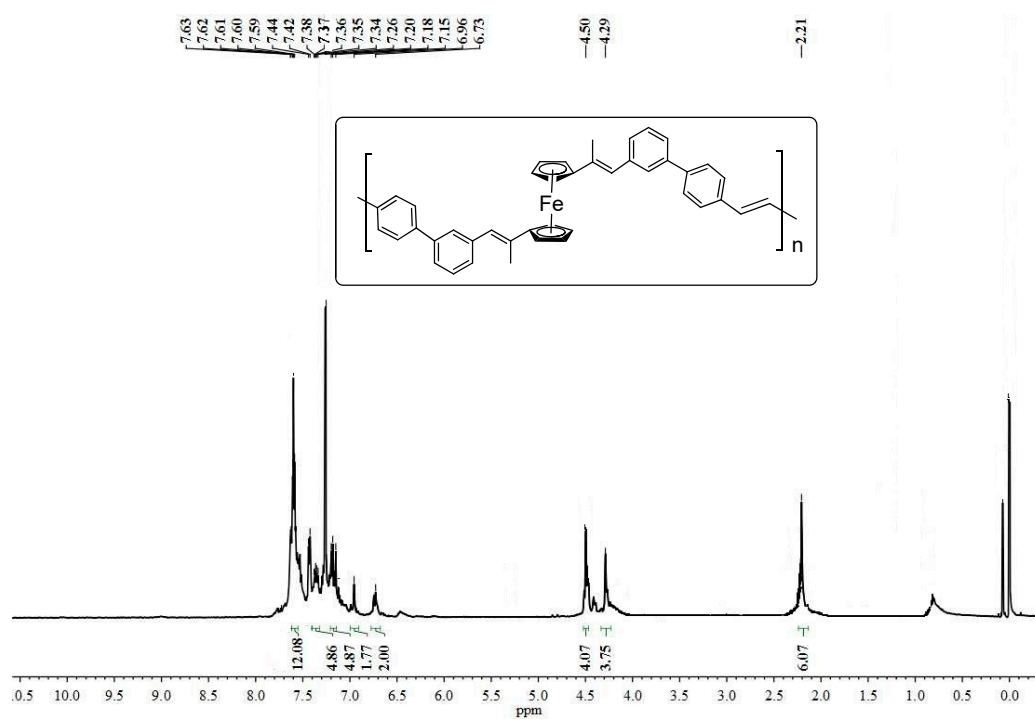


Figure S24 ¹H NMR (500 MHz) spectrum of oligomer C measured in CDCl₃ at 25 °C.

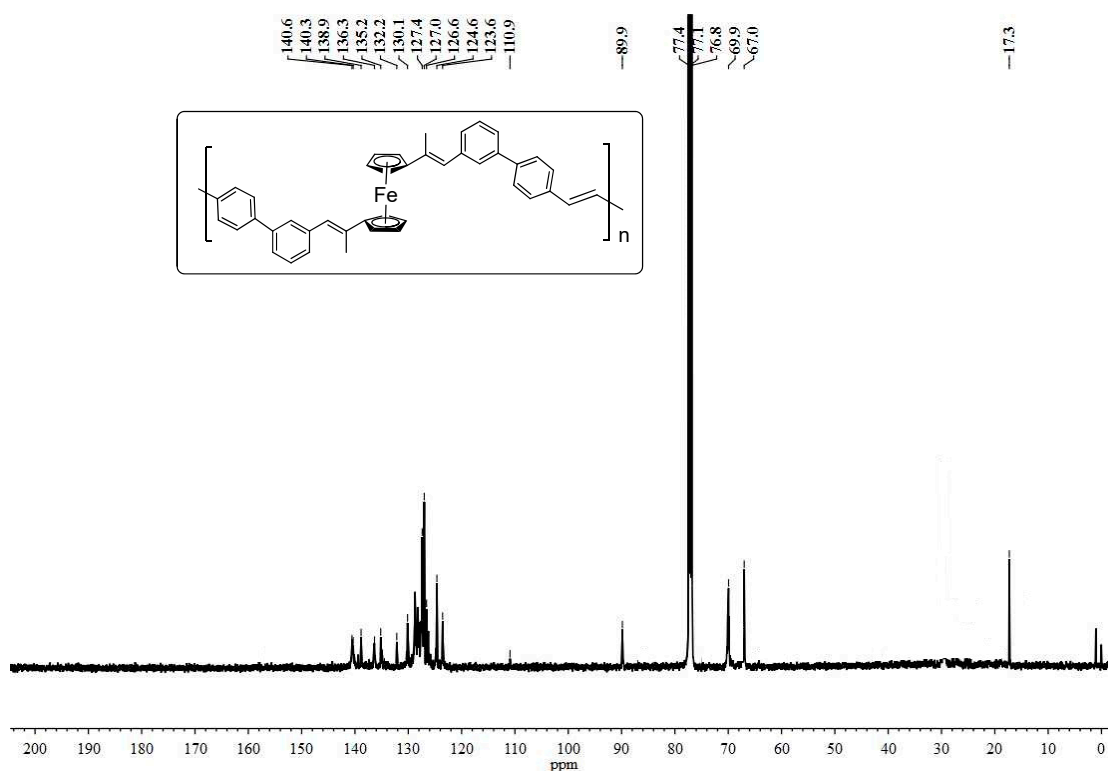


Figure S25 ^{13}C NMR (126 MHz) spectrum of oligomer C measured in CDCl_3 at 25 $^\circ\text{C}$.

4. Spectral analysis

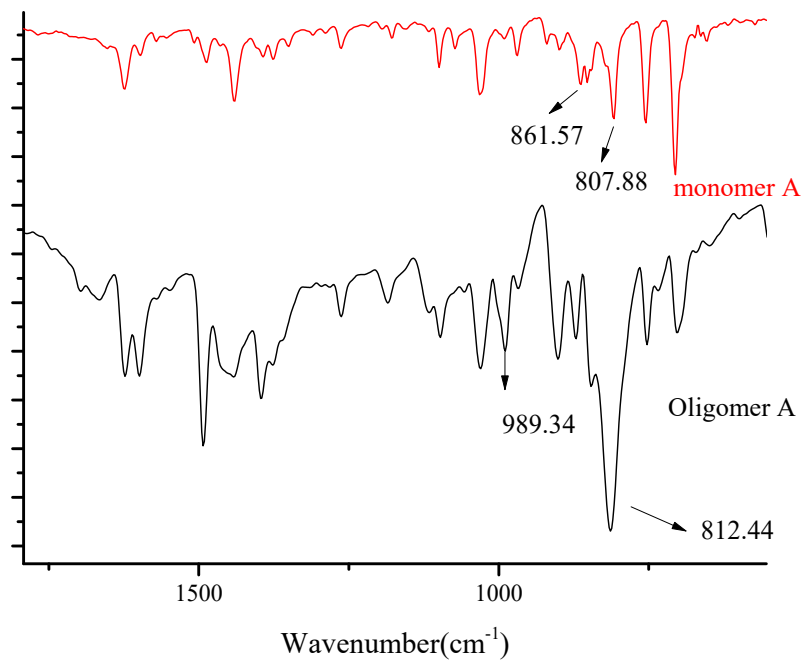


Figure S26 FT-IR spectra (selected region) of monomer A and its ADMET product

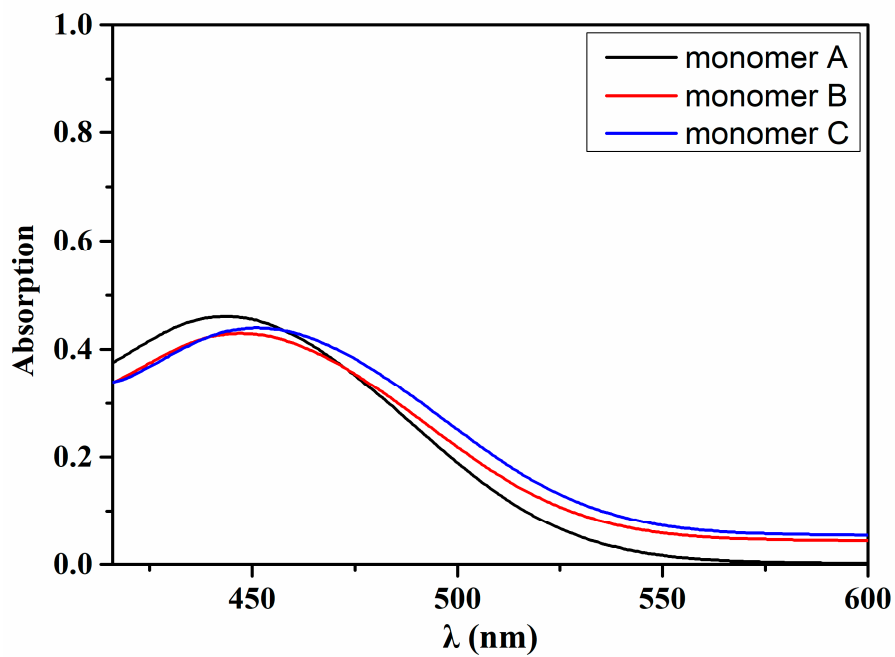


Figure S27 UV-vis spectra of monomer A, B and C in CH_2Cl_2 .

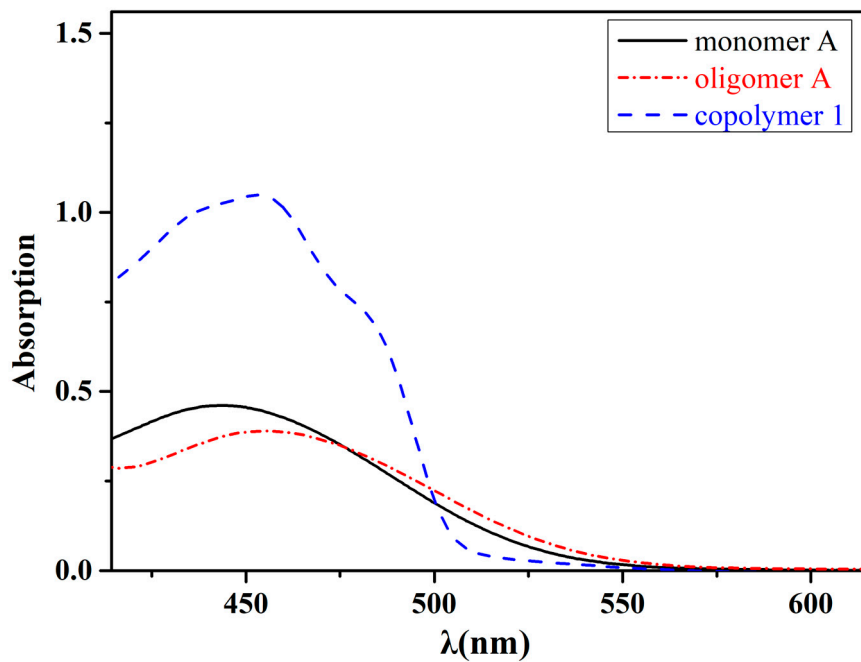


Figure S28 UV-vis spectra of monomer A, oligomer A and copolymer 1.

5. ^1H , ^{13}C NMR spectra of copolymers

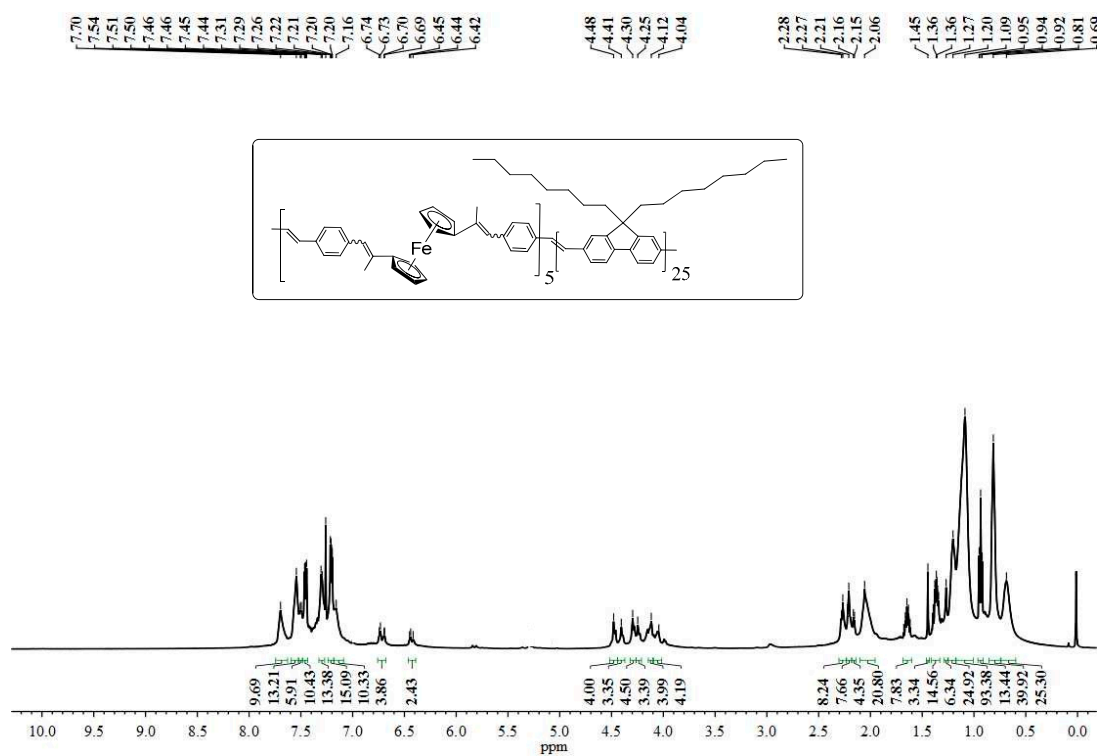


Figure S29 ^1H NMR spectra of copolymer 1 ($n_A : n_{\text{flu}} = 1:4$) (Table 3, entry 1)

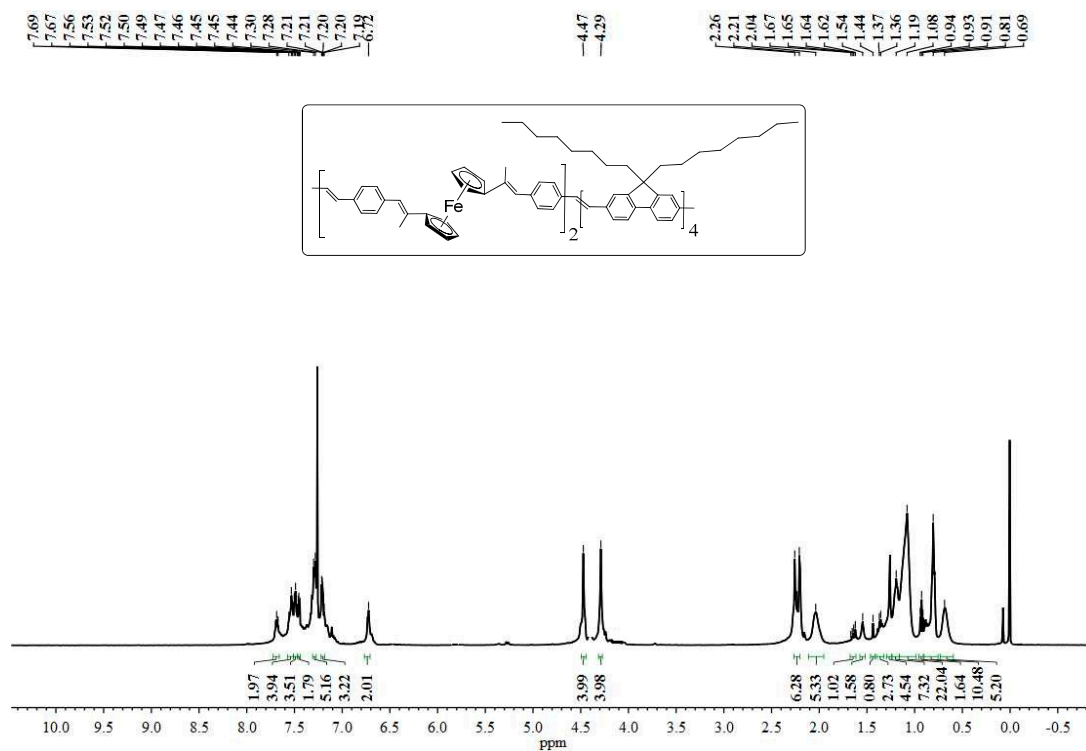


Figure S30 ^1H NMR spectra of copolymer 1 ($n_A : n_{\text{flu}} = 1:1$) (Table 3, entry 3)

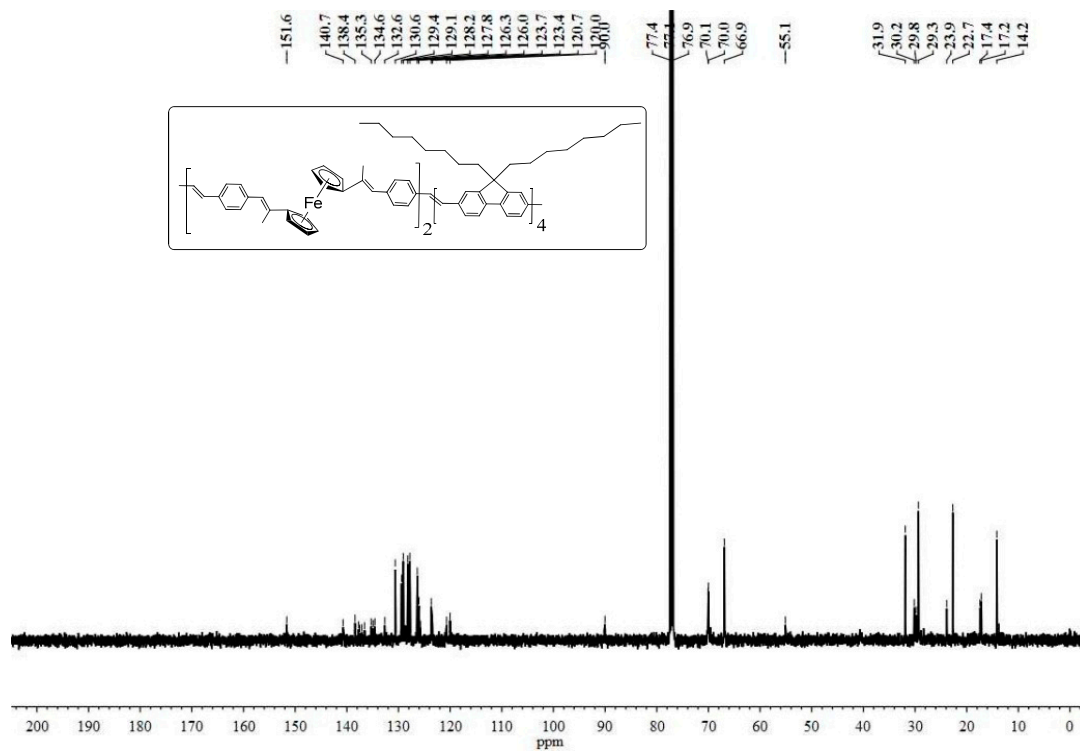


Figure S31 ^{13}C NMR spectra of copolymer 1 ($n_A : n_{\text{flu}} = 1:1$) (Table 3, entry 3)

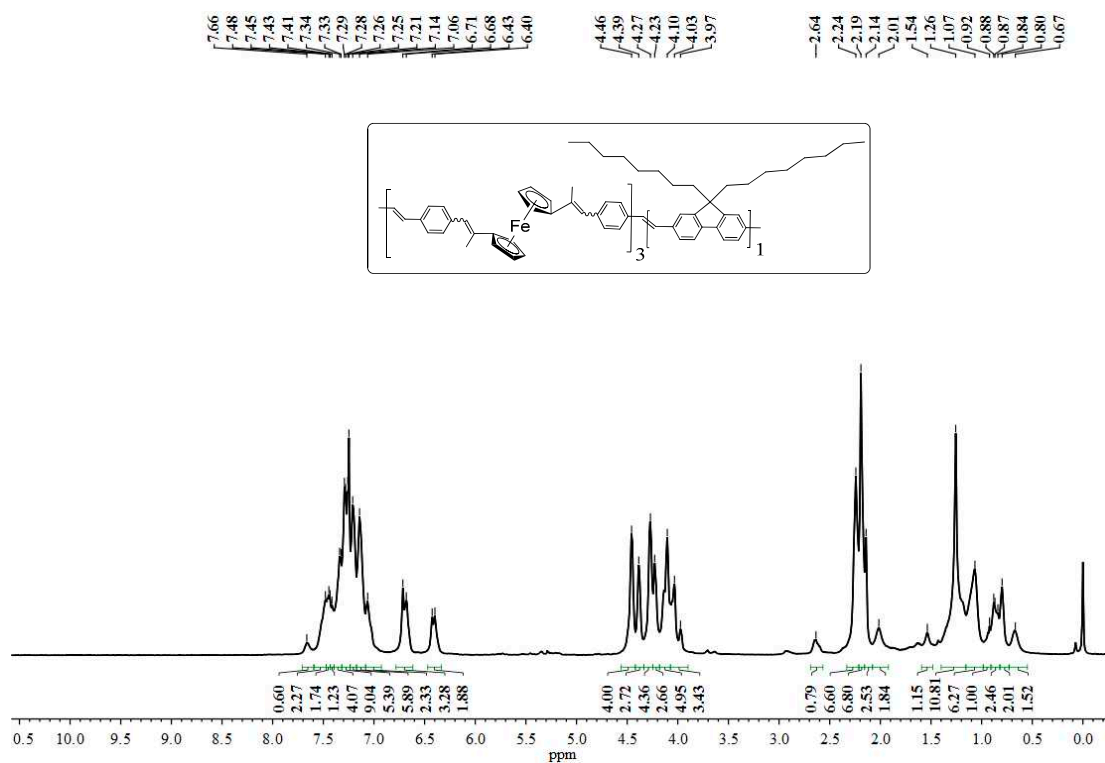


Figure S32 ^1H NMR spectra of copolymer 1 ($n_A : n_{\text{flu}} = 4:1$) (Table 3, entry 5)

6. The color variance and cyclic voltammogram spectra



Figure S33 The color variance of polymer D (left), copolymer 1 and oligomer A (right)

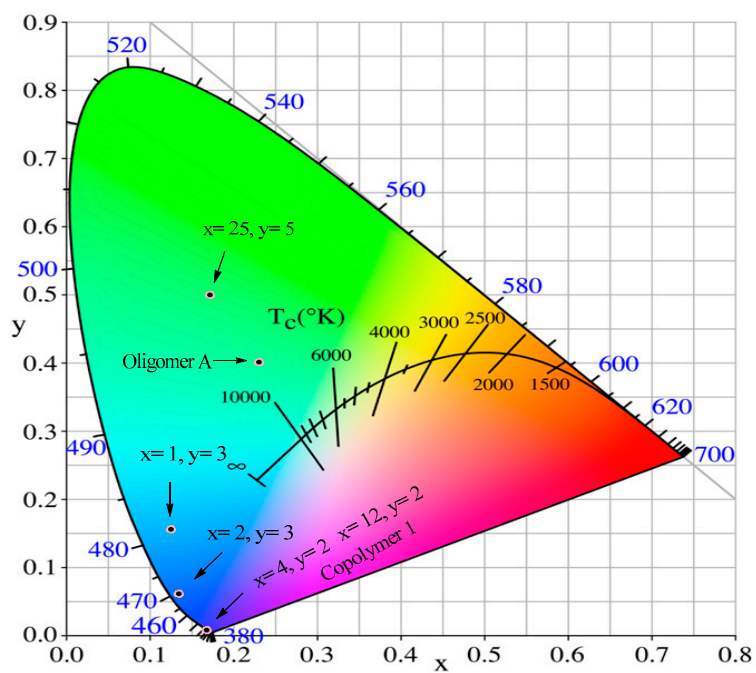


Figure S34 The CIE plot of copolymer 1 with different molecular weight and oligomer A

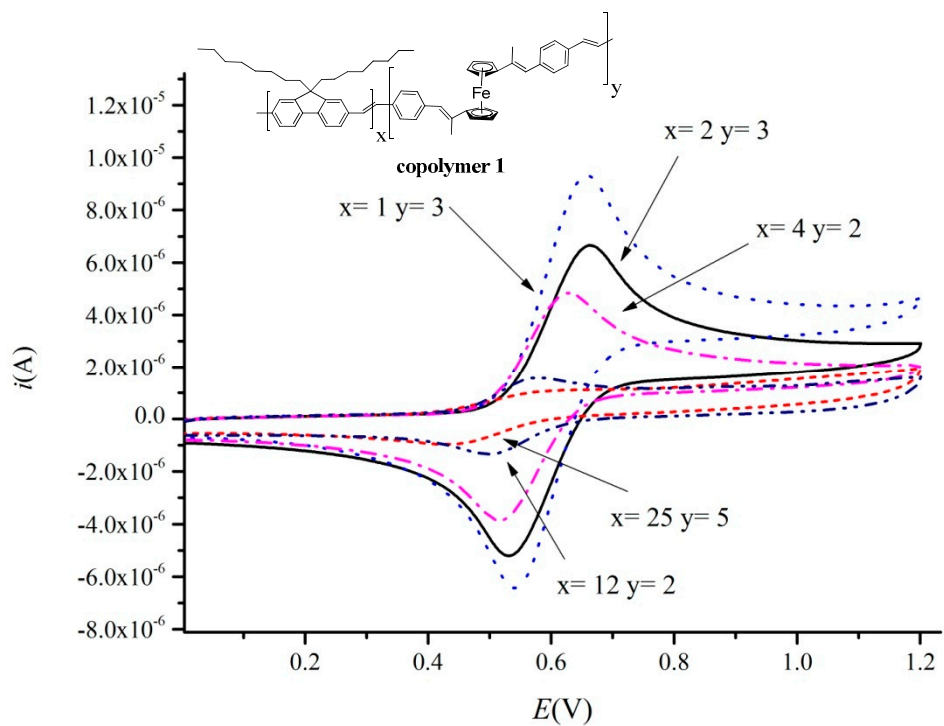


Figure S35 Cyclic voltammogram spectra of copolymer 1 with different molecular weight

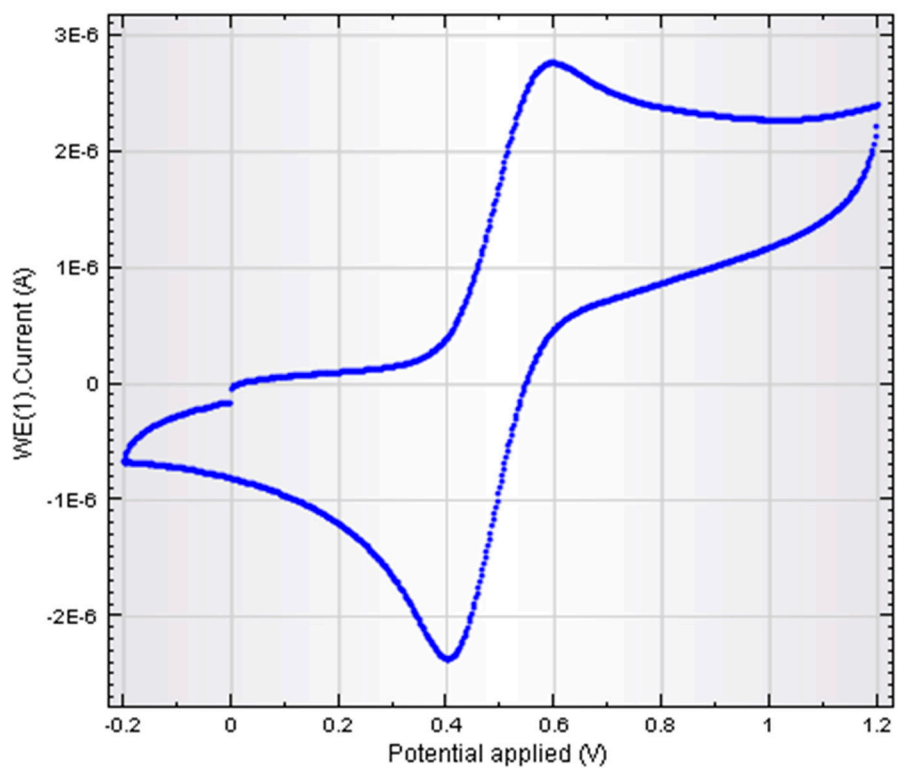


Figure S36 Cyclic voltammogram spectra of monomer B

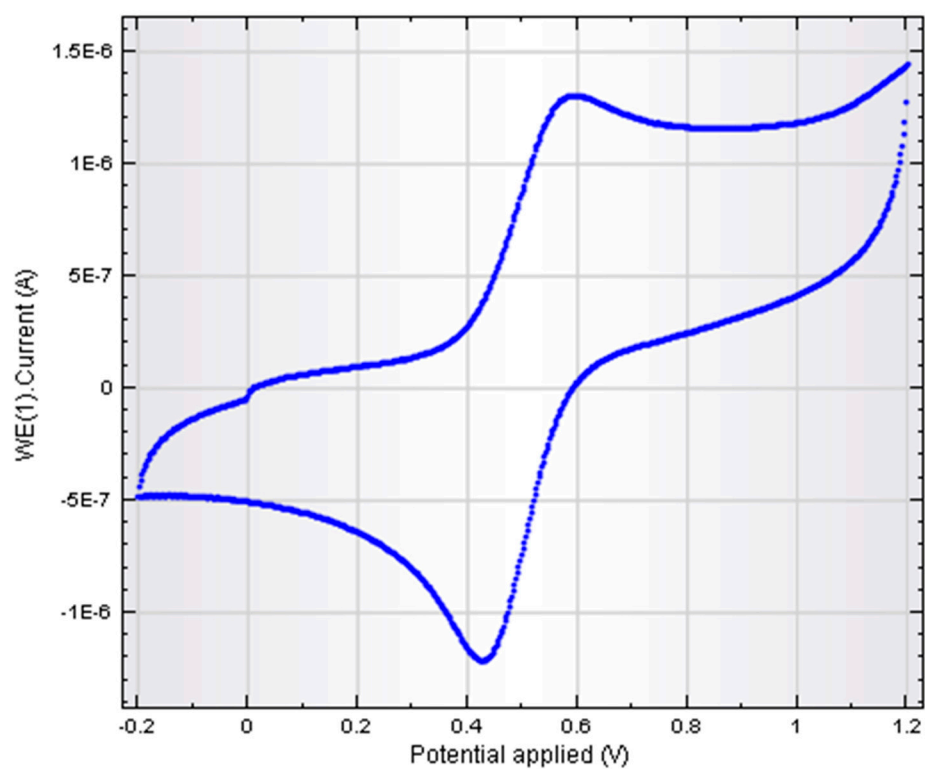


Figure S37 Cyclic voltammogram spectra of monomer C