Supporting Information for

Z-Selective and Syndioselective Ring-Opening Metathesis Polymerization (ROMP) Initiated by MonoAryloxidePyrrolide (MAP) Catalysts.

by

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Figure 1S. IR spectra (KBr pellet) of poly-NBDF9(100) made from initiators **1**, **2a**, and **3b**. Absorption at 970 cm^{-1}, which signifies to *trans* olefins, is present only in spectrum marked "**2a**".

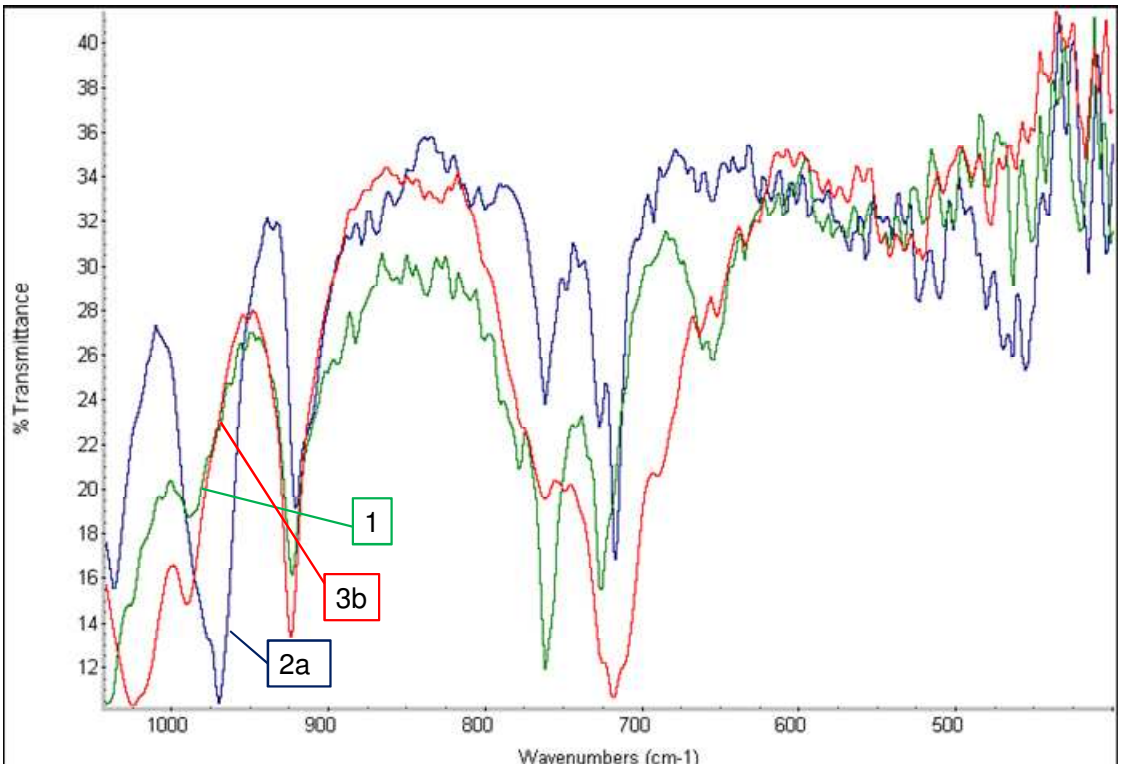


Figure 2S. ^{13}C CPMAS NMR spectrum of polyNBDF9$_1$. Recorded at 274 K on a 900 MHz (proton) instrument spinning at 16 kHz. Peaks around 60, 70, 200, and 210 ppm were determined to be spinning side bands.

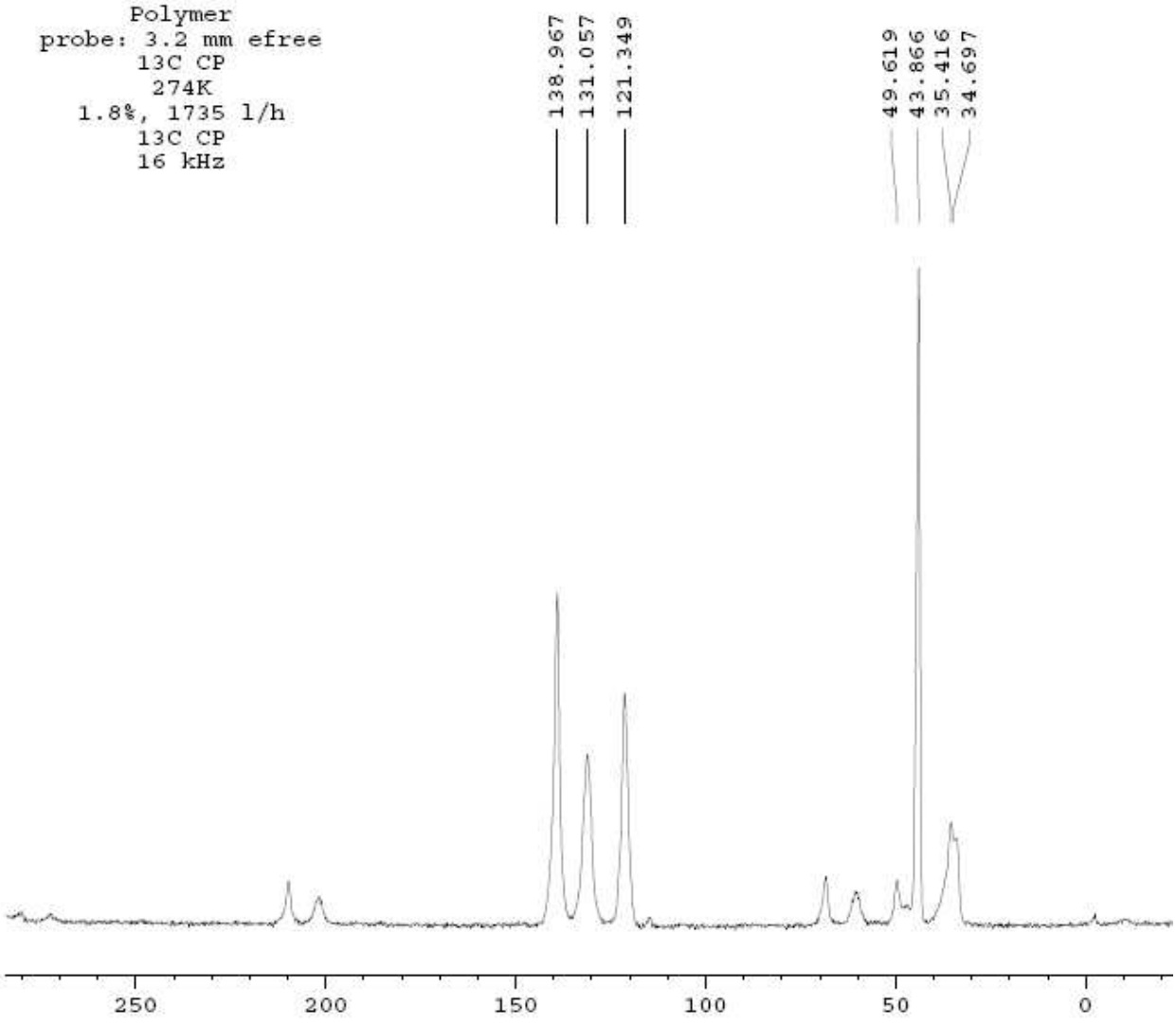
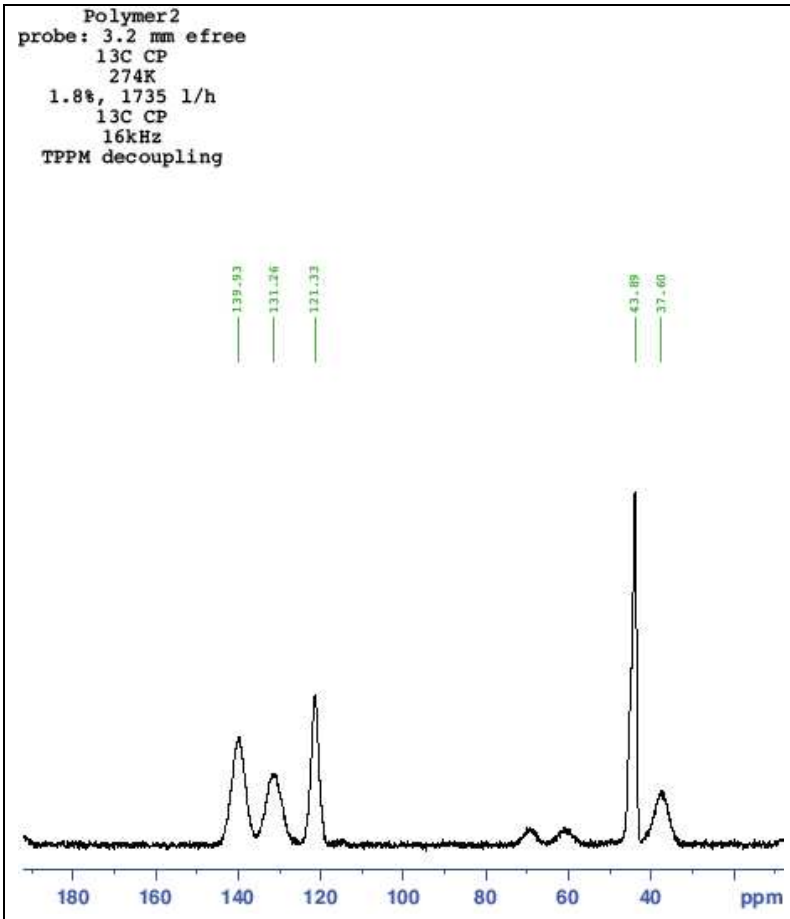
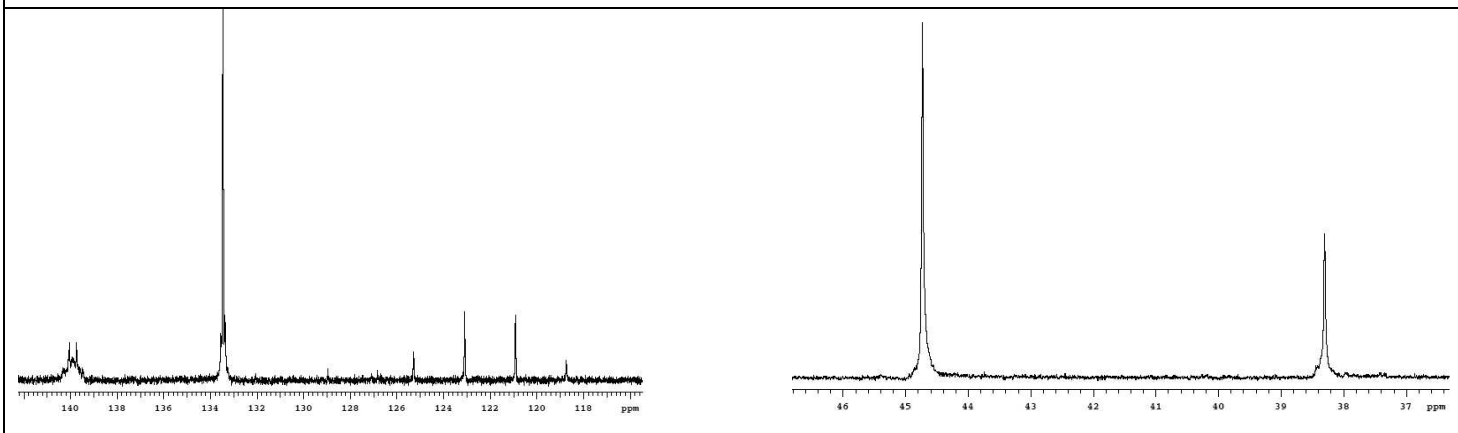


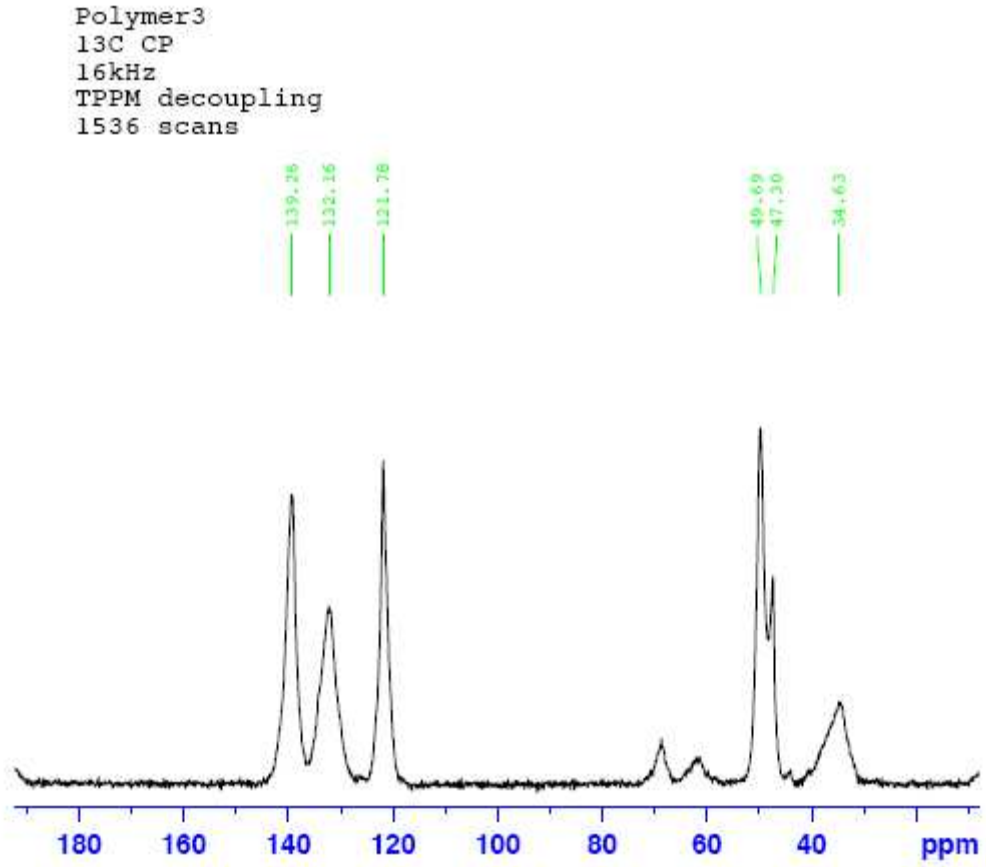
Figure 3S. Solid and solution state ^{13}C NMR spectra of polyNBDF6 obtained with initiators **3b** and **2a.** Recorded at 274 K on a 900 MHz (proton) instrument spinning at 16 kHz. Peaks around 60, 70, 200, and 210 ppm were determined to be spinning side bands.



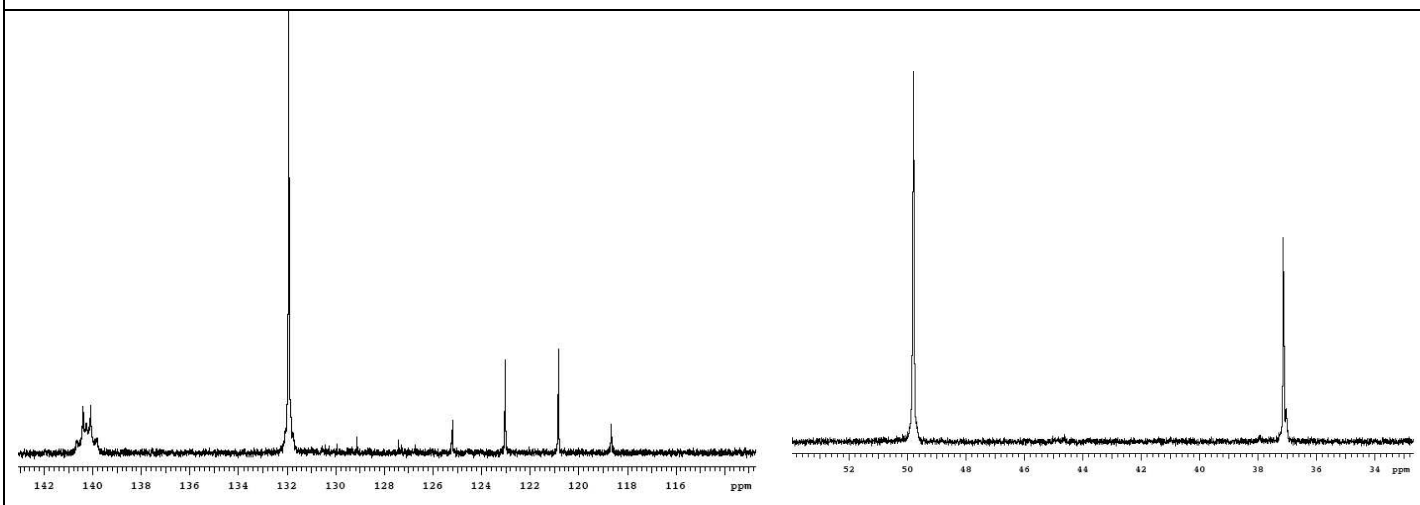
^{13}C CPMAS NMR spectrum of polyNBDF6$_{\mathbf{3b}}$



^{13}C solution state NMR spectrum of polyNBDF6$_{\mathbf{3b}}$ (145-110 ppm and 54-36 ppm)



^{13}C CPMAS NMR spectrum of polyNBDF6$_{\mathbf{2a}}$



^{13}C solution state NMR spectrum of polyNBDF6$_{\mathbf{2a}}$ (145-110 ppm and 54-36 ppm)

Figure 4S. IR spectra (thin film) of polyMPCP(100) made from initiators **1**, **2a**, and **3a**. Absorption at 984 cm^{-1}, which signifies *trans* olefins, is present only in spectrum marked "2a"**.**