

Supplementary Materials

Synthesis of Ultrahigh Molecular Weight Polymers Containing Reactive Functionality with Low PDIs by
Polymerizations of Long-chain α -Olefins in the Presence of their Nonconjugated Dienes by

$\text{Cp}^*\text{TiMe}_2(\text{O}-2,6\text{-}^i\text{Pr}_2\text{C}_6\text{H}_3)\text{-Borate Catalyst}$

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Contents

Selected ^1H NMR spectra (in 1,1,2,2-tetrachloroethane- d_2 at 25 °C) for poly(1-decene-*co*-1,9-decadiene)s (Figures S1,2), poly(1-dodecene-*co*-1,11-dodecadiene)s (Figures S3,4), and poly(1-tetradecene-*co*-1,13-tetradecadiene)s (Figures S5,6).

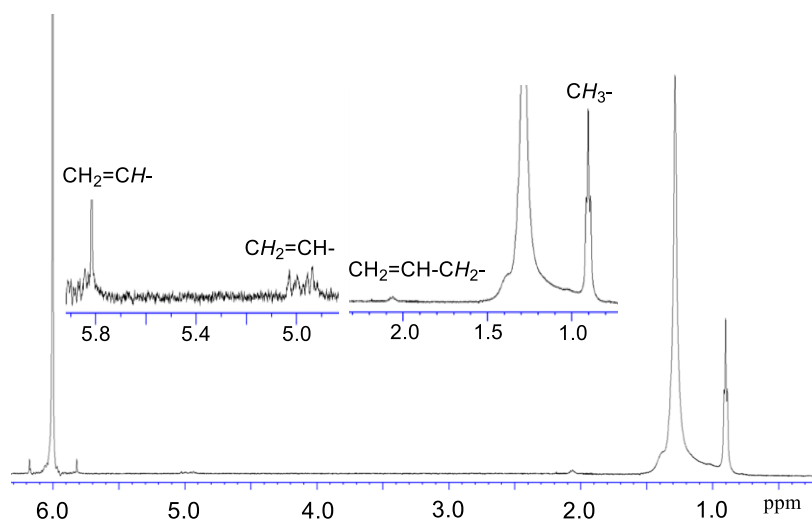


Figure S1. ^1H NMR spectrum (in 1,1,2,2-tetrachloroethane- d_2 at 25 °C) for poly(1-decene-*co*-1,9-decadiene) (run 1, after 5 min, 1,9-decadiene 8.9 mol%).

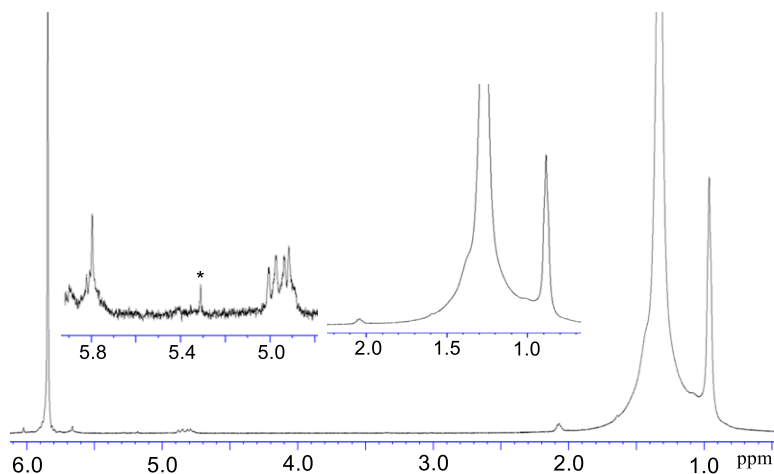


Figure S2. ¹H NMR spectrum (in 1,1,2,2-tetrachloroethane-*d*₂ at 25 °C) for poly(1-decene-*co*-1,9-decadiene) (run 2, after 10 min, 1,9-decadiene 9.1 mol%). *Impurity

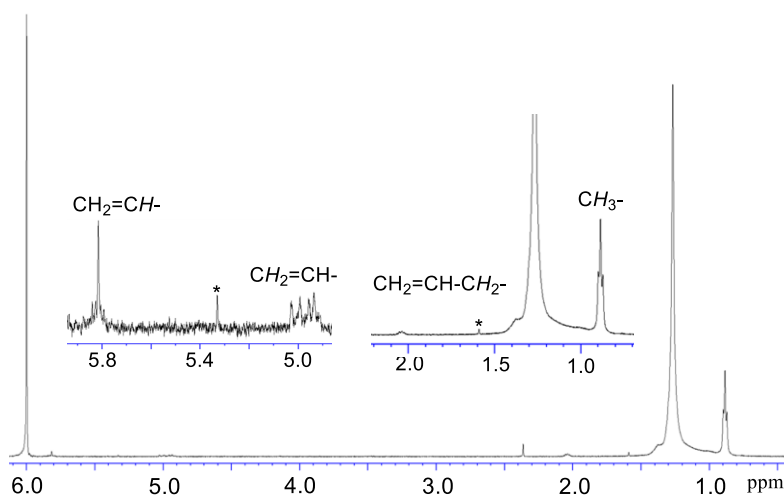


Figure S3. ¹H NMR spectrum (in 1,1,2,2-tetrachloroethane-*d*₂ at 25 °C) for poly(1-dodecene-*co*-1,11-dodecadiene) (run 4, after 30 min, 1,11-dodecadiene 7.7 mol%). *Impurity

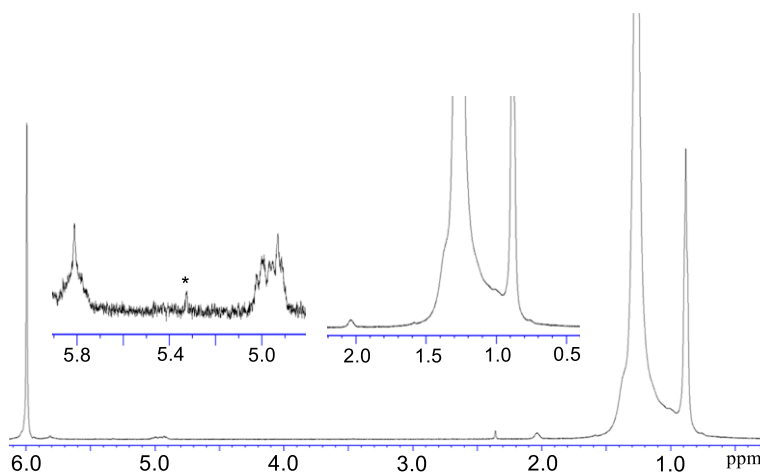


Figure S4. ¹H NMR spectrum (in 1,1,2,2-tetrachloroethane-*d*₂ at 25 °C) for poly(1-dodecene-*co*-1,11-dodecadiene) (run 5, after 120 min, 1,11-dodecadiene 7.5 mol%). *Impurity

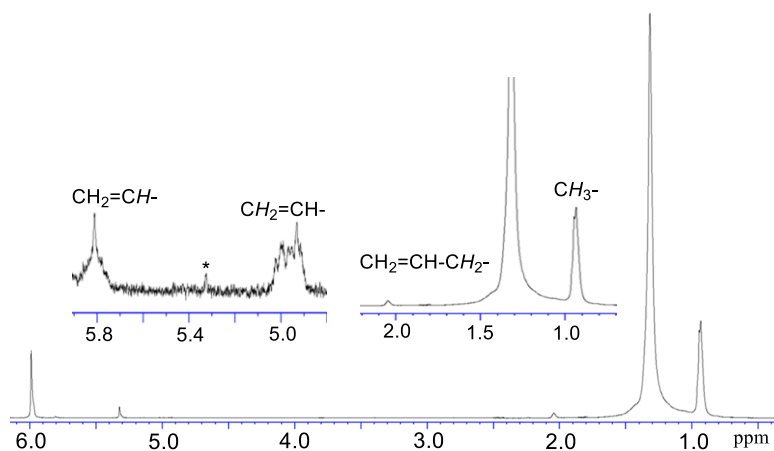


Figure S5. ^1H NMR spectrum (in 1,1,2,2-tetrachloroethane- d_2 at 25 °C) for poly(1-tetradecene-*co*-1,13-tetradecadiene) (run 6, after 30 min, 1,13-tetradecadiene 4.5 mol%). *Impurity

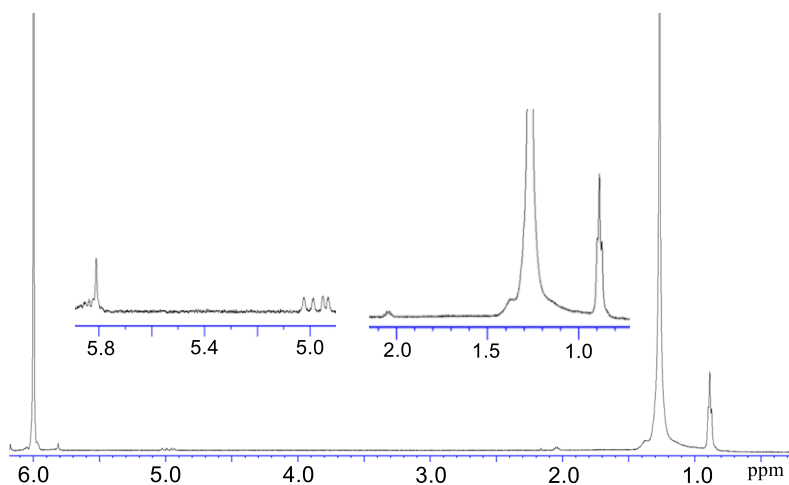


Figure S6. ^1H NMR spectrum (in 1,1,2,2-tetrachloroethane- d_2 at 25 °C) for poly(1-tetradecene-*co*-1,13-tetradecadiene) (run 6, after 60 min, 1,13-tetradecadiene 3.7 mol%).