Electronic Supplementary Material (ESI) for Chemical Science.

Supporting Information for **"Polyolefin Catalysis of Propene, 1-Butene and Isobutene Monitored Using Hyperpolarized NMR"**

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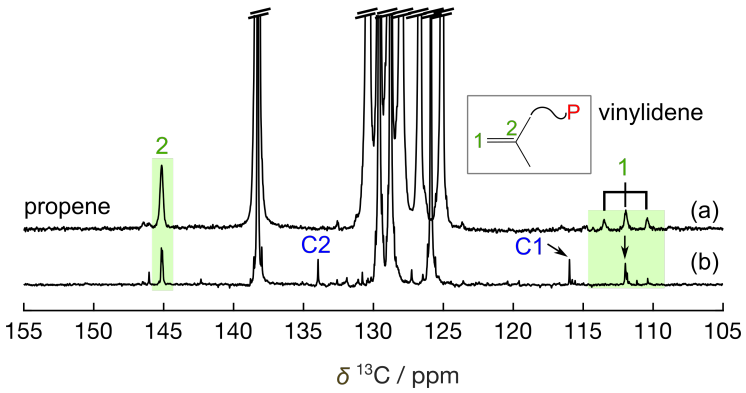

Figure S1. (a) ^{1}H coupled and (b) ^{1}H decoupled, hyperpolarized ^{13}C spectra from two separate propene polymerization reactions, showing evidence for the presence of vinylidene chain-ends from side reactions.

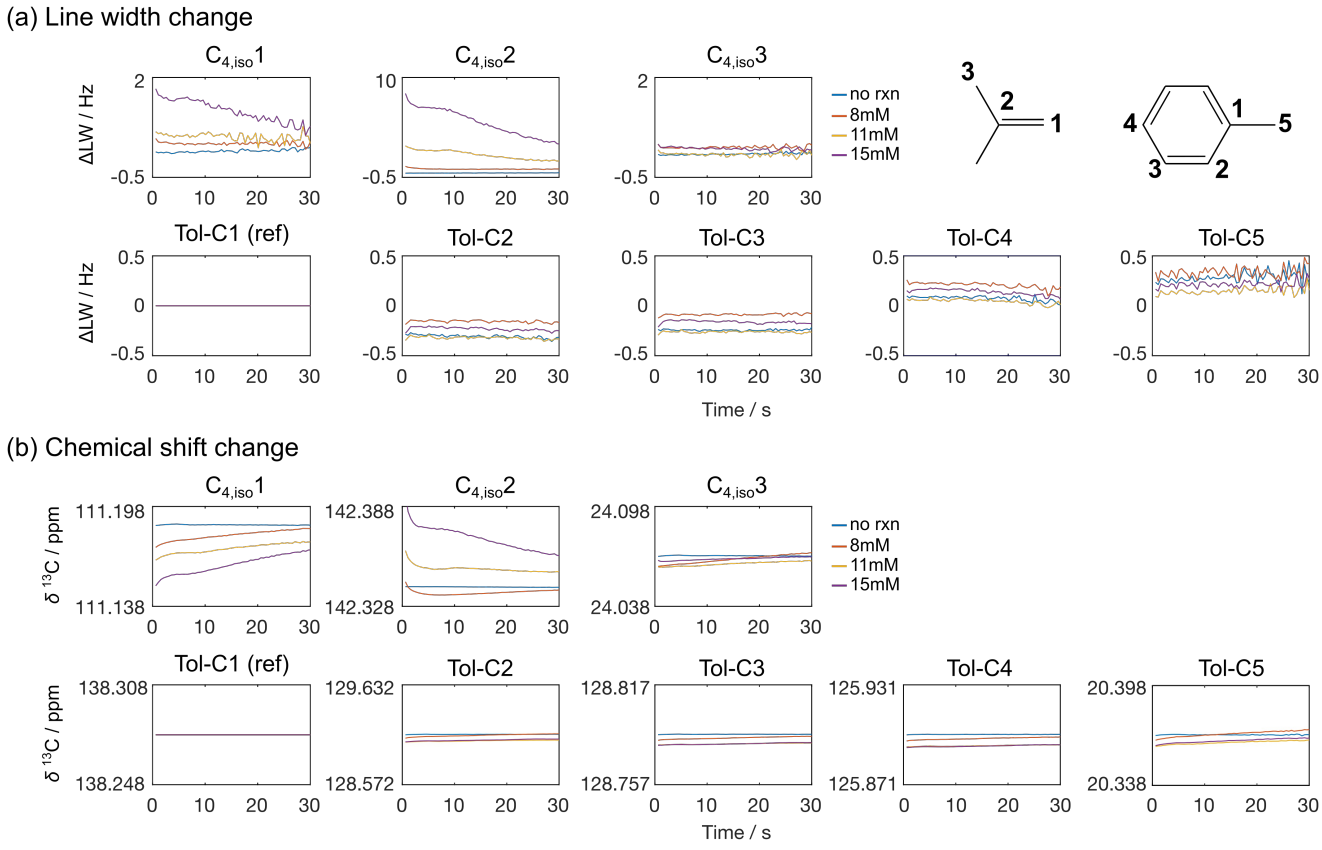

Figure S2. Dynamic changes in (a) line widths and (b) chemical shifts of C1−C3 signals of isobutene ($C_{4,iso}1$, $C_{4,iso}2$, and $C_{4,iso}3$, respectively) and toluene signals (Tol-Cx, x = 1-5) measured during isobutene polymerization reactions with [Zr] = 0, 8, 11, and 15 mM. The toluene signal Tol-C1 was used as a reference for the line width change (ΔLW) and to calibrate the chemical shift. This toluene peak was calibrated against tetramethylsilane (TMS) using a separate sample.