

Supporting information

Substituent Effects in (κ^2 -*N,O*)Salicylaldiminato Nickel(II)-Methyl Pyridine Polymerization Catalysts: Terphenyls Controlling Polyethylene Microstructures

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Figure S1. ^1H NMR (400 MHz) of complex **7c-pyr** in benzene- d_6

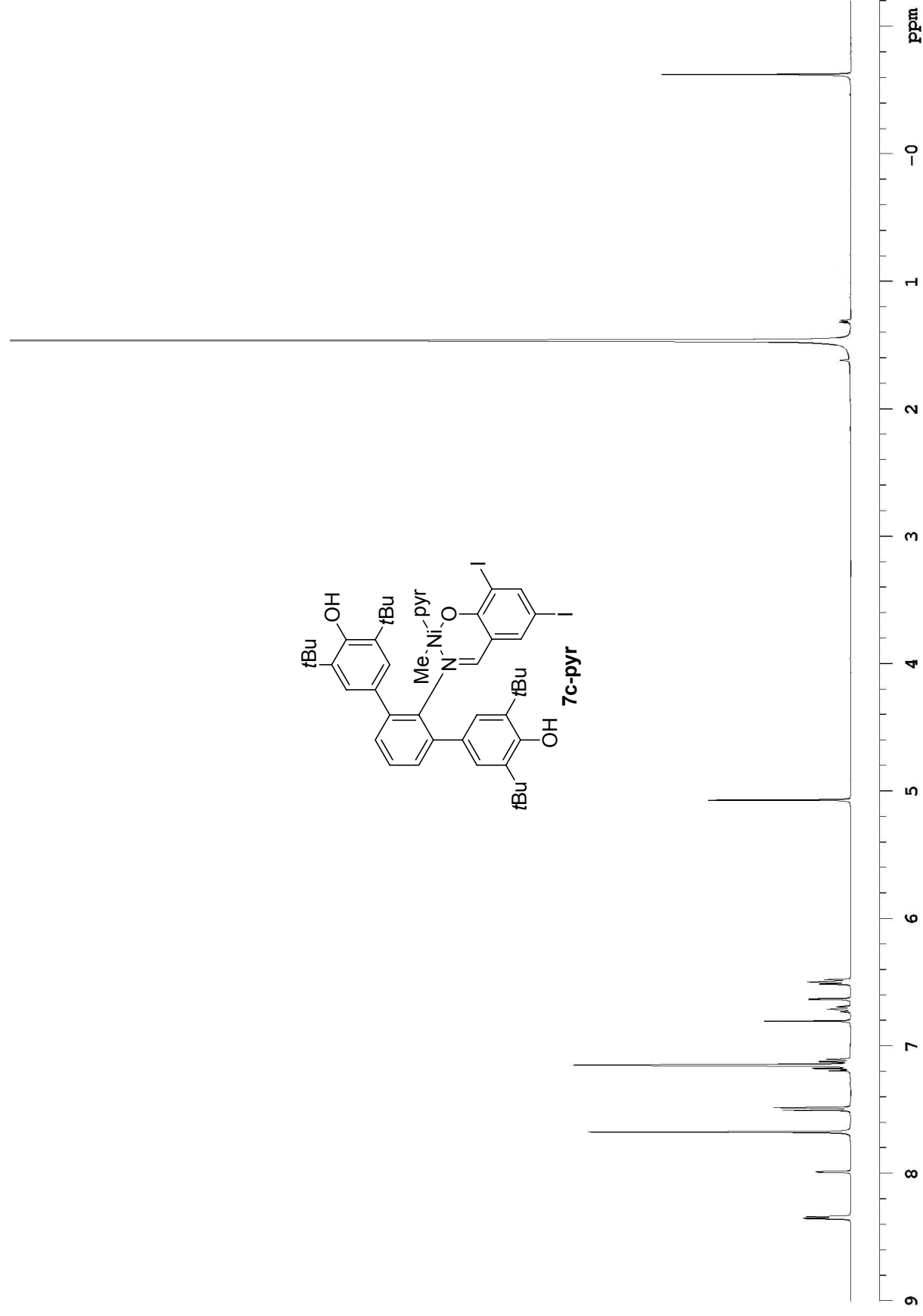


Figure S2. ^1H NMR (400 MHz) of complex **8c-pyr** in benzene- d_6

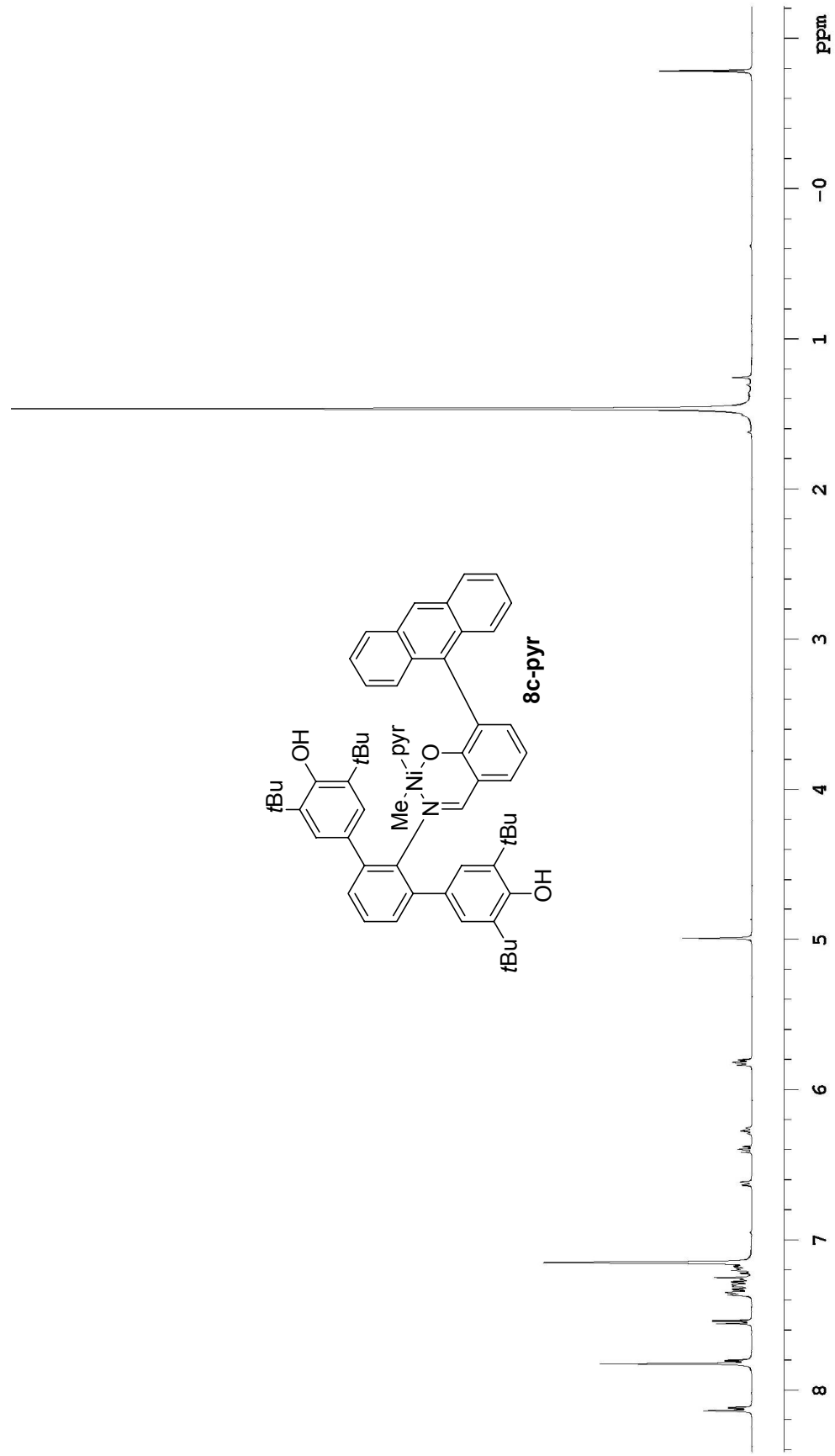


Figure S3. ^1H NMR (400 MHz) of complex **7b-pyr** in benzene- d_6

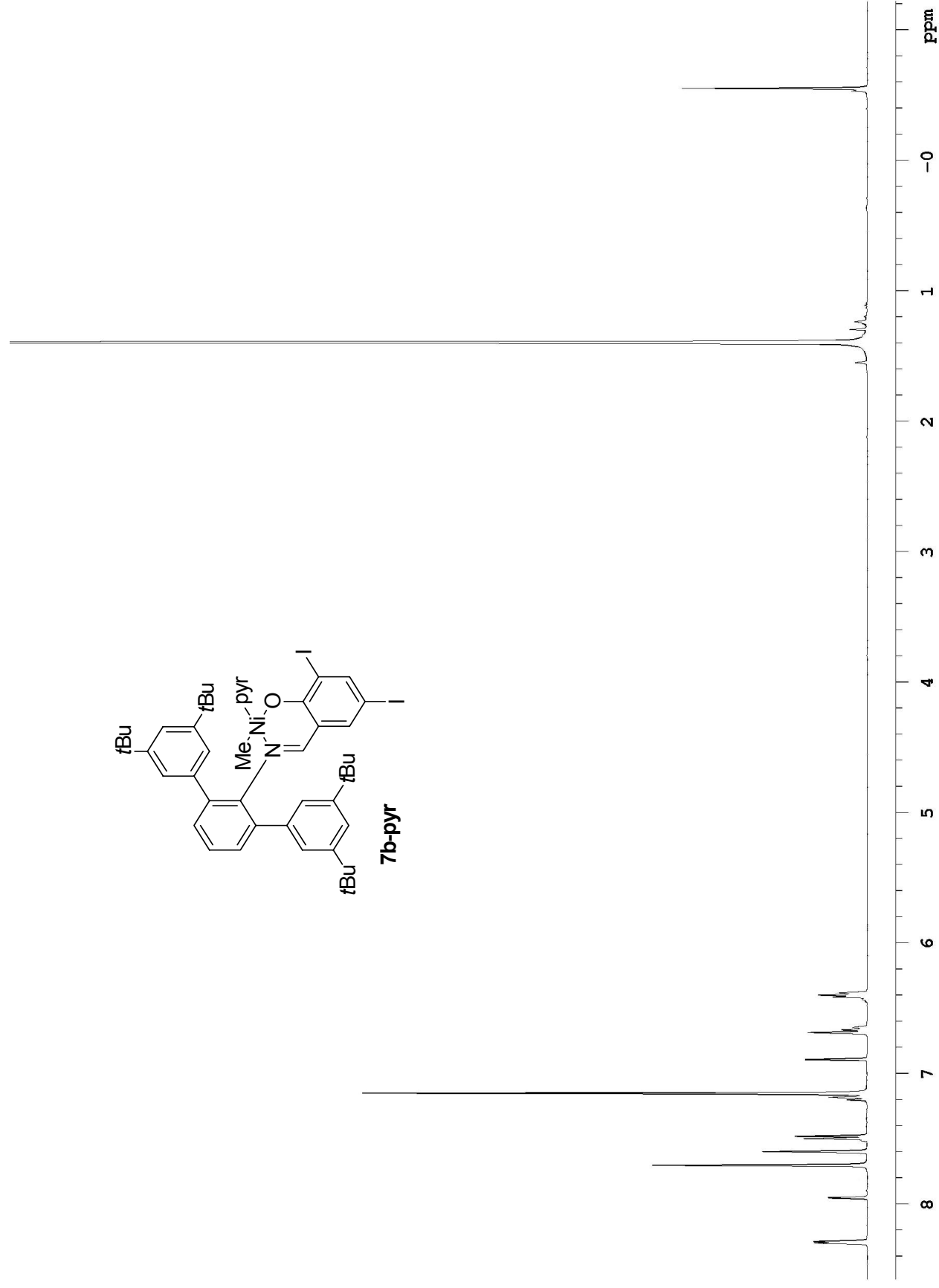


Figure S4. ^1H NMR (400 MHz) of complex **8b-pyr** in benzene- d_6

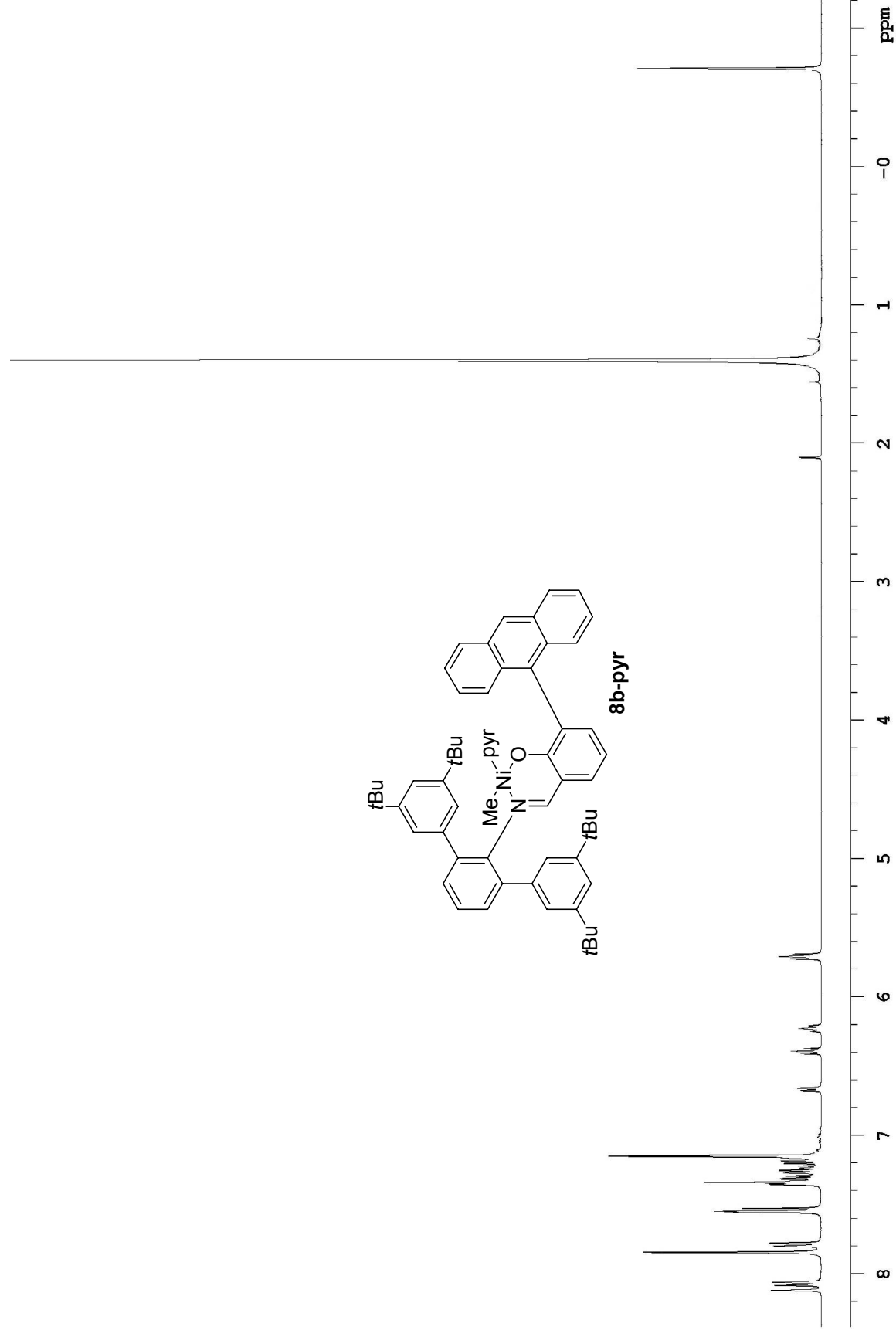


Figure S5. ^1H NMR (400 MHz) of complex **8e-pyr** in benzene- d_6

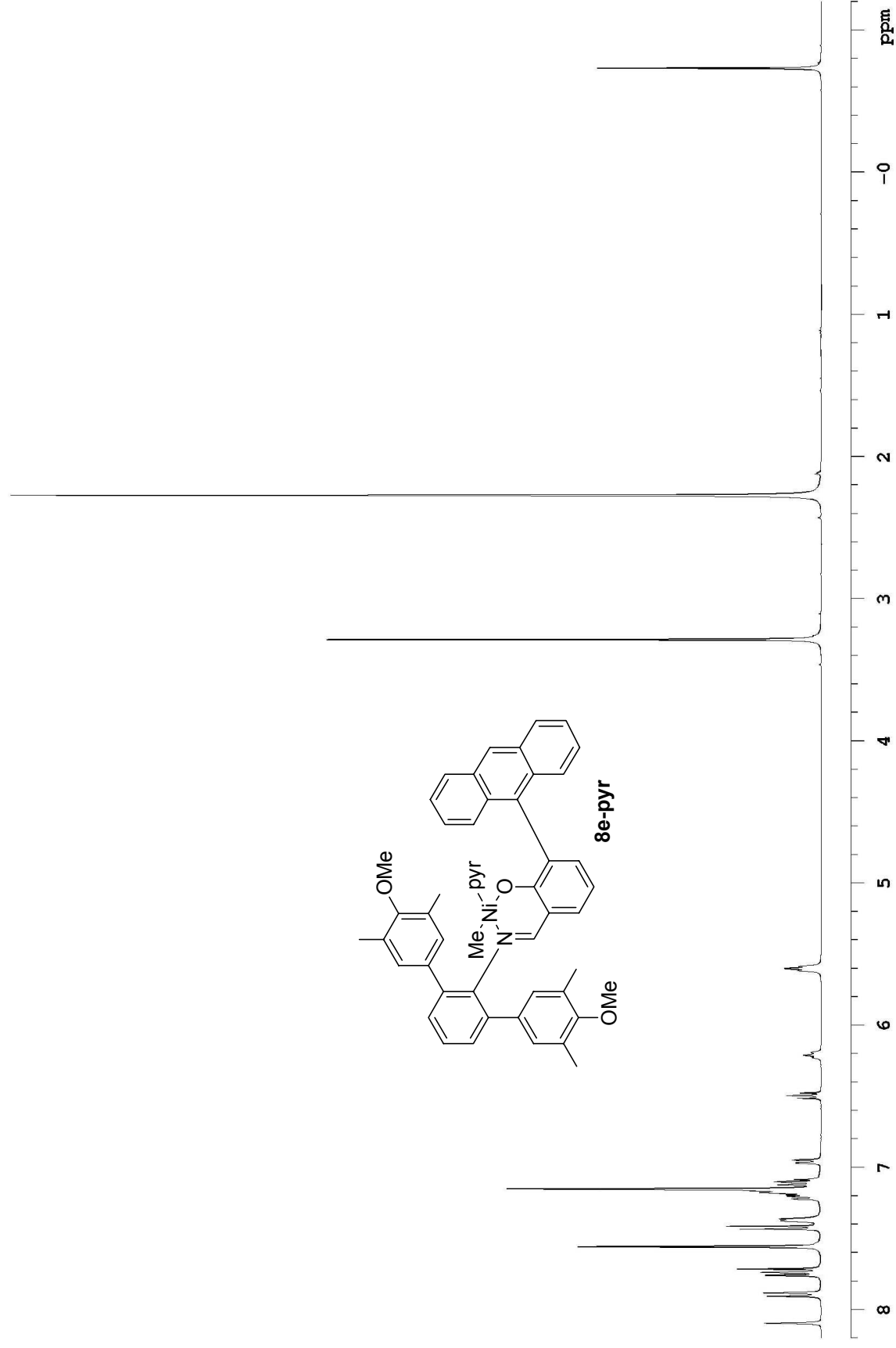
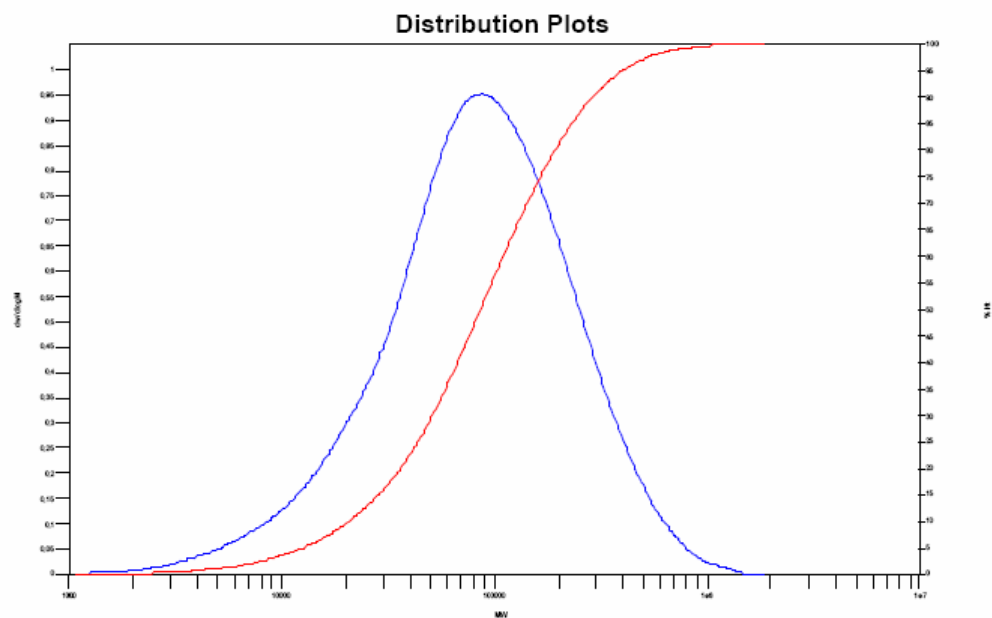


Figure S6. GPC trace of polyethylene obtained with catalyst **8a-pyr** at 50 °C, 40 bar ethylene

Mp: 87636 Mn: 43068 Mv: 113137 Mw: 128947
Mz: 276957 Mz+1: 476334 PD: 2.9940

**Figure S7.** GPC trace of polyethylene obtained with catalyst **8c-pyr** at 50 °C, 40 bar ethylene

Mp: 33018 Mn: 15847 Mv: 38448 Mw: 44646
Mz: 122953 Mz+1: 273360 PD: 2.8173

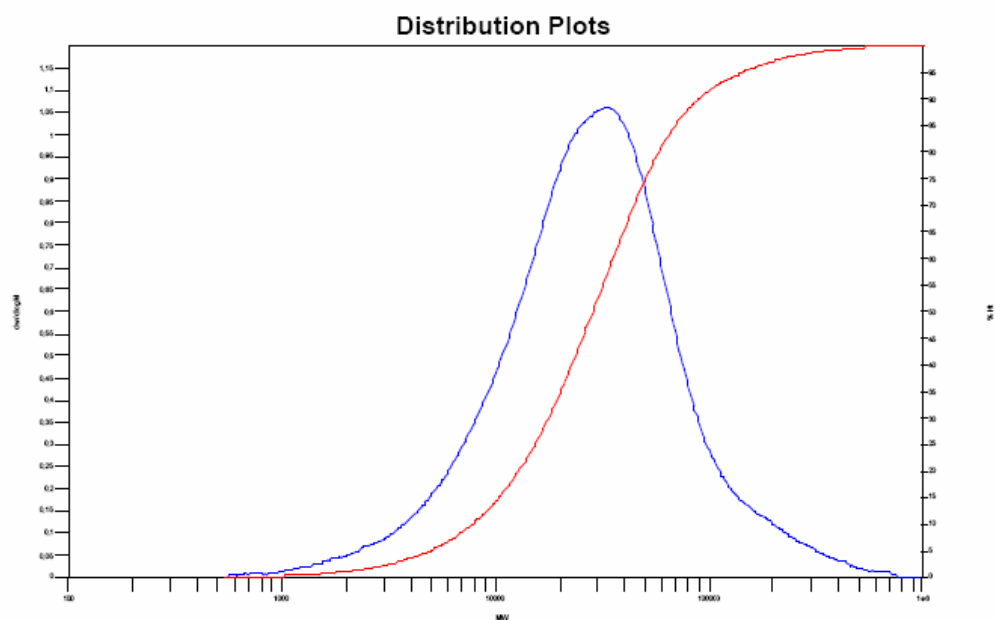
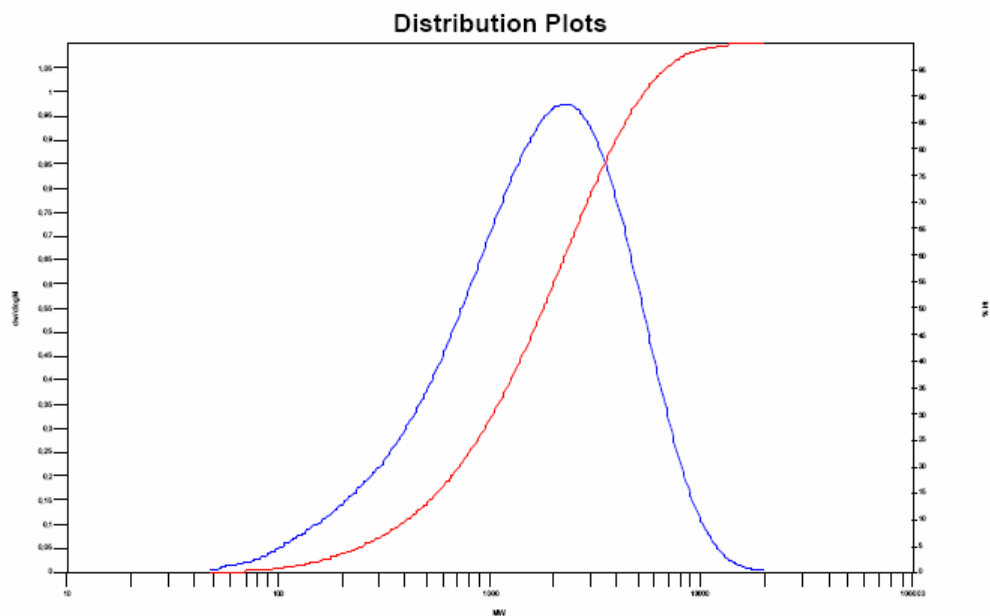


Figure S8. GPC trace of polyethylene obtained with catalyst **8e-pyr** at 50 °C, 40 bar ethylene

Mp: 2259 Mn: 903 Mv: 2149 Mw: 2392
Mz: 4292 Mz+1: 6271 PD: 2.6489

**Figure S9.** GPC trace of polyethylene obtained with catalyst **7e-pyr** at 50 °C, 40 bar ethylene

Mp: 1686 Mn: 818 Mv: 1590 Mw: 1741
Mz: 2895 Mz+1: 4063 PD: 2.1284

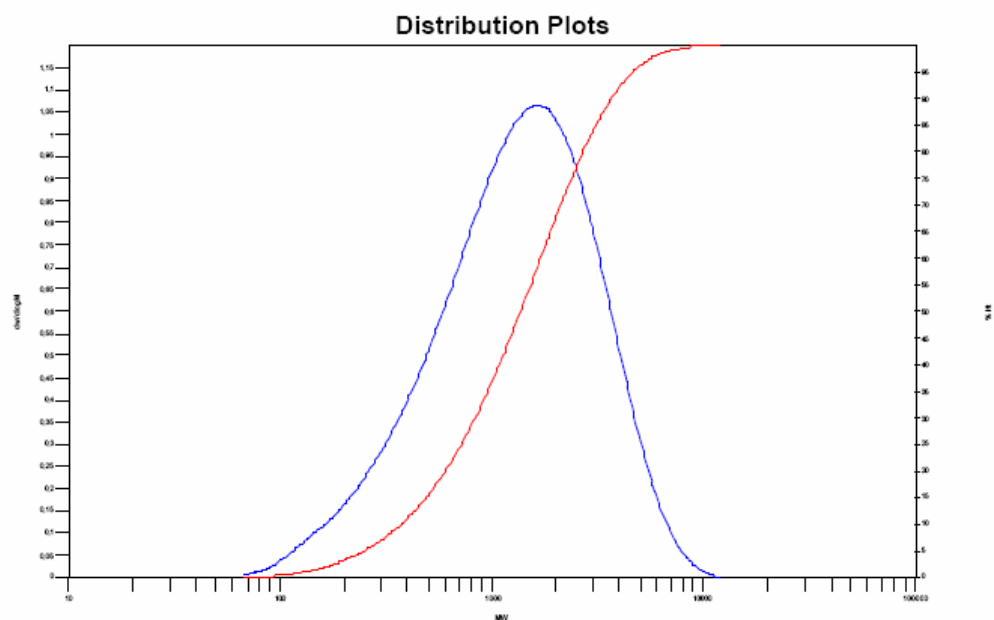


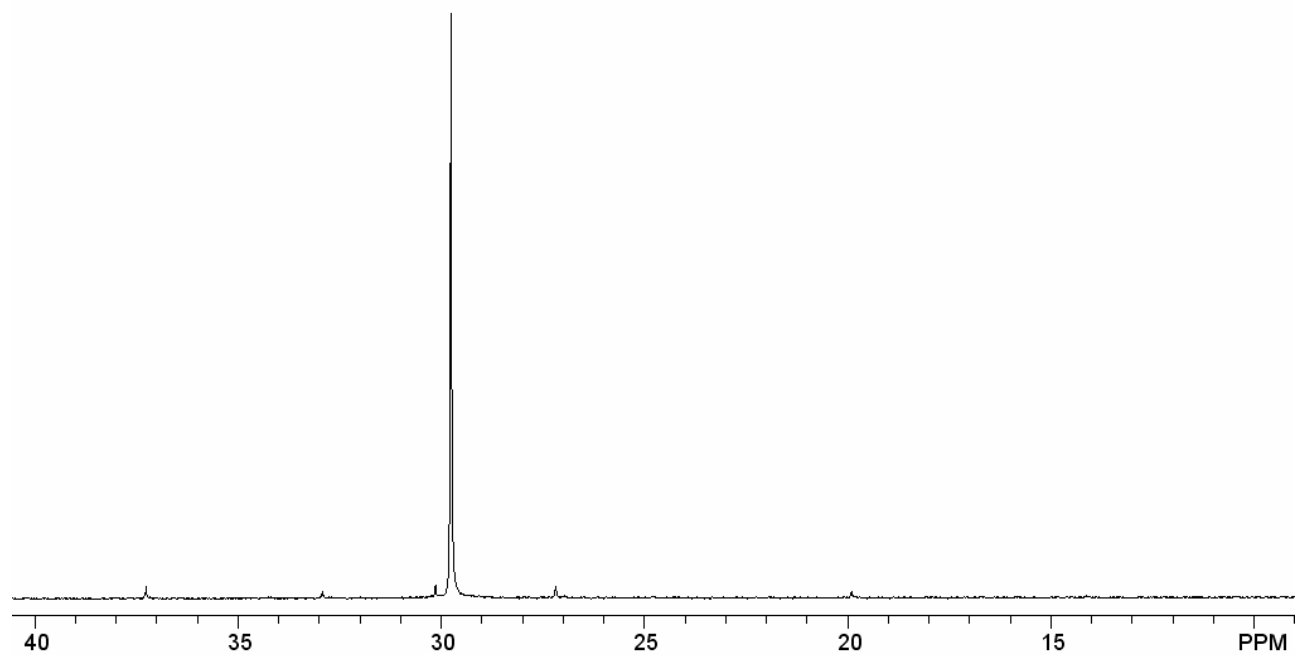
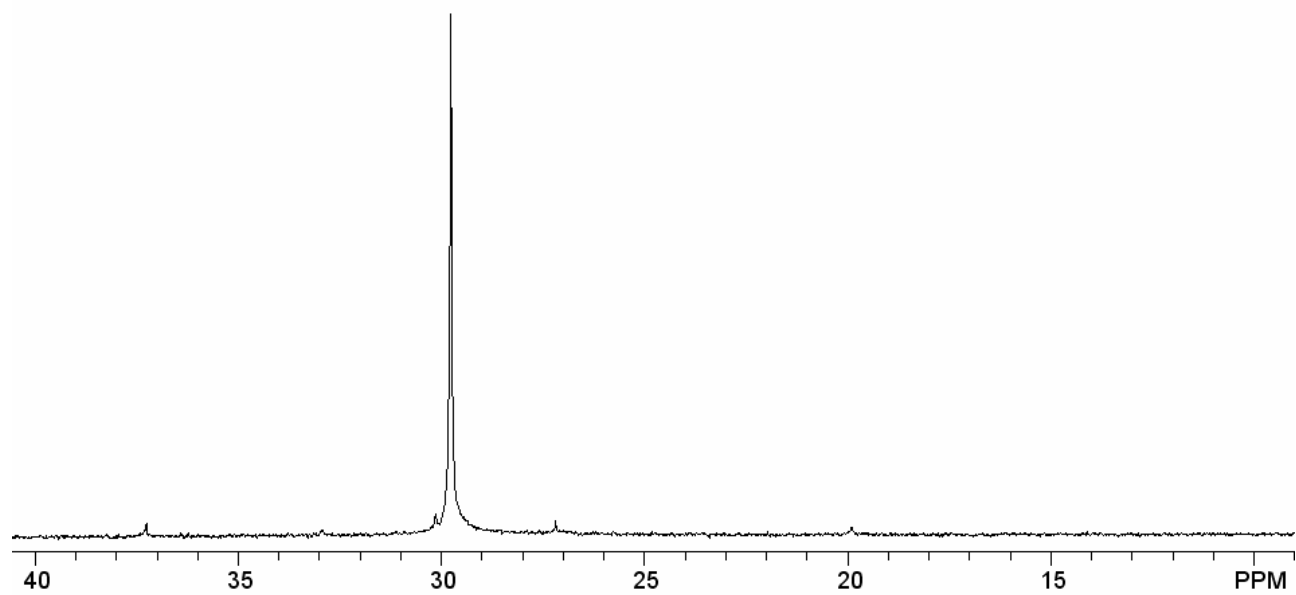
Figure S10. ^{13}C NMR (100 MHz) of PE obtained with **8a-pyr****Figure S11.** ^{13}C NMR (100 MHz) of PE obtained with **7a-pyr**

Figure S12. ^{13}C NMR (100 MHz) of PE obtained with **8b-pyr**

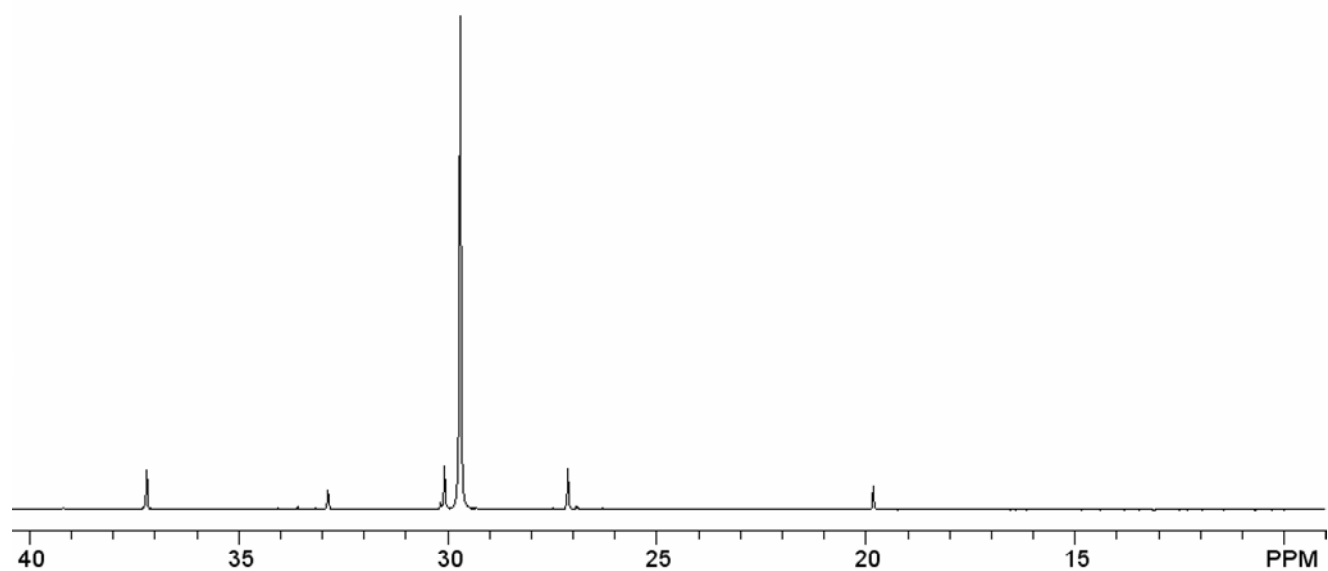


Figure S13. ^{13}C NMR (100 MHz) of PE obtained with **7b-pyr**

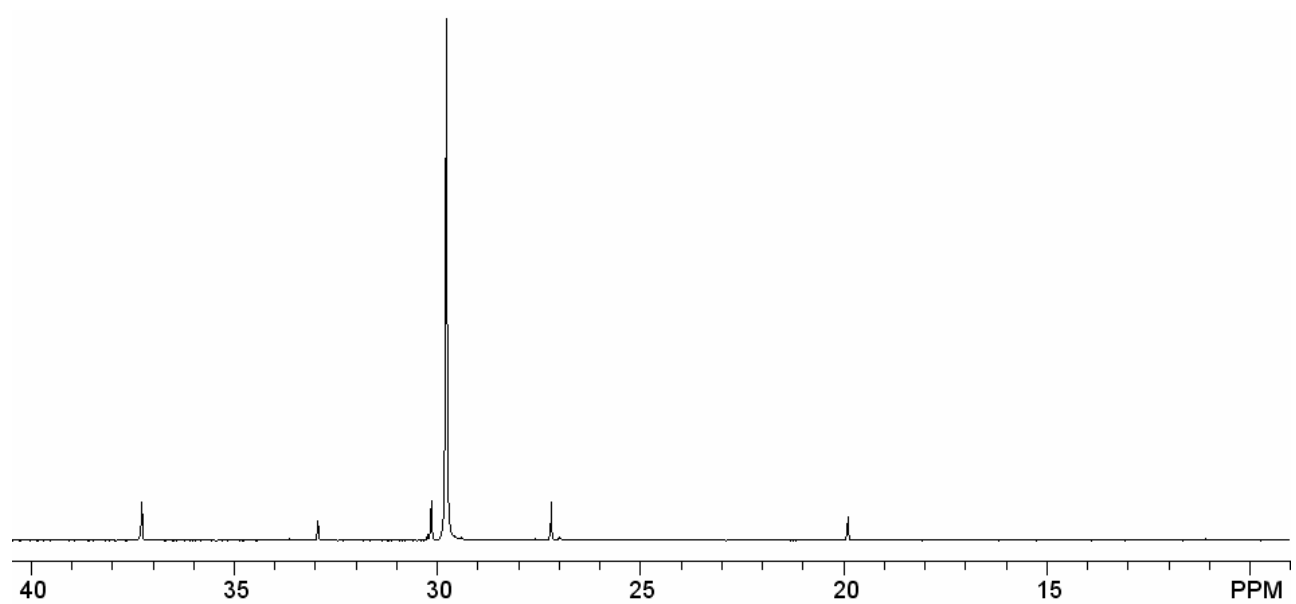
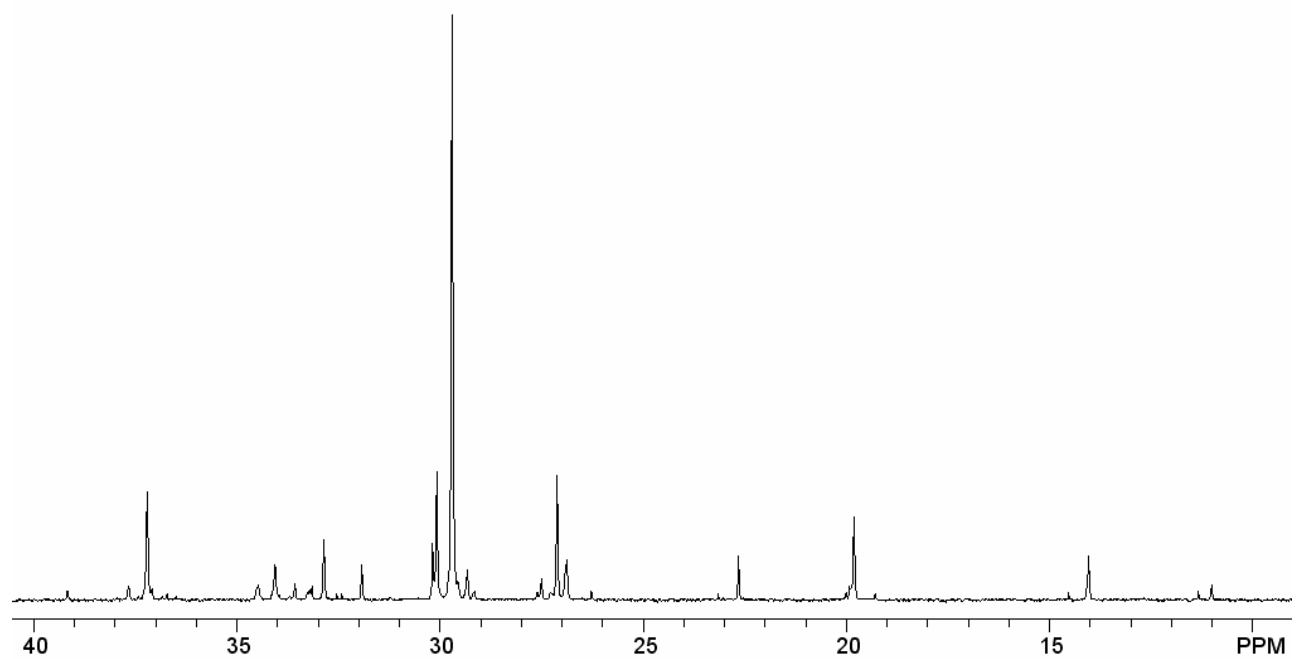
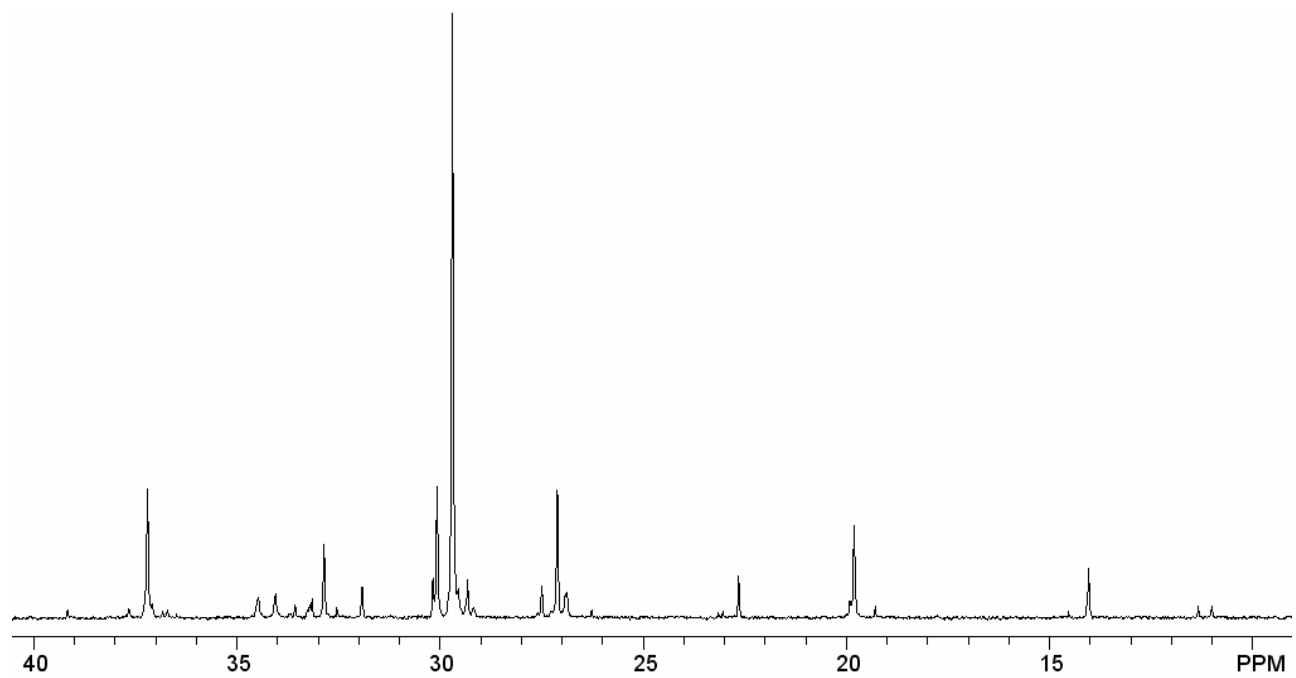


Figure S14. ^{13}C NMR (100 MHz) of PE obtained with **8e-pyr****Figure S15.** ^{13}C NMR (100 MHz) of PE obtained with **7e-pyr**

Mass-flow traces exhibit oscillating ethylene feed in some cases due to inertia of the feeding valve

Figure S16. Mass-flow traces of the ethylene polymerizations with **1a-pyr** and **8a-pyr**.

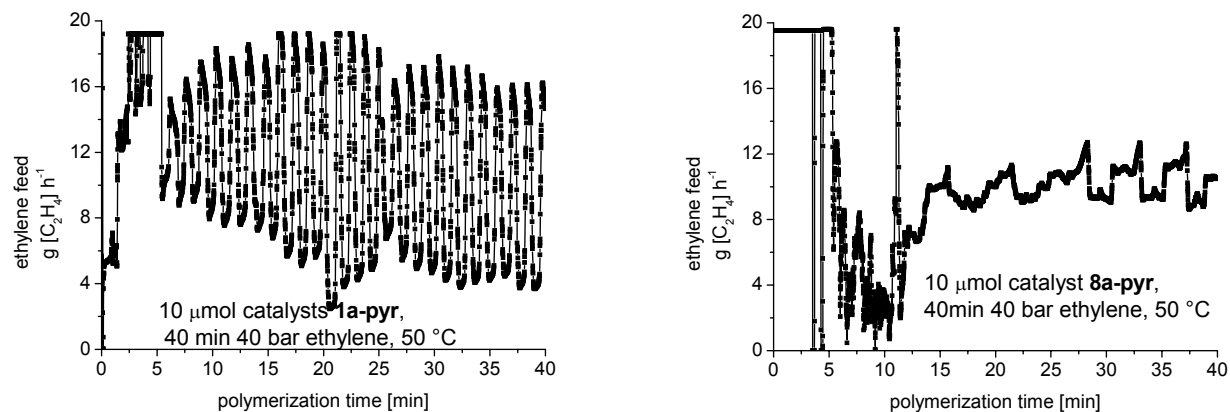


Figure S17. Mass-flow traces of the ethylene polymerizations with **8e-pyr** and **7e-pyr** at 50 °C.

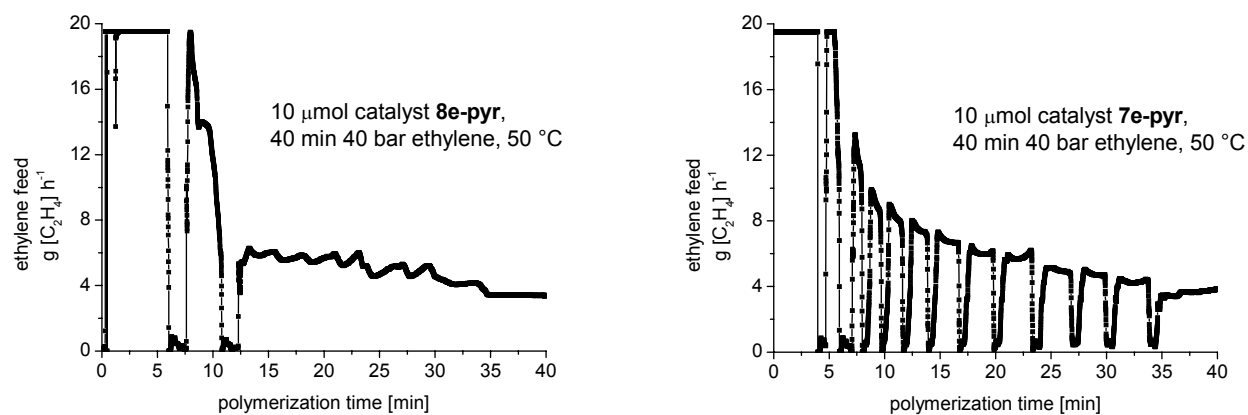
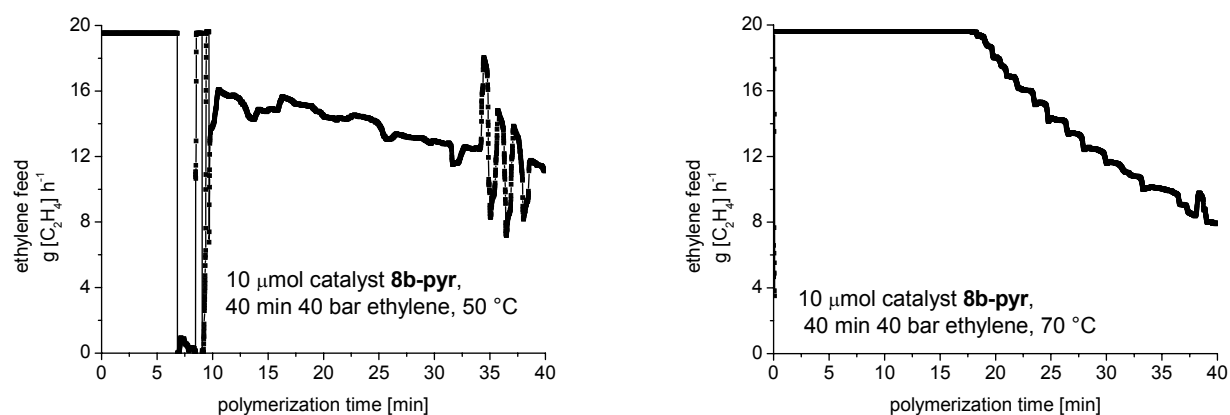


Figure S18. Mass-flow traces of the ethylene polymerizations with **8b-pyr** at 50 and 70 °C.**Figure S19.** Mass-flow traces of the ethylene polymerizations with **8c-pyr** at 50 and 70 °C.