Supporting information for

Solvent-Dependent Chain Conformation for Ring Closure of Metal Carbonyl Oligomers via Migration Insertion Polymerization (MIP) of

$\text{CpFe(CO)}_2(\text{CH}_2)_6\text{PPh}_2$

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Figure S1. FTIR spectrum for THF-insoluble materials produced from solution migration insertion polymerization of PFpC6P in THF.

Figure S2. a) Solid-state $^{31}$P NMR and b) Solid-state $^{13}$C NMR spectra of THF-insoluble materials produced from solution migration insertion polymerization of CpFe(CO)$_2$(CH$_2$)$_6$PPh$_2$ in THF.
Figure S3. $^1$H NMR spectrum of THF-soluble product produced from solution migration insertion polymerization of CpFe(CO)$_2$(CH$_2$)$_6$PPh$_2$ in THF/hexane mixed solvents.

Figure S4. Initial morphology of the simulation system containing one PFpC6P oligomer with DP = 3 and 74 THF molecules. The box size is 23.27×23.27×23.27 Å$^3$. 

3
Figure S5. a) Root mean squared end-to-end distance ($R_e$) and b) radius of gyration ($R_g$) of FpC6P oligomers as a function of degree of polymerization (DP).

Figure S6. a) Root mean squared end-to-end distance ($R_e$) and b) radius of gyration ($R_g$) of FpC3P oligomers as a function of degrees of polymerization (DP).
Figure S7. Simulated structures of PFpC6P oligomers in THF/DMSO (a1-d1), THF/pyrrole (a2-d2) and THF/pyridine (a3-d3) mixed solvents. Purple lines denote PFpP backbones; Red arrows represent end-to-end distances ($R_e$). The unit of distance is Å.