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Supporting information for

Solvent-Dependent Chain Conformation for Ring Closure of Metal Carbonyl Oligomers via Migration Insertion Polymerization (MIP) of $CpFe(CO)_2(CH_2)_6PPh_2$

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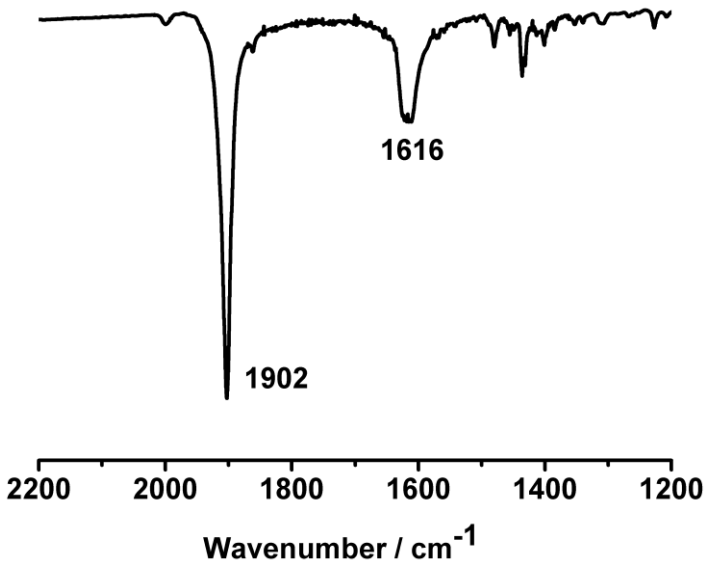

Figure S1. FTIR spectrum for THF-insoluble materials produced from solution migration insertion polymerization of PFpC6P in THF.

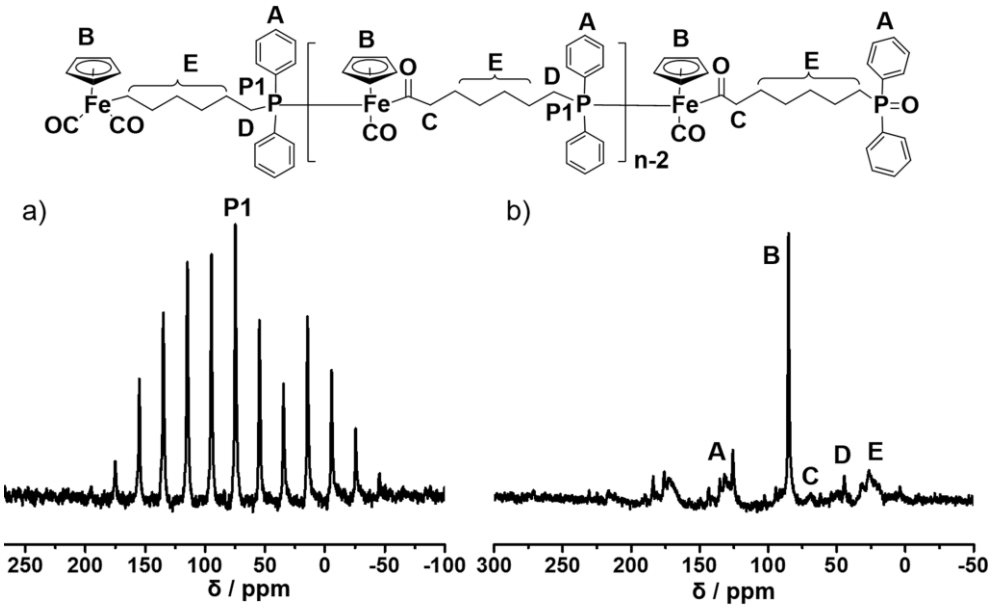

Figure S2. a) Solid-state ^{31}P NMR and b) Solid-state ^{13}C NMR spectra of THF-insoluble materials produced from solution migration insertion polymerization of $CpFe(CO)_2(CH_2)_6PPh_2$ in THF.

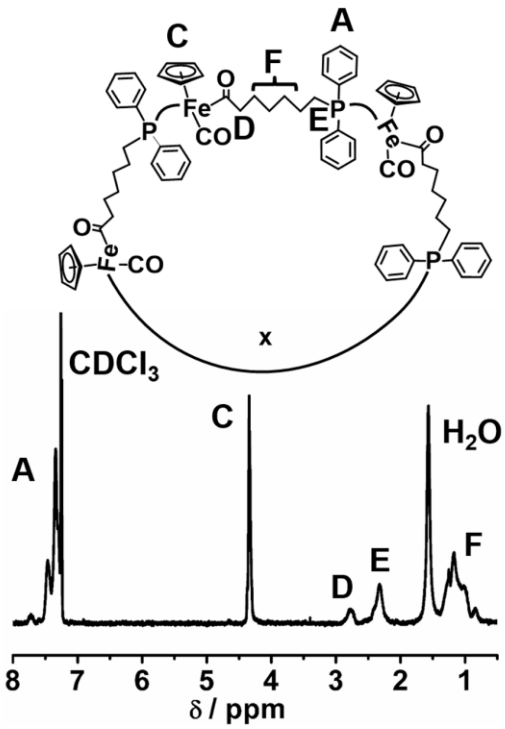

Figure S3. ^{1}H NMR spectrum of THF-soluble product produced from solution migration insertion polymerization of $CpFe(CO)_2(CH_2)_6PPh_2$ in THF/hexane mixed solvents.

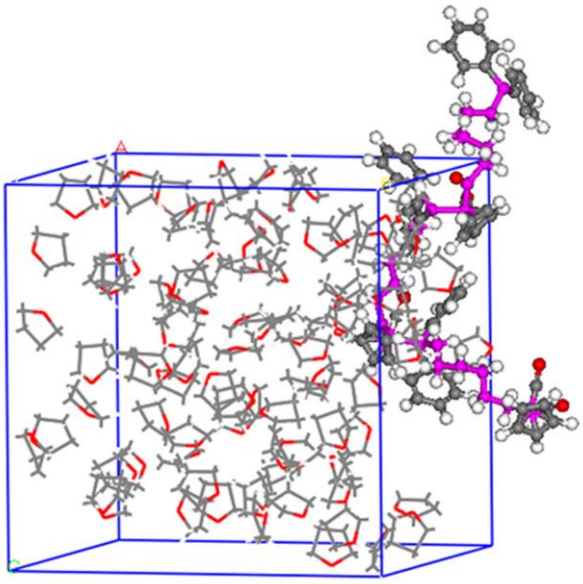

Figure S4. Initial morphology of the simulation system containing one PFpC6P oligomer with DP = 3 and 74 THF molecules. The box size is 23.27×23.27×23.27 Å^3.

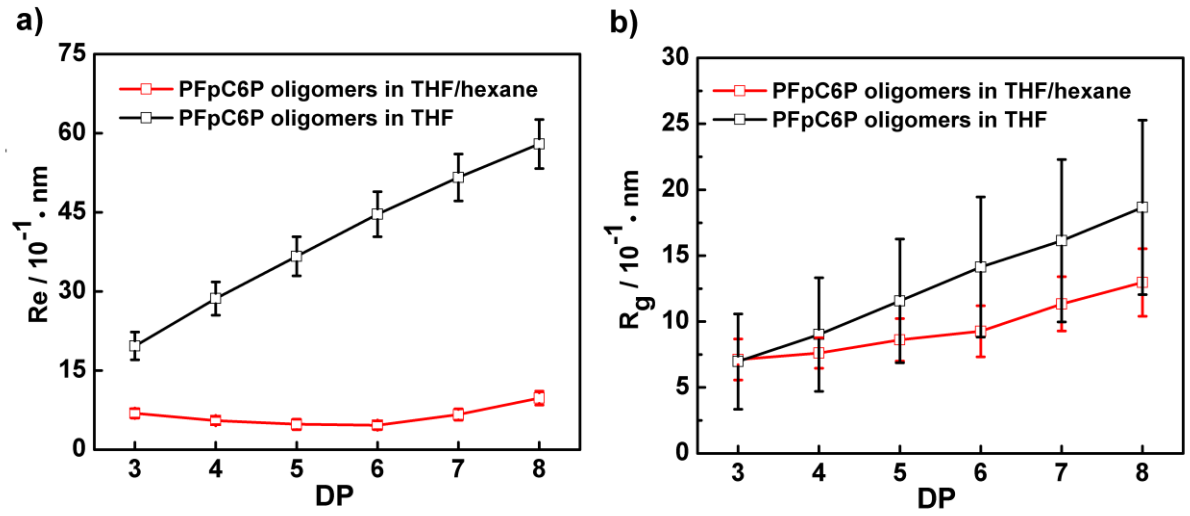

Figure S5. a) Root mean squared end-to-end distance (*R*e) and b) radius of gyration (R_g) of FpC6P oligomers as a function of degree of polymerization (DP).

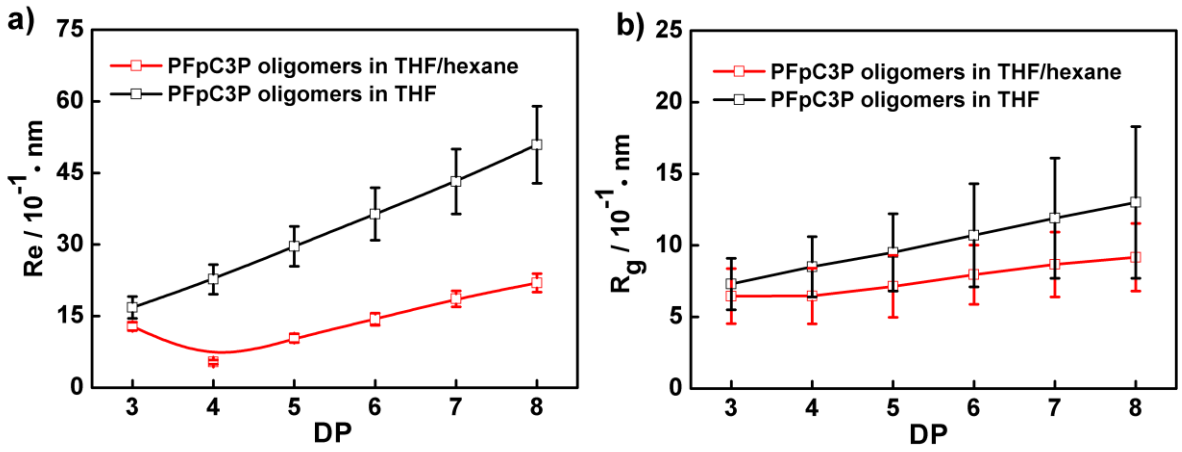

Figure S6. a) Root mean squared end-to-end distance (*R*e) and b) radius of gyration (R_g) of FpC3P oligomers as a function of degrees of polymerization (DP).

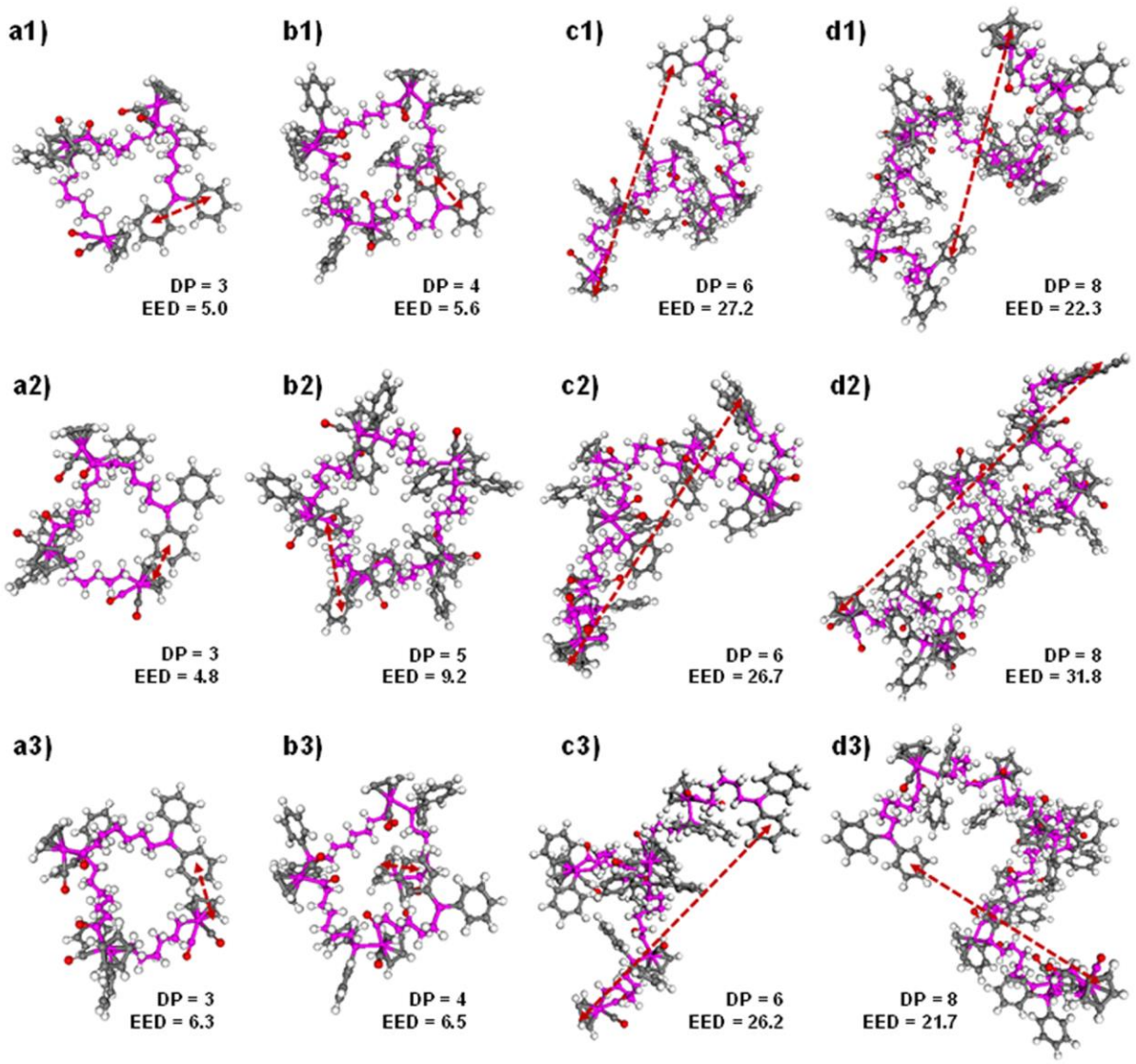

Figure S7. Simulated structures of PFpC6P oligomers in THF/DMSO (a1-d1), THF/pyrrole (a2-d2) and THF/pyridine (a3-d3) mixed solvents. Purple lines denote PFpP backbones; Red arrows represent end-to-end distances (*R*e). The unit of distance is Å.