SUPPLEMENTARY MATERIAL

Syntheses of Iron(0) Complexes of Symmetrical Trialkylphosphines with Three Terminal Vinyl Groups, \( \text{P}((\text{CH}_2)_m \text{CH}=\text{CH}_2)_3 \)

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Figure s1. $^{13}$C NMR of *trans*-Fe(CO)$_3$(P((CH$_2$)$_7$CH=CH$_2$)$_3$)$_2$ (2d) with inset of complex multiplet of the PCH$_2$CH$_2$CH$_2$ signal

Figure s2. $^{13}$C NMR of *trans*-Fe(CO)(NO)(Cl)(P((CH$_2$)$_7$CH=CH$_2$)$_3$)$_2$ (4d-Cl) with inset of well-defined virtual triplet of the PCH$_2$CH$_2$CH$_2$ signal
Figure s3. CH$_2$ region of the $^{13}$C NMR spectra of trans-Fe(CO)(NO)(X)(P((CH$_2$)$_5$CH=CH$_2$)$_3$)$_2$ (4b-Cl, Br, I, and CN) illustrating the downfield shift of the PCH$_2$CH$_2$CH$_2$ signal
Figure s4. $^1$H, $^1$H COSY NMR spectrum (500 MHz) of 4a-Cl illustrating signal assignments.
Figure s5. $^1$H, $^{13}$C{$_^1$H} HSQC NMR spectrum (500 MHz) of 4a-Cl illustrating signal assignments.
Figure s6. $^1$H, $^1$H COSY NMR spectrum (500 MHz) of 4d-Cl illustrating signal assignments
Figure s7. $^1$H, $^13$C$^1$H HSQC NMR spectrum (500 MHz) of 4d-Cl illustrating signal assignments