Cyclopentanone Insertion into η^9, η^5-Bis(indenyl) Zirconium Sandwich Complexes.

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-- Supporting Information –

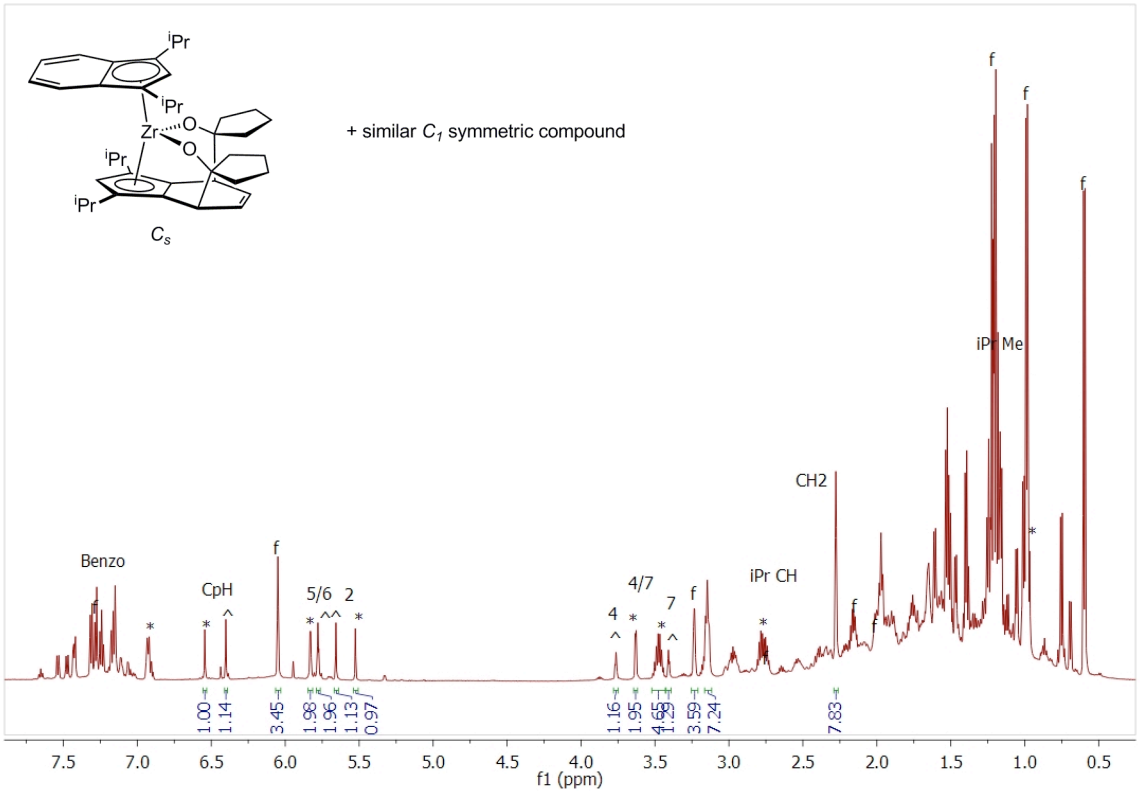

Figure S1. ^{1}H NMR spectrum of a benzene-d_6 solution of **1-(O^{c}Pent)$_2$-1,4** after heating 90 ºC for 1 week affording both C_1 (*) and C_s (^) symmetric isomers of **1-(O^{c}Pent)$_2$-4,7**, along with free ligand (f) in a 1 : 1 : 2.7 ratio. The IUPAC numbering system presented in Chart 1 (full text) is used.

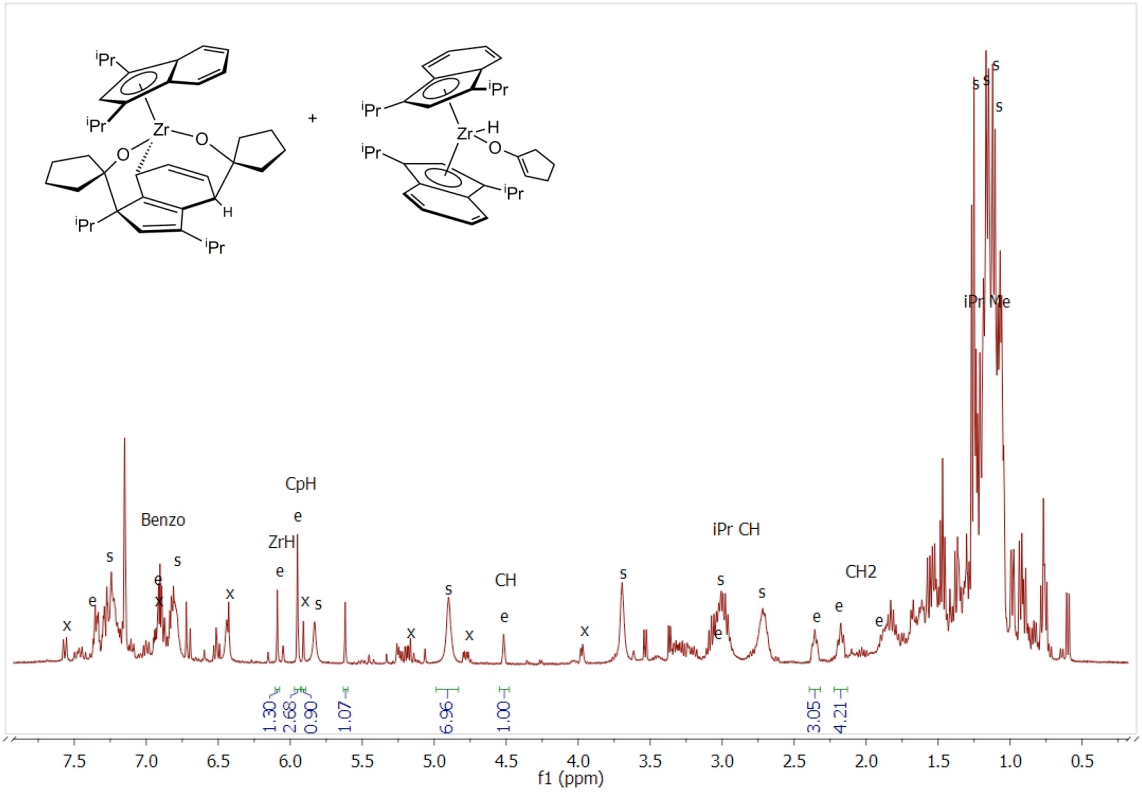

Figure S2. ^{1}H NMR spectrum of a benzene-d_6 solution of **1** (s) after addition of 0.5 equivalents of cyclopentanone and allowing it to stand at 22 ºC for 24 hours, forming both **1-(O^{c}Pent)$_2$-1,4** (x) and **1-(O^{c}Pentenyl)H** (e) in a 0.9 : 1 ratio.

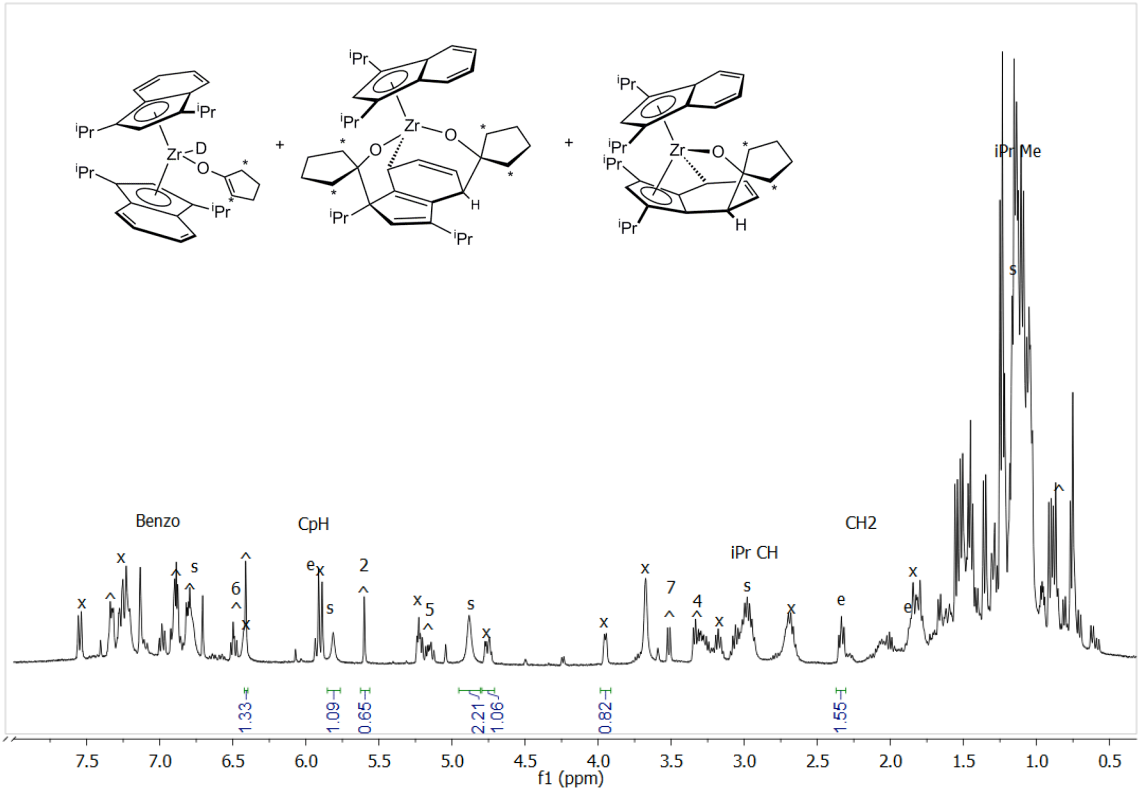

Figure S3. ^{1}H NMR spectrum of a benzene-d_6 solution of **1** (s) after addition of 0.5 equivalents of cyclopentanone-d_4 and allowing it to stand at 22 ºC for 24 hours, forming **1-(O^{c}Pent)$_2$-1,4** (x), **1-(O^{c}Pentenyl)H** (e) and **1-(O^{c}Pent)-4** (^) in a 1.1 : 1 : 0.7 ratio.
The IUPAC numbering system presented in Chart 1 is used for **1-(O^{c}Pent)-4** (^).

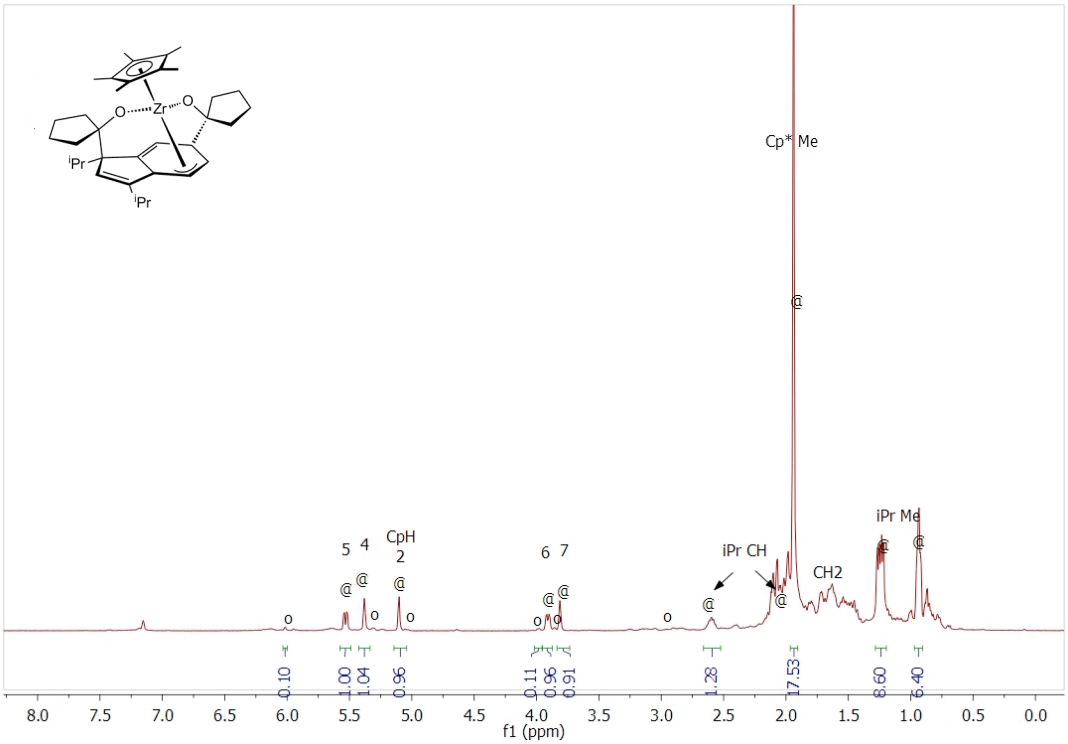

Figure S4. ^{1}H NMR spectrum of a benzene-d_6 solution of **2-(O^{c}Pent)$_2$-1,6** (@). Trace quantities of **2-(O^{c}Pent)$_2$-1,4** (o) are also present. The IUPAC numbering system presented in Chart 1 is used.

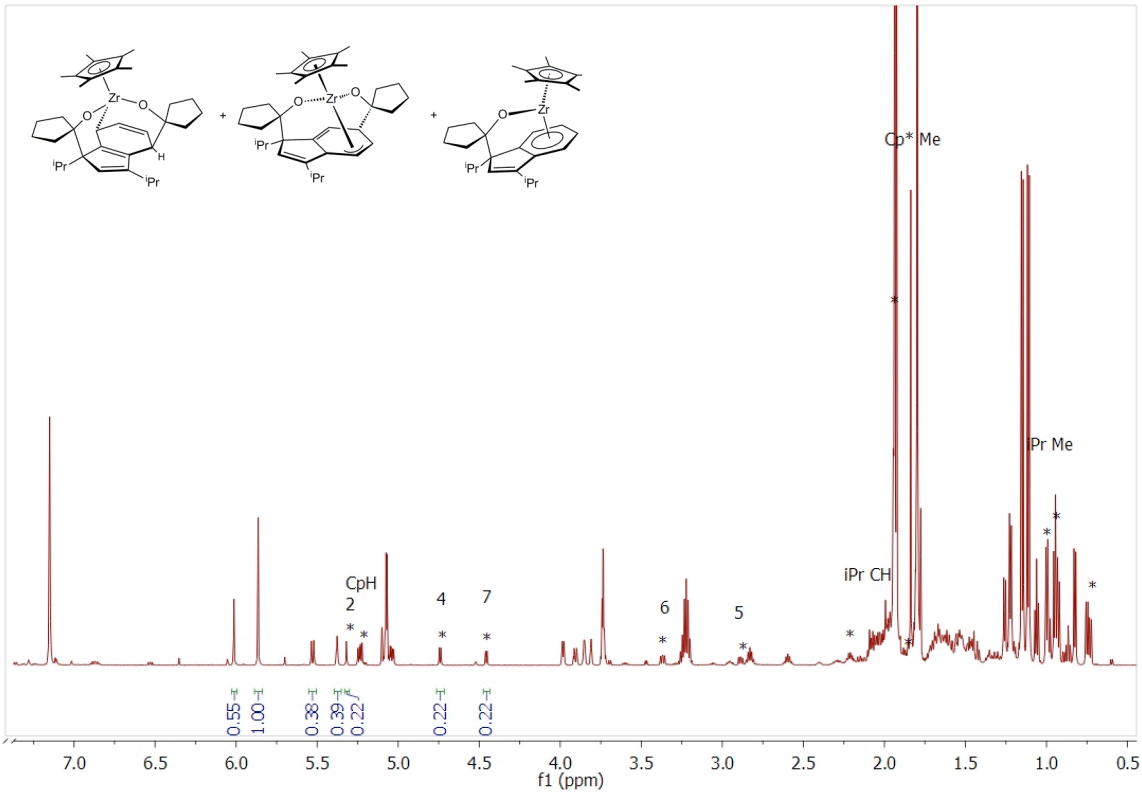

Figure S5. ^{1}H NMR spectrum of a benzene-d_6 solution of **2** initially after addition of 0.5 equivalents of cyclopentanone, affording **2-(O^{c}Pent)$_2$-1,4, 2-(O^{c}Pent)$_2$-1,6** and **2-(O^{c}Pent)-1** (*), along with **2** in a 0.21 : 0.16 : 0.16 : 1.0 ratio. The IUPAC numbering system presented in Chart 1 is used for **2-(O^{c}Pent)-1** (*).

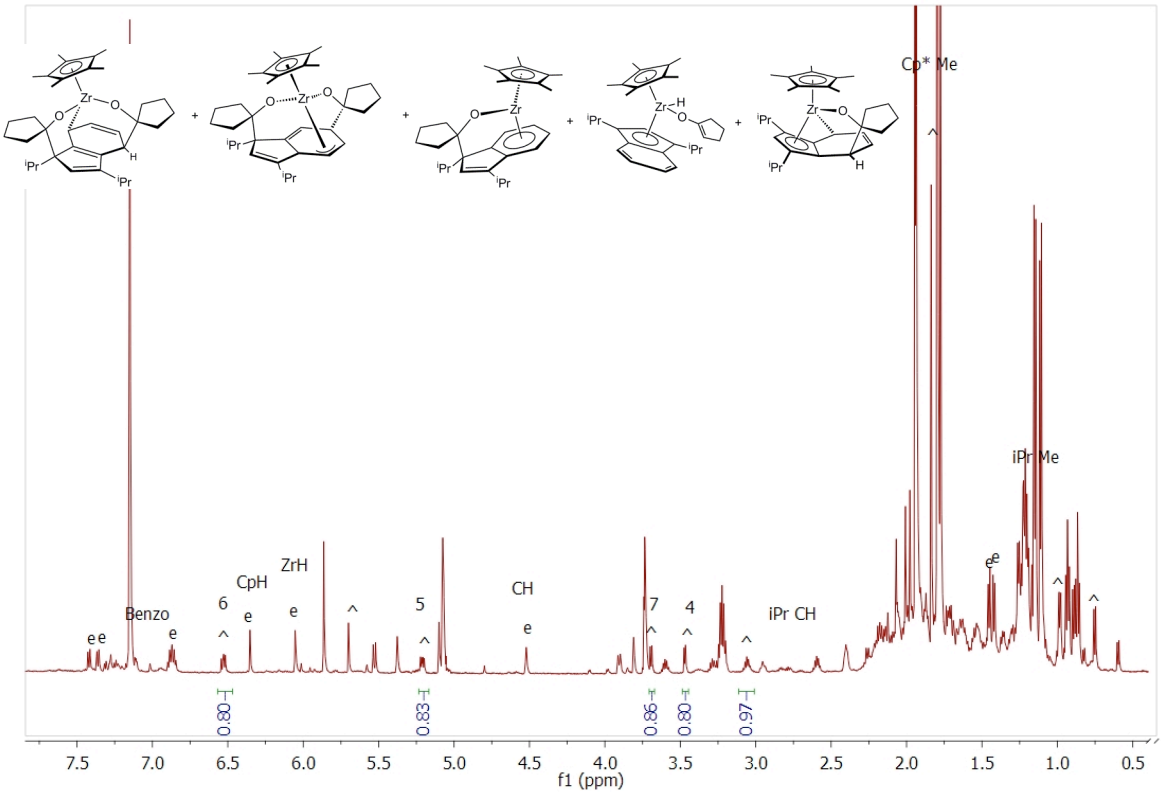

Figure S6. ^{1}H NMR spectrum of a benzene-d_6 solution of **2** 24 hours after addition of 0.5 equivalents of cyclopentanone, resulting in a the ratio of 1 : 0.06 : 0.19 : 0.32 : 0.19 for **2** : **2-(O^{c}Pent)$_2$-1,4**: **2-(O^{c}Pent)$_2$-1,6** : **2-(O^{c}Pentenyl)H** (e) : **2-(O^{c}Pent)-4** (^). The IUPAC numbering system presented in Chart 1 is used for **2-(O^{c}Pent)-4** (^).