

## Supporting information for

# Zirconium and Hafnium Complexes Supported by Linked Bis( $\beta$ -diketiminato) Ligands: Synthesis, Characterization, and Catalytic Application in Ethylene Polymerization

*Shaogang Gong, Haiyan Ma<sup>\*</sup>, Jiling Huang<sup>\*</sup>*

Laboratory of Organometallic Chemistry, East China University of Science and Technology,  
130 Meilong Road, Shanghai 200237, People's Republic of China

---

<sup>\*</sup> Corresponding authors. Tel./Fax: +86 21 64253519. *E-mail addresses:*  
haiyanma@ecust.edu.cn (H. Ma), qianling@online.sh.cn (J. Huang)

## Contents:

**Figure S1.** The  $^1\text{H}$  NMR spectrum of complex **4a**.

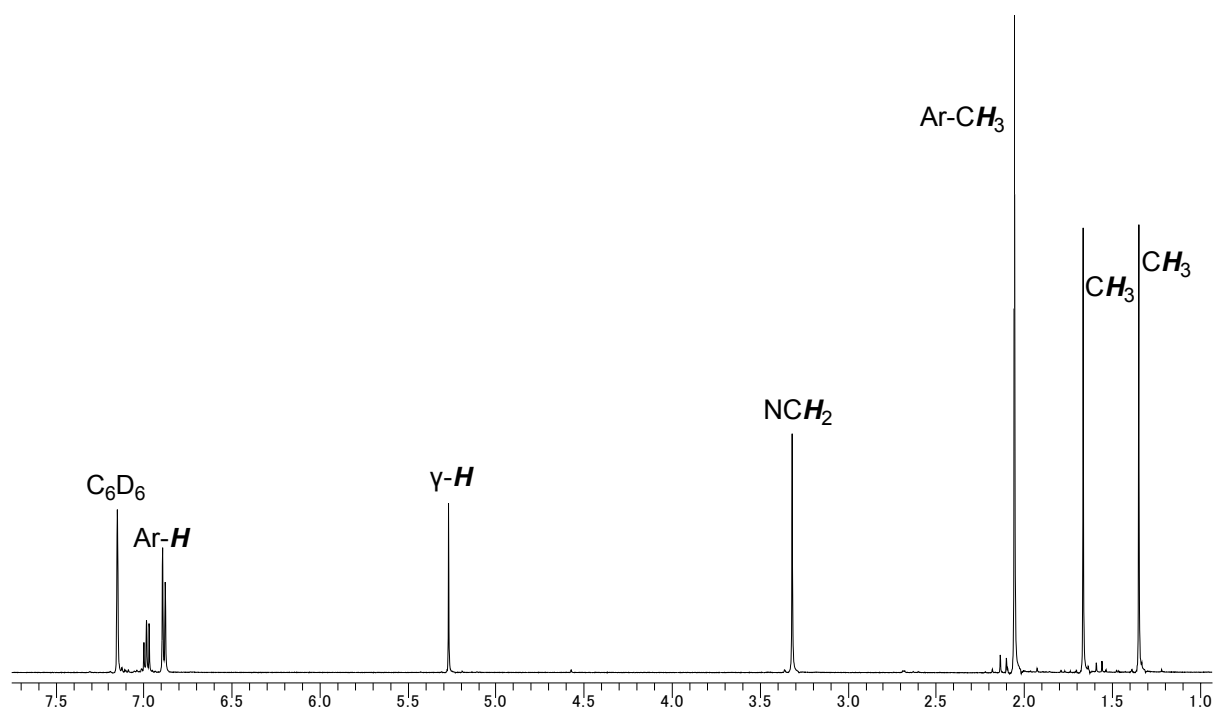
**Figure S2.** The  $^1\text{H}$  NMR spectrum of complex **4c**.

**Figure S3.** The variable-temperature  $^1\text{H}$  NMR spectra of complex **4a**.

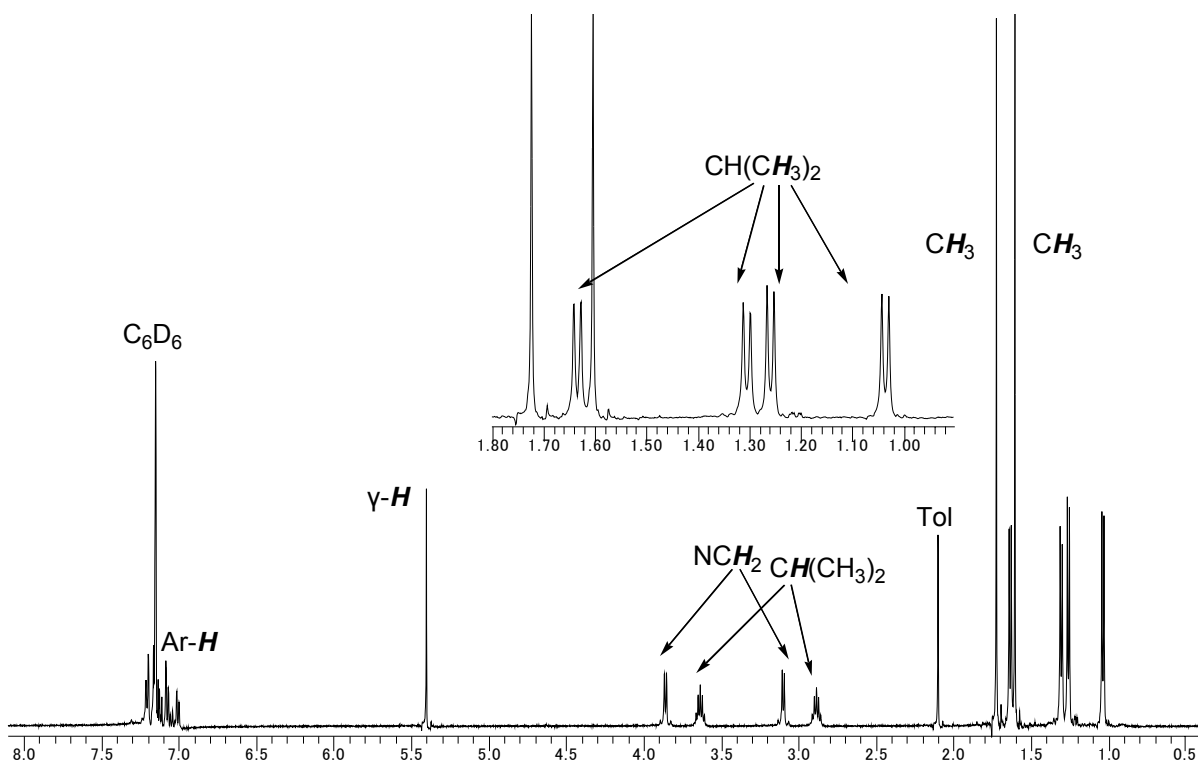
**Figure S4.** The variable-temperature  $^1\text{H}$  NMR spectra of complex **5a**.

**Figure S5.** Eyring plot for interconversion of different stereoisomers of complex **5a** in toluene- $d_8$ .

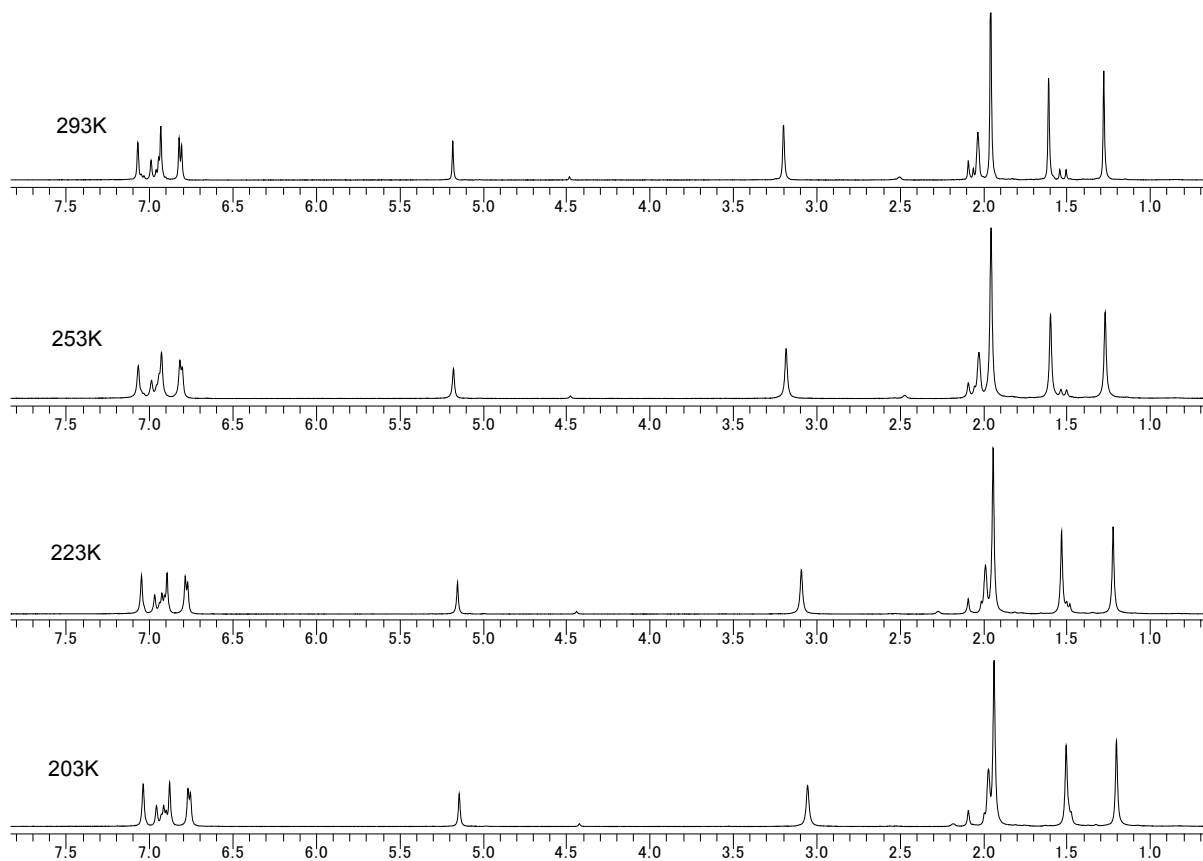
**Figure S6.** The  $^{13}\text{C}$  NMR spectrum of polyethylene (sample of Run 8) prepared with complex **4b** ( $\text{R}^1 = \text{R}^2 = \text{Cl}$ ) (measurement conditions: 1,2-dichlorobenzene- $d_4$ , 100 °C).



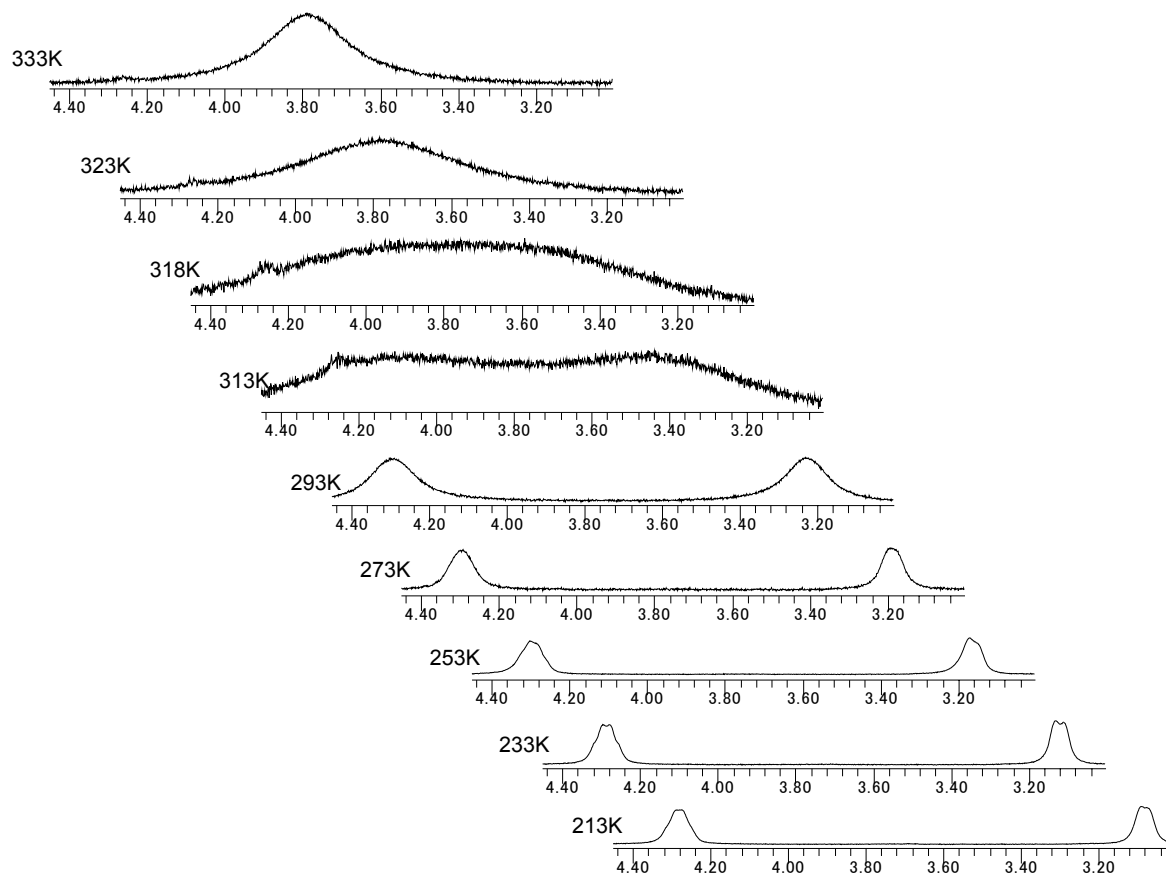
**Figure S1.** The  $^1\text{H}$  NMR spectrum of complex **4a** ( $\text{R}^1 = \text{R}^2 = \text{Me}$ ) ( $\text{C}_6\text{D}_6$ , 500 MHz).



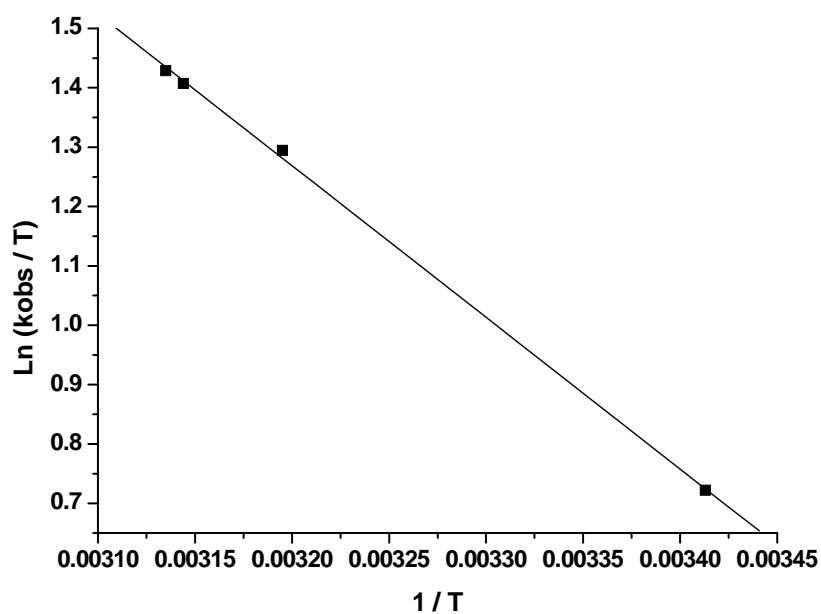
**Figure S2.** The  $^1\text{H}$  NMR spectrum of complex **4c** ( $\text{R}^1 = \text{R}^2 = i\text{Pr}$ ) ( $\text{C}_6\text{D}_6$ , 500 MHz).



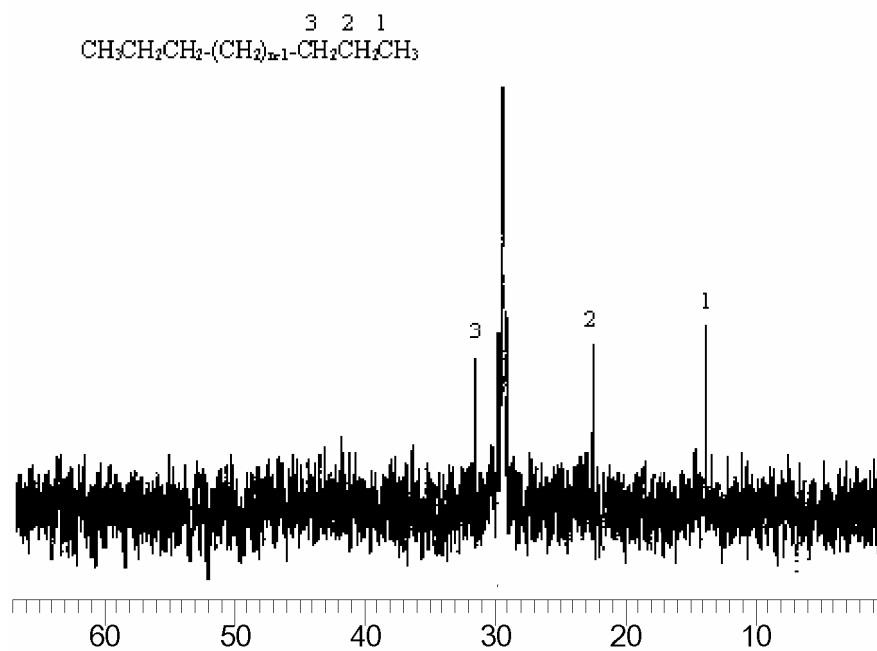
**Figure S3.** The variable-temperature <sup>1</sup>H NMR spectra of complex **4a** (C<sub>7</sub>D<sub>8</sub>, 500 MHz).



**Figure S4.** The variable-temperature  $^1\text{H}$  NMR spectra of complex **5a** ( $\text{C}_7\text{D}_8$ , 500 MHz).



**Figure S5.** Eyring plot for interconversion of different stereoisomers of complex **5a** in toluene- $d_8$ .



**Figure S6.** The  $^{13}\text{C}$  NMR spectrum of polyethylene (sample of Run 8) prepared with complex **4b** ( $\text{R}^1 = \text{R}^2 = \text{Cl}$ ) (measurement conditions: 1,2-dichlorobenzene- $d_4$ , 100 °C).