

# **Living ring-opening polymerization of $\epsilon$ -caprolactone catalyzed by $\beta$ -quinolyl-enamino aluminium complexes: ligand electronic effect†**

Peng Wang,<sup>a</sup> Jianbin Chao<sup>c</sup> and Xia Chen<sup>a,b\*</sup>

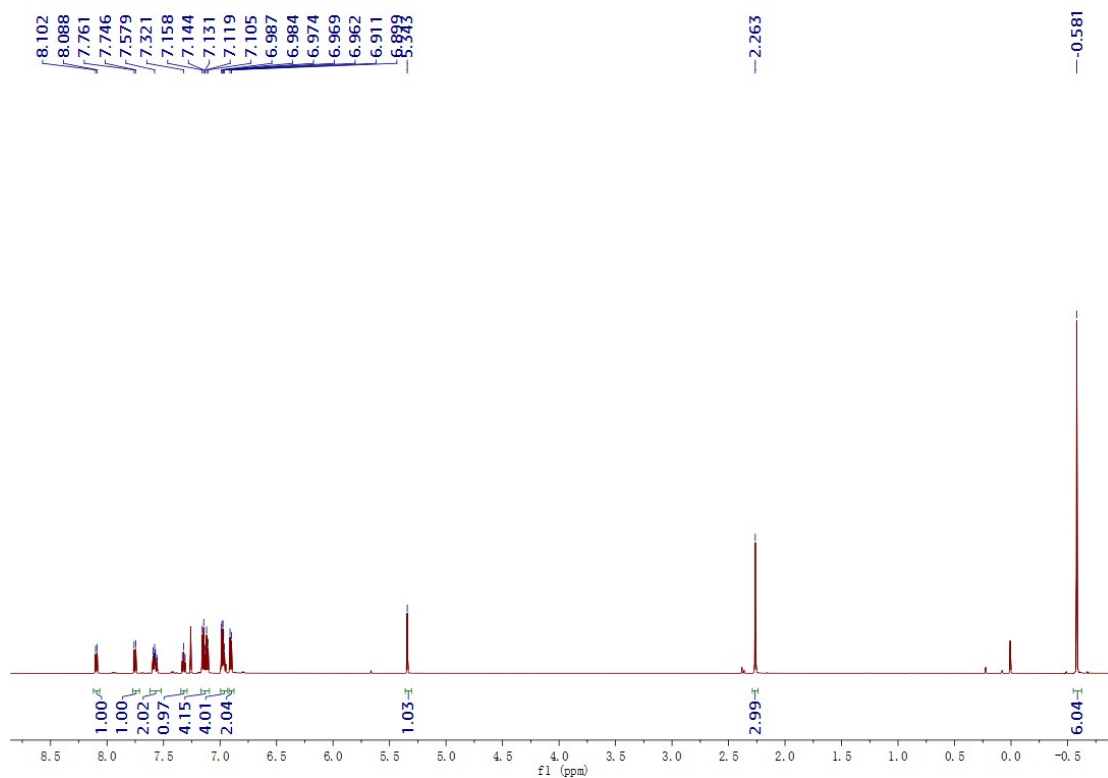
<sup>a</sup> *School of Chemistry and Chemical Engineering, Shanxi University, Taiyuan, 030006, China*

<sup>b</sup> *State Key Laboratory of Polymer Physics and Chemistry, Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, Changchun, 130022, China*

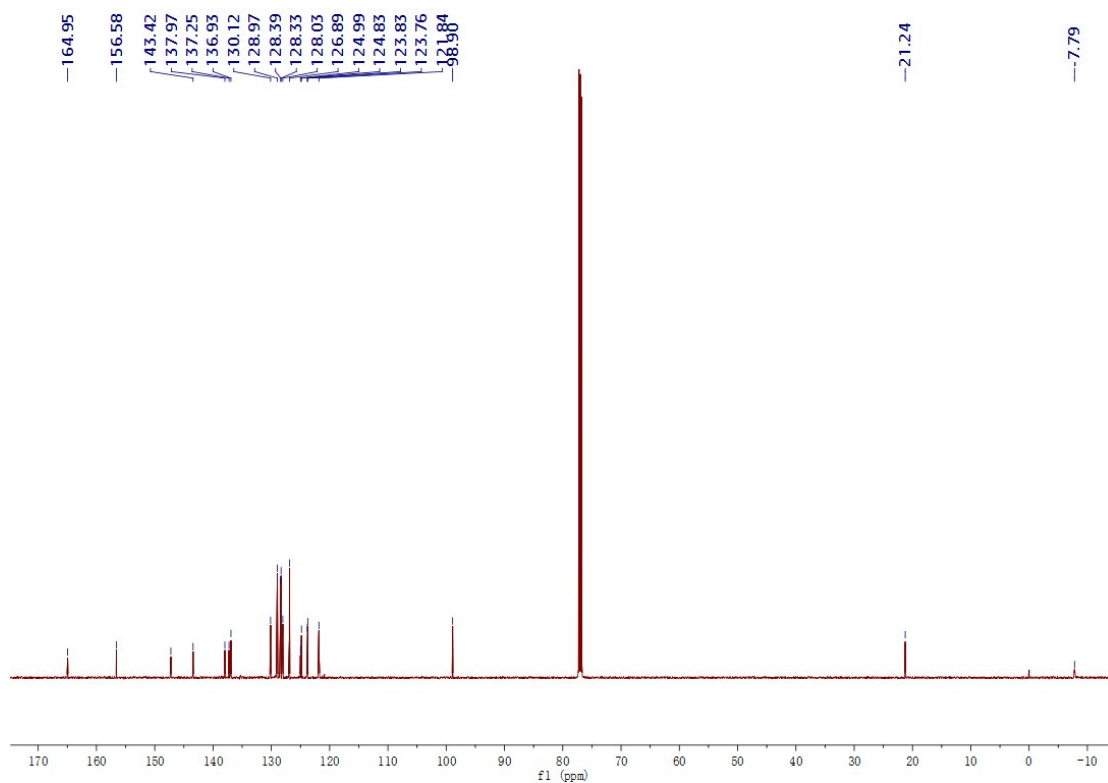
<sup>c</sup> *Scientific Instrument Center, Shanxi University, Taiyuan, 030006, China*

**Figure S1-S14  $^1\text{H}$  and  $^{13}\text{C}$  NMR spectra of all Al complexes.....2-8**

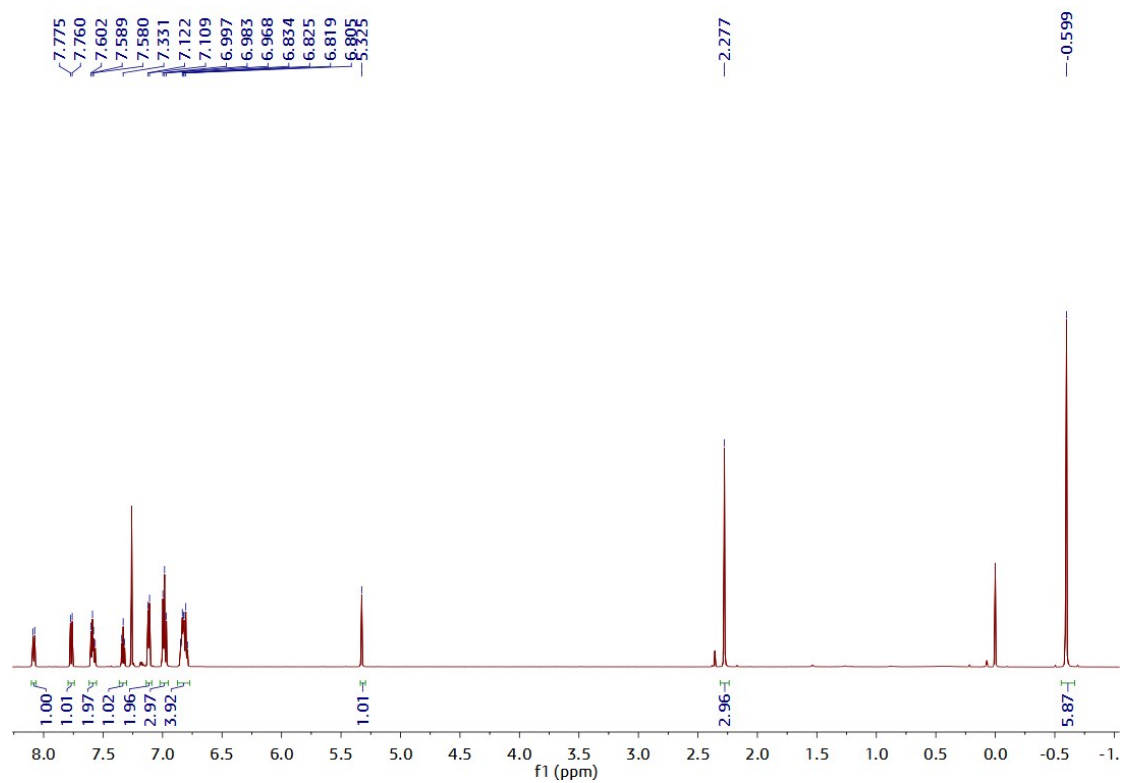
**Figure S15 The  $^1\text{H}$  NMR spectra of complexes 3 and 6 with BnOH in  $\text{C}_6\text{D}_6$ .....9**



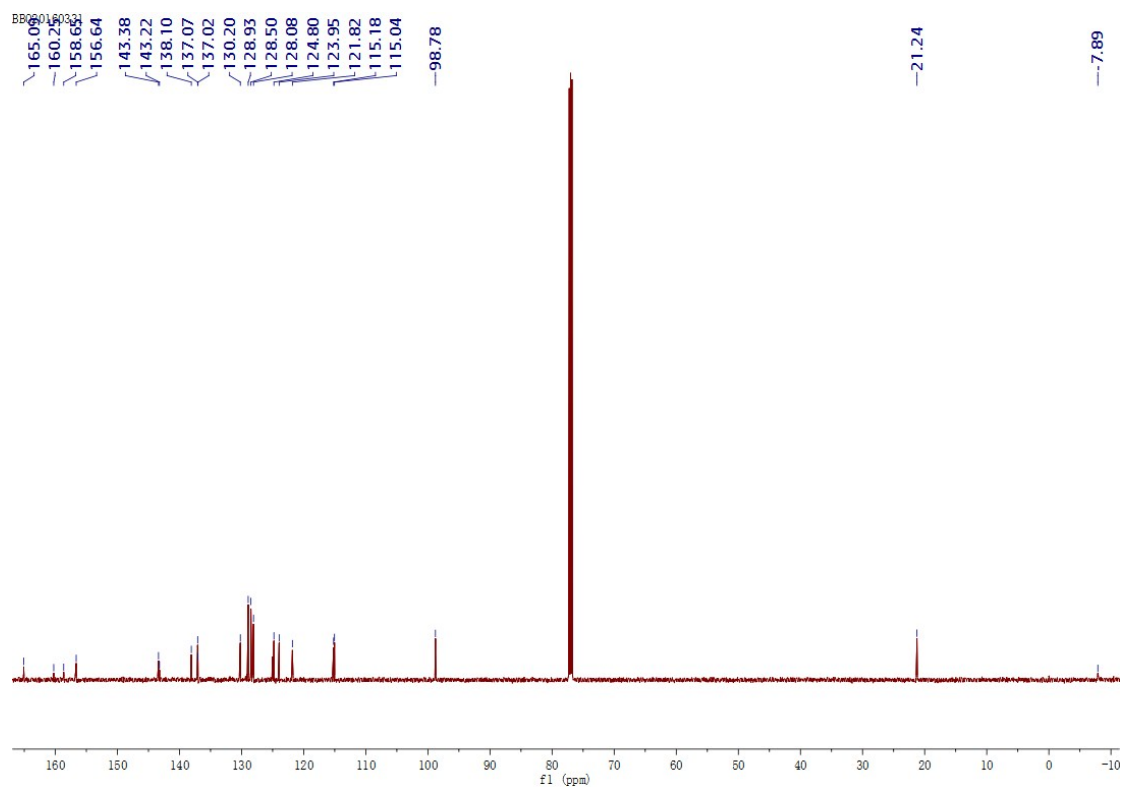
**Figure S1** <sup>1</sup>H NMR spectrum of complex **1** (600 MHz, CDCl<sub>3</sub>)



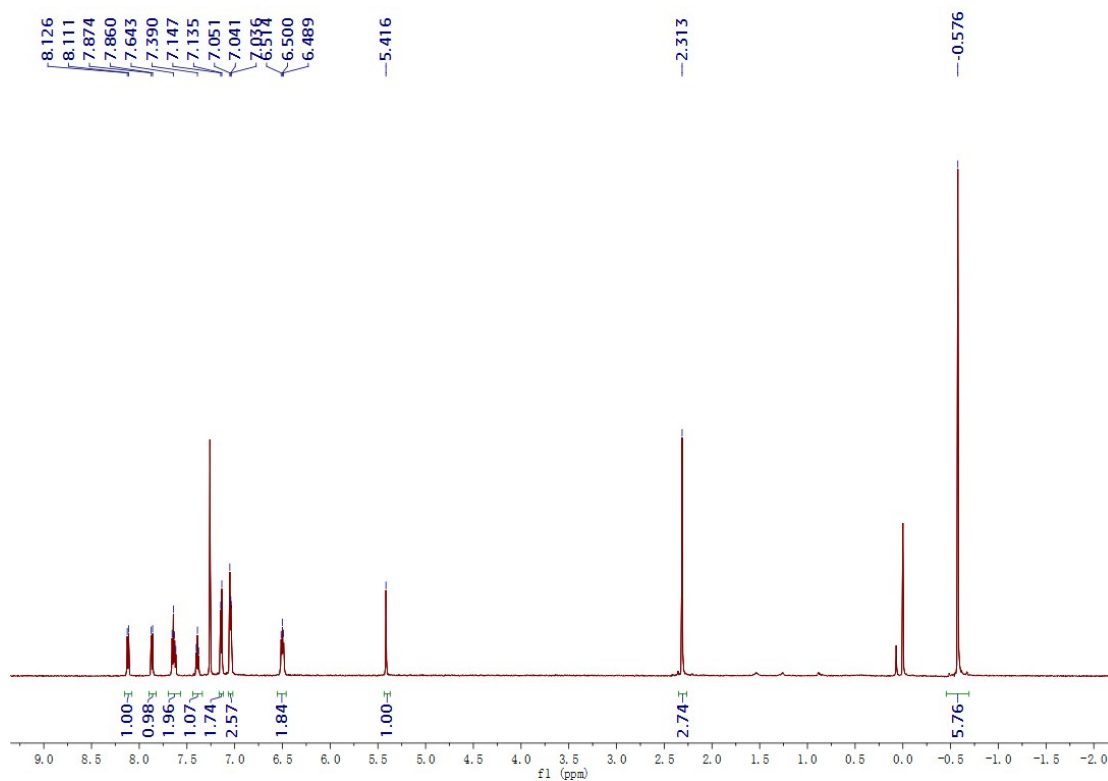
**Figure S2**  $^{13}\text{C}$  NMR spectrum of complex **1** (151 MHz,  $\text{CDCl}_3$ )



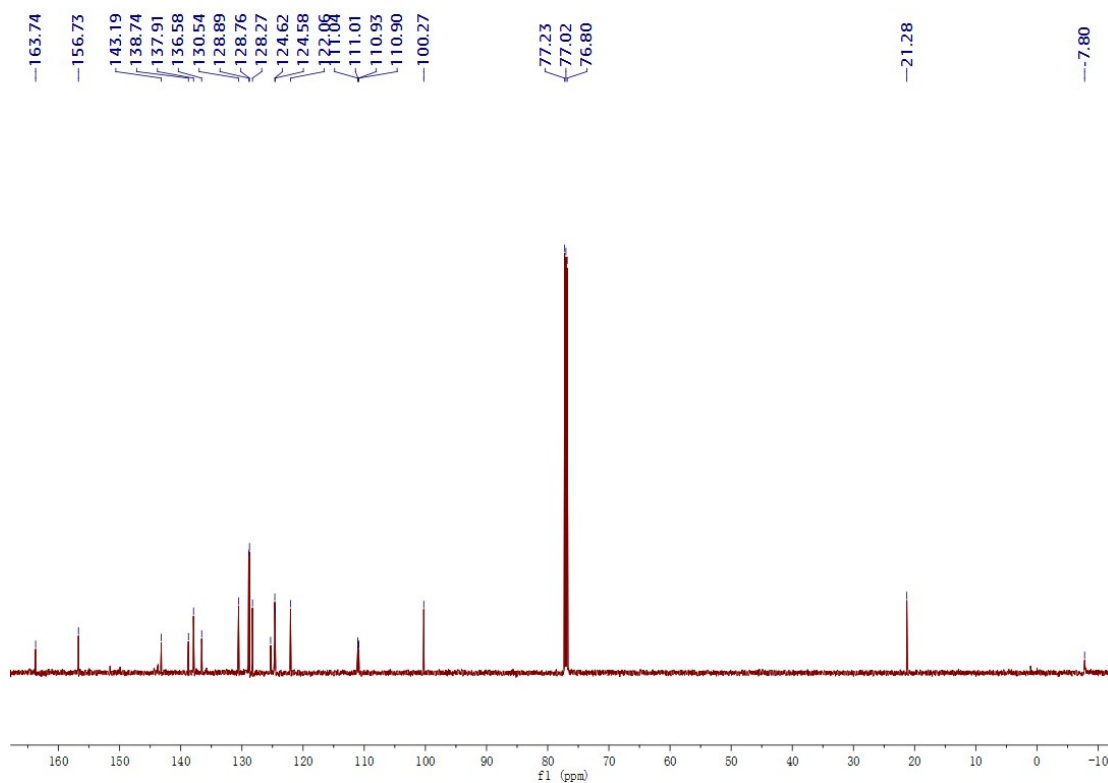
**Figure S3**  $^1\text{H}$  NMR spectrum of complex **2** (600 MHz,  $\text{CDCl}_3$ )



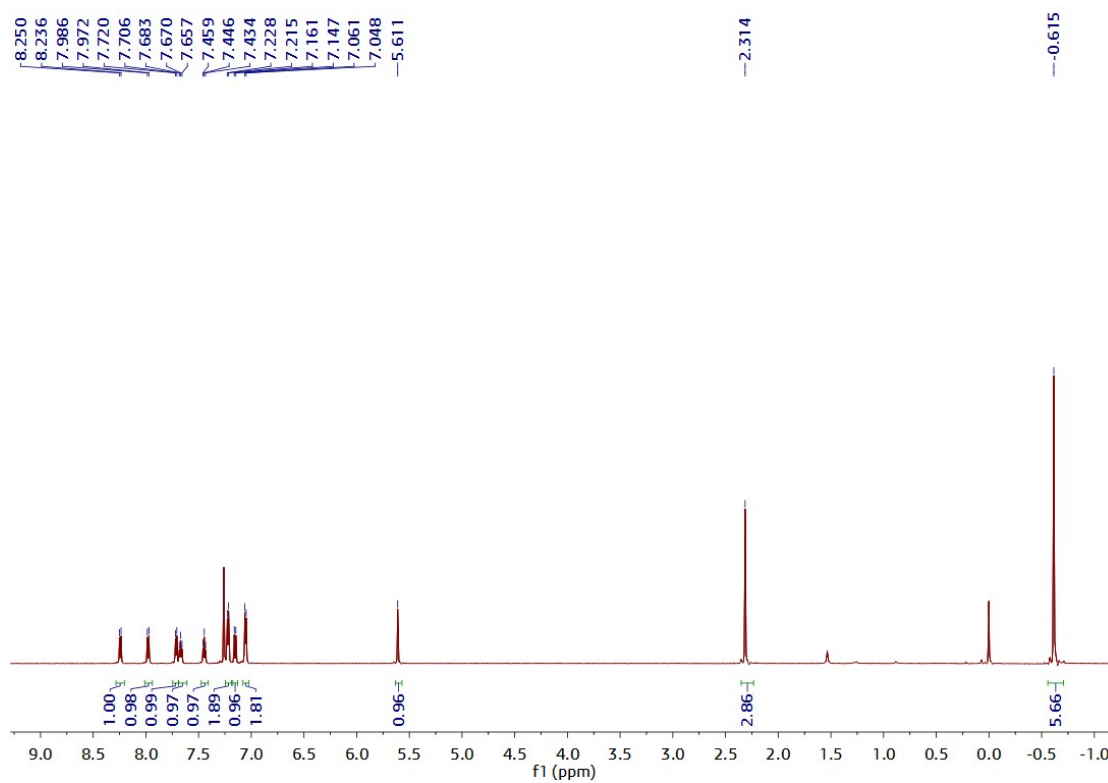
**Figure S4**  $^{13}\text{C}$  NMR spectrum of complex **2** (151 MHz,  $\text{CDCl}_3$ )



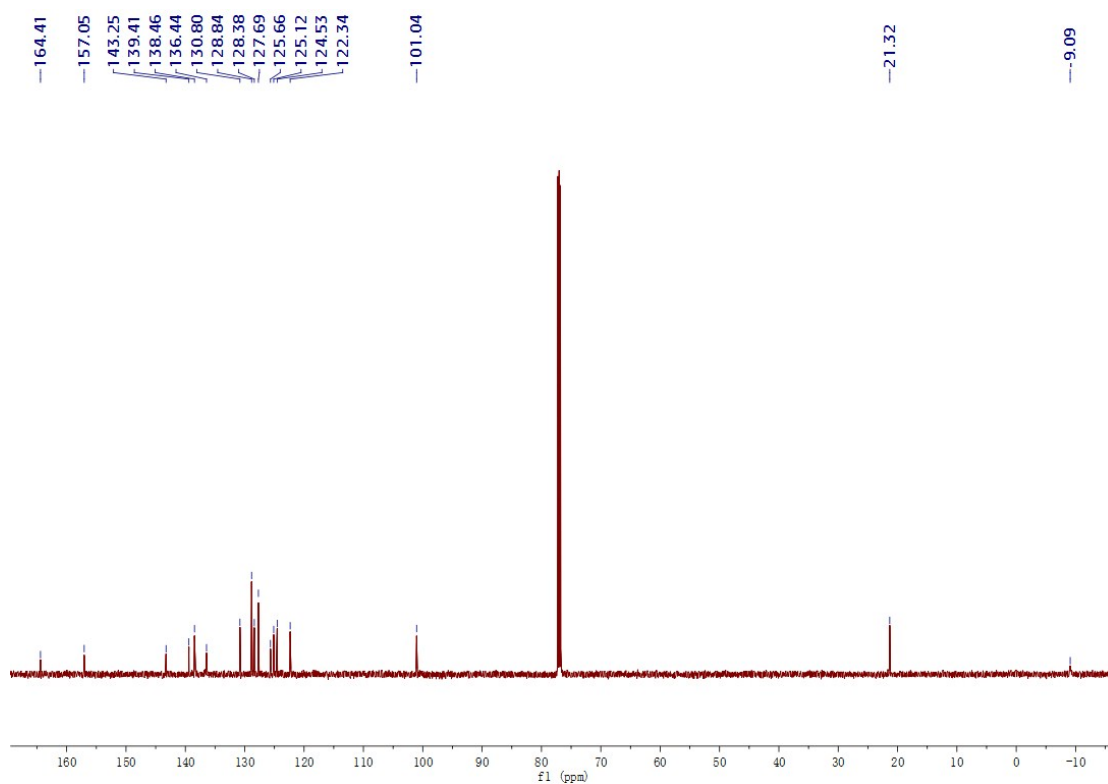
**Figure S5**  $^1\text{H}$  NMR spectrum of complex **3** (600 MHz,  $\text{CDCl}_3$ )



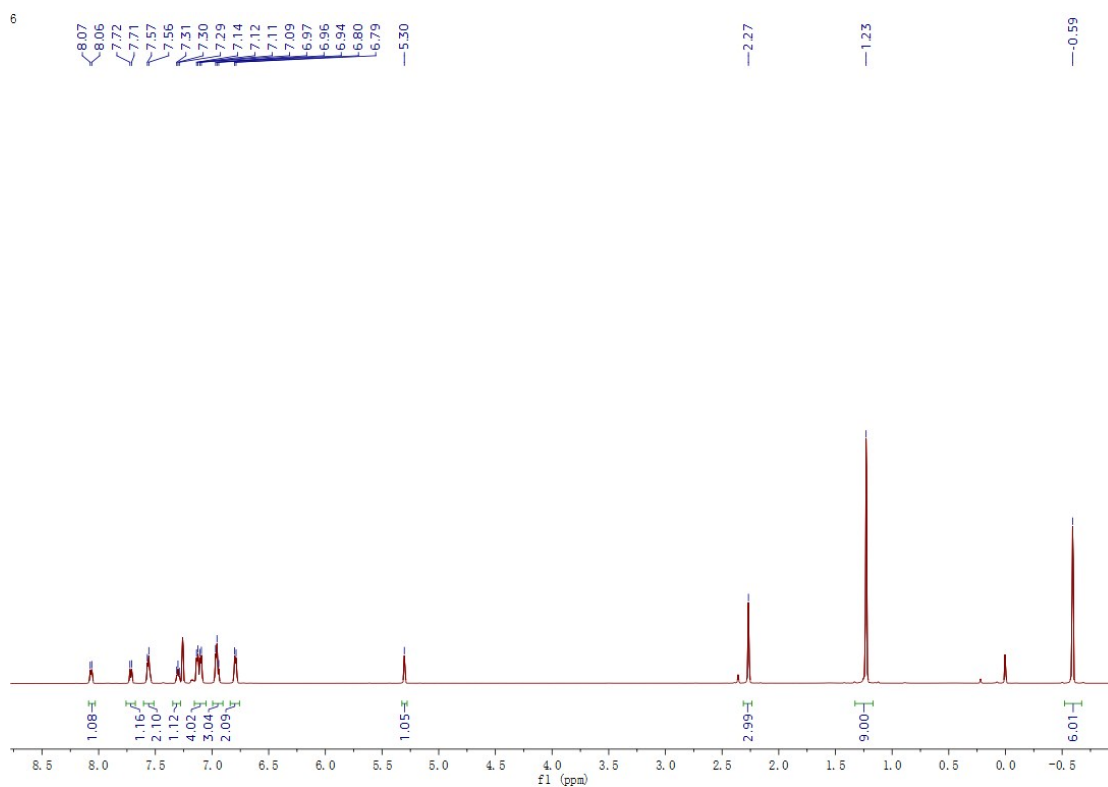
**Figure S6**  $^{13}\text{C}$  NMR spectrum of complex **3** (151 MHz,  $\text{CDCl}_3$ )



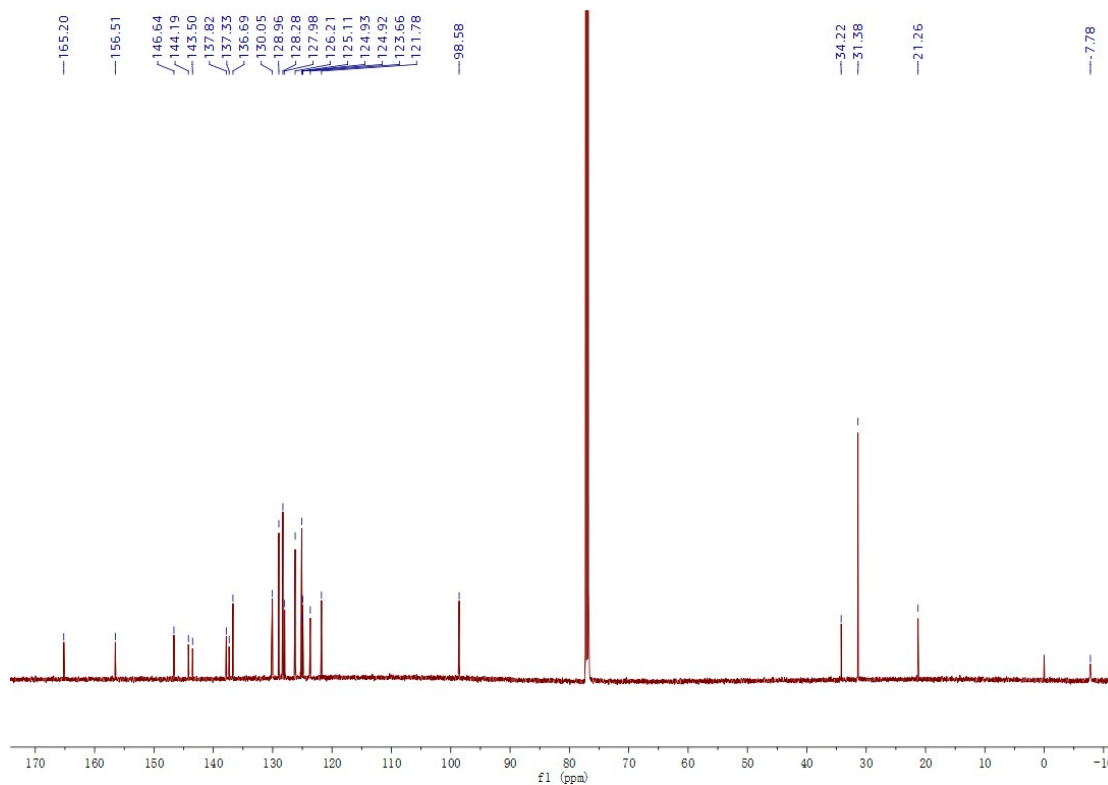
**Figure S7**  $^{13}\text{C}$  NMR spectrum of complex **4** (600 MHz,  $\text{CDCl}_3$ )



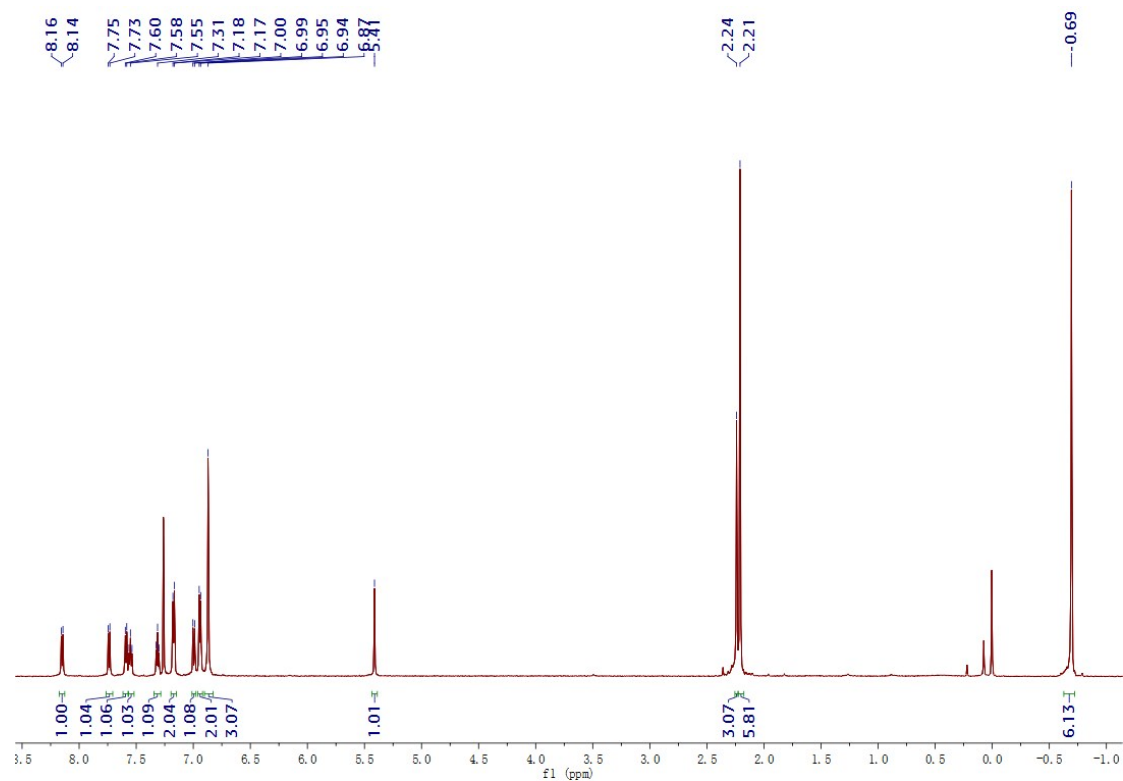
**Figure S8**  $^{13}\text{C}$  NMR spectrum of complex **4** (151 MHz,  $\text{CDCl}_3$ )



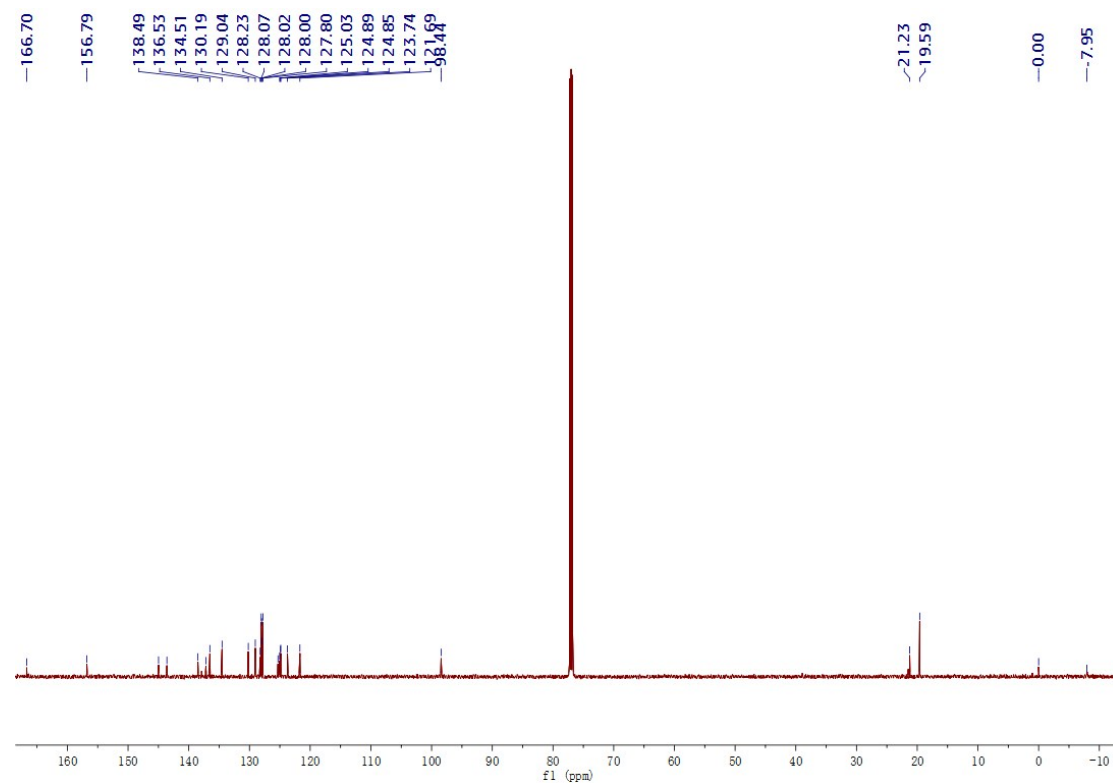
**Figure S9**  $^1\text{H}$  NMR spectrum of complex **5** (600 MHz,  $\text{CDCl}_3$ )



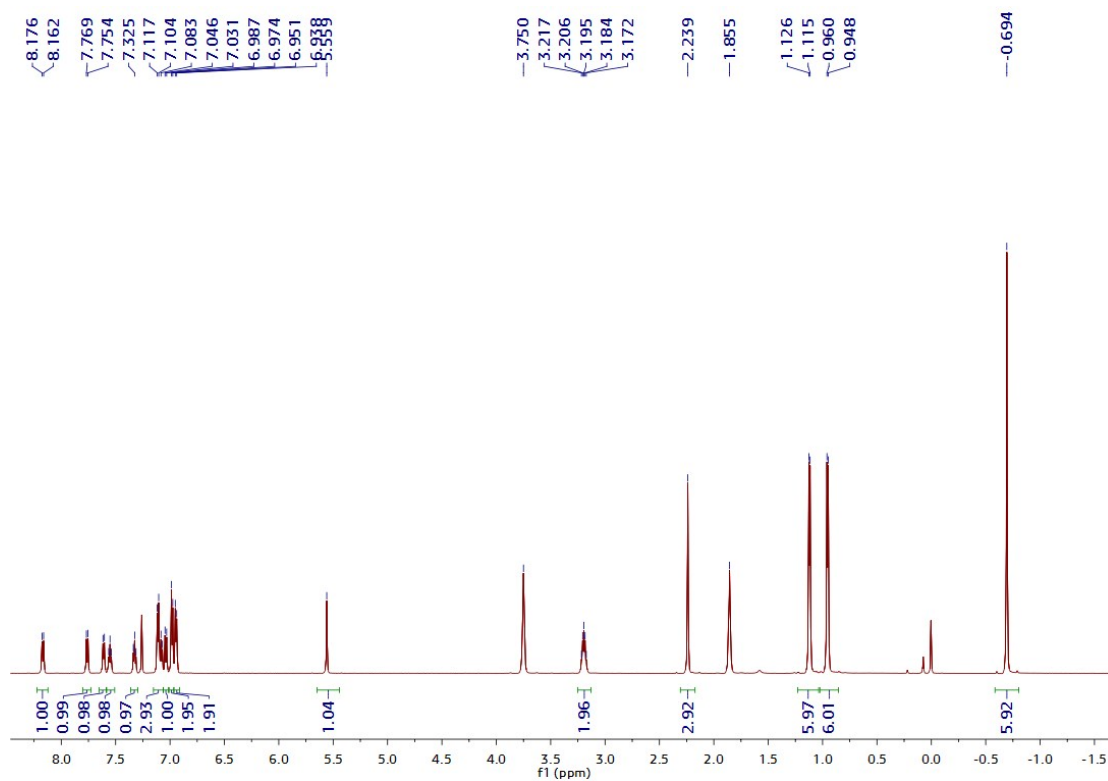
**Figure S10**  $^{13}\text{C}$  NMR spectrum of complex **5** (151 MHz,  $\text{CDCl}_3$ )



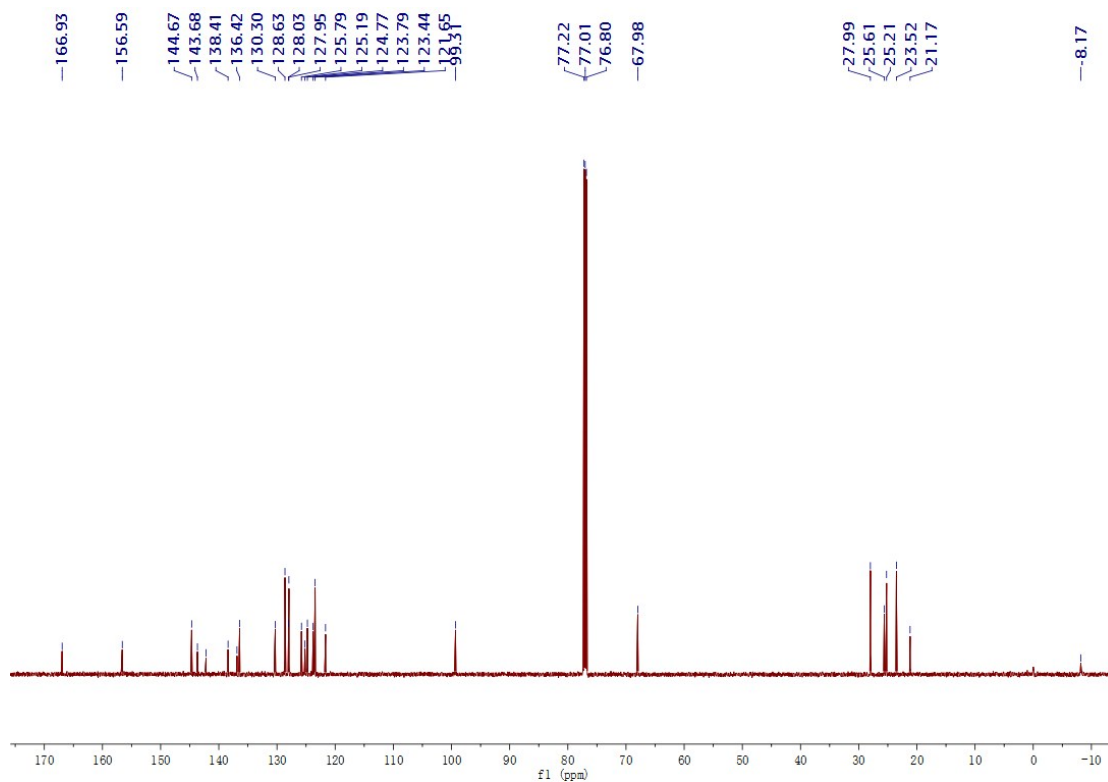
**Figure S11**  $^1\text{H}$  NMR spectrum of complex **6** (600 MHz,  $\text{CDCl}_3$ )



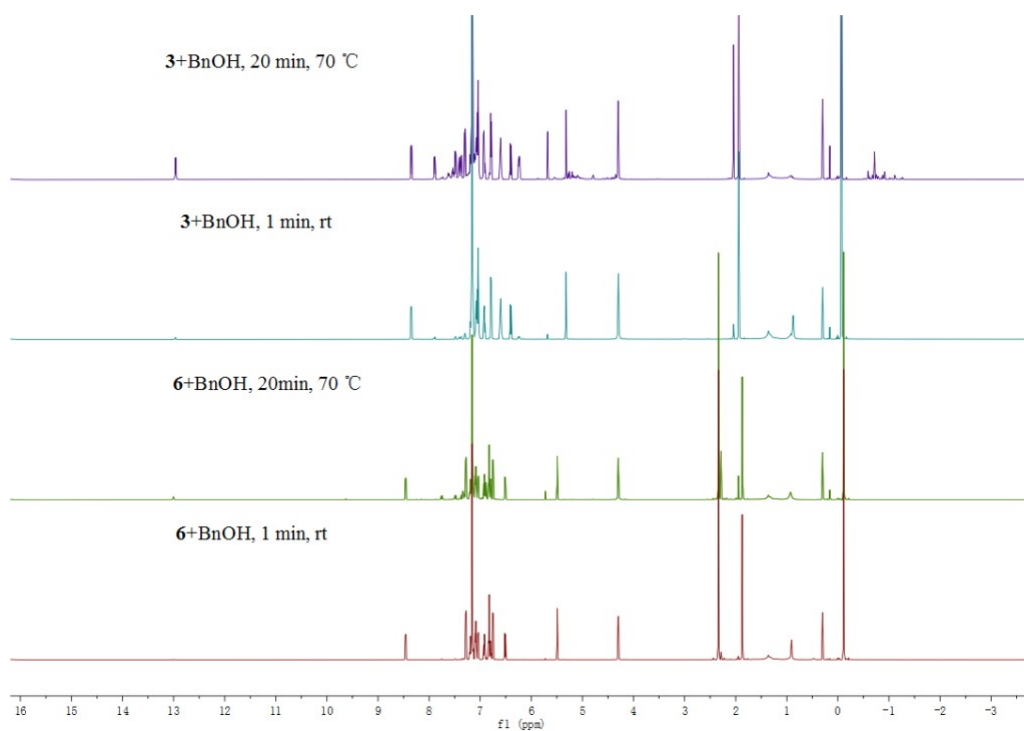
**Figure S12**  $^{13}\text{C}$  NMR spectrum of complex **6** (151 MHz,  $\text{CDCl}_3$ )



**Figure S13**  $^1\text{H}$  NMR spectrum of complex **7** (600 MHz,  $\text{CDCl}_3$ )



**Figure S14**  $^{13}\text{C}$  NMR spectrum of complex **7** (151 MHz,  $\text{CDCl}_3$ )



**Fig. S15** The  $^1\text{H}$  NMR spectra of complexes **3** and **6** with BnOH in  $\text{C}_6\text{D}_6$