Electronic Supplementary Material (ESI) for New Journal of Chemistry.

Supporting Information

Half-sandwich scandium dibenzyl complexes bearing penta- or tetra-arylcyclopentadienyl ligands: Synthesis, structure and syndiospecific styrene polymerization activity

Yang Wang,[a][b] and Jianhua Cheng*[a][b]

DOI: 10.1002/anie.2016XXXXX

[a] State Key Laboratory of Polymer Physics and Chemistry
Changchun Institute of Applied Chemistry
Chinese Academy of Sciences
No. 5625, Renmin Street, Changchun 130022 (China)
E-mail: jhcheng@ciac.ac.cn
[b] University of Science and Technology of China
Hefei, Anhui 230029 (China)

Contents **Page**

1. Selected NMR spectra

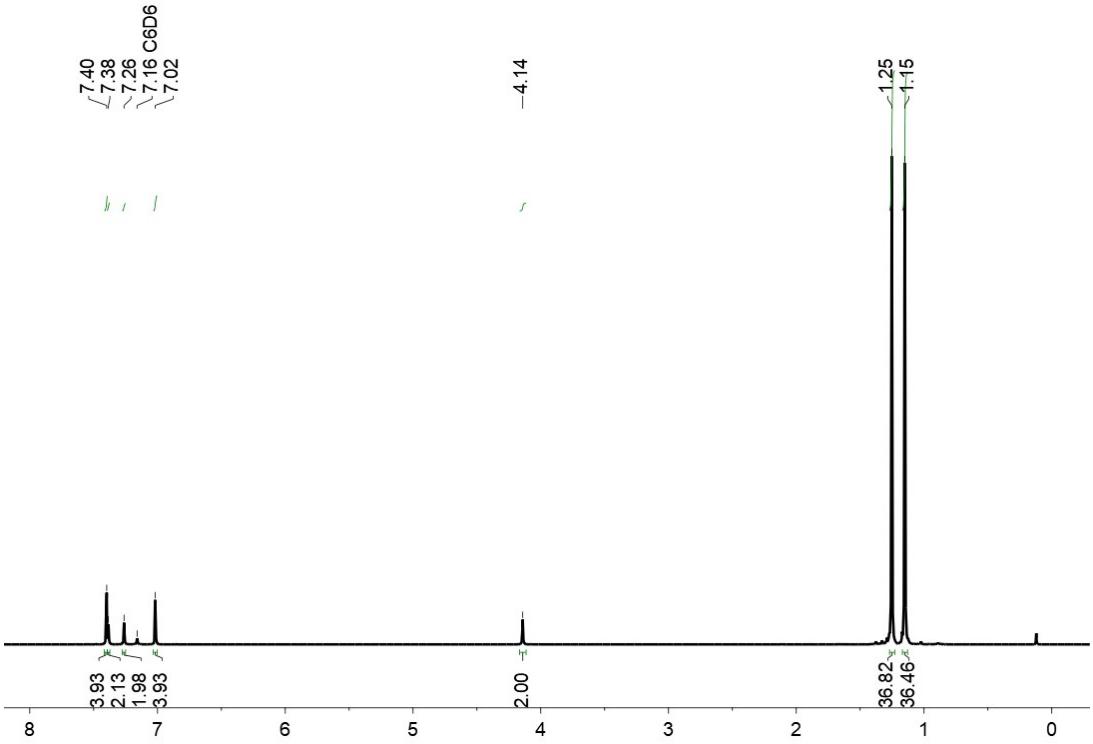

Figure S1. ^{1}H NMR spectrum (500 MHz) of **L_3** in C_6D_6 at 25 ^{o}C.

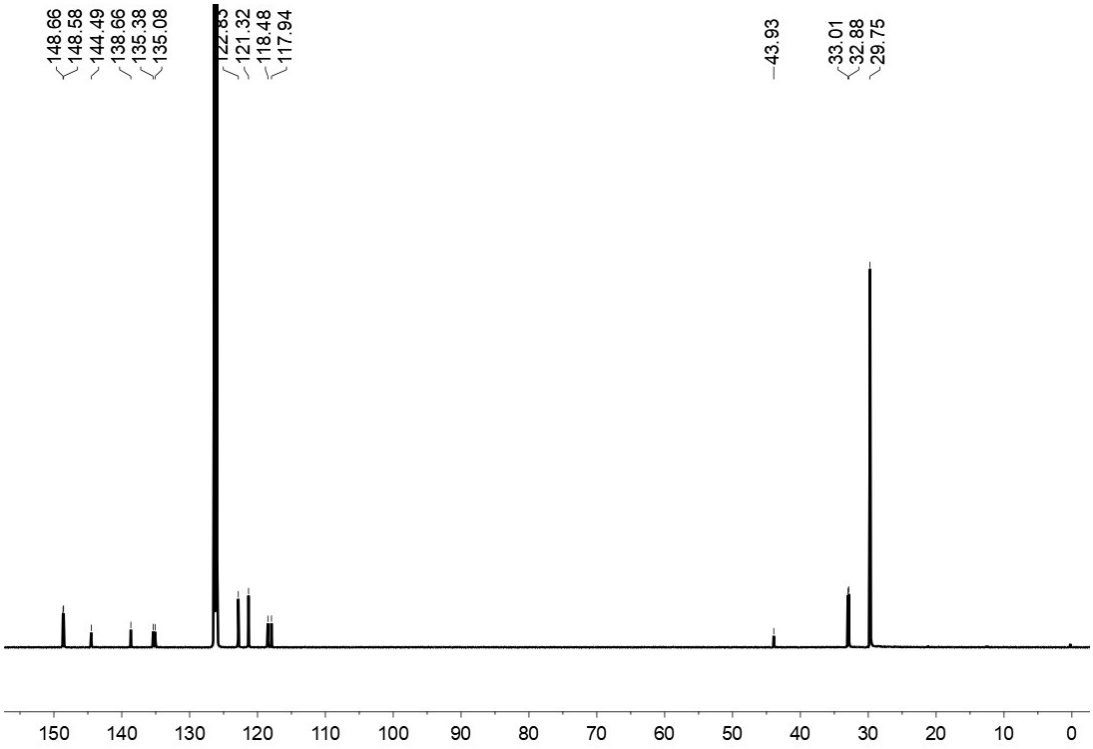

Figure S2. ^{13}C {^{1}H} NMR spectrum (126 MHz) of **L_3** in C_6D_6 at 25 ^{o}C.

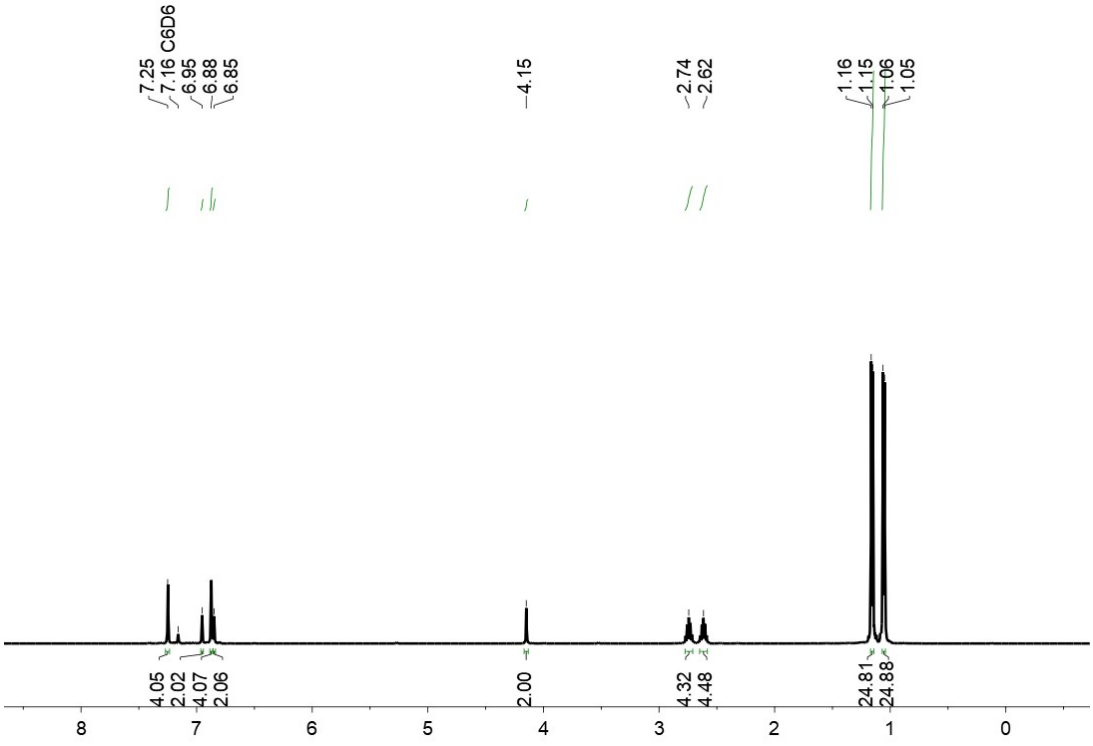

Figure S3. ^{1}H NMR spectrum (500 MHz) of **L_4** in C_6D_6 at 25 ^{o}C.

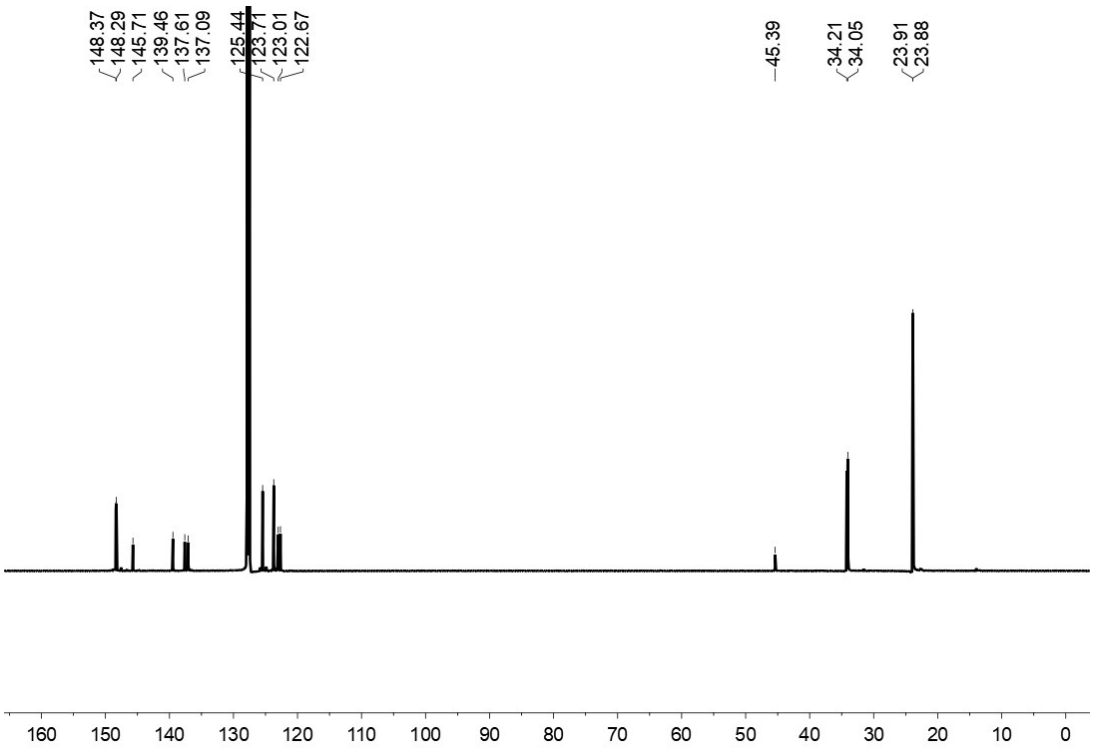

Figure S4. ^{13}C {^{1}H} NMR spectrum (126 MHz) of **L_4** in C_6D_6 at 25 ^{o}C.

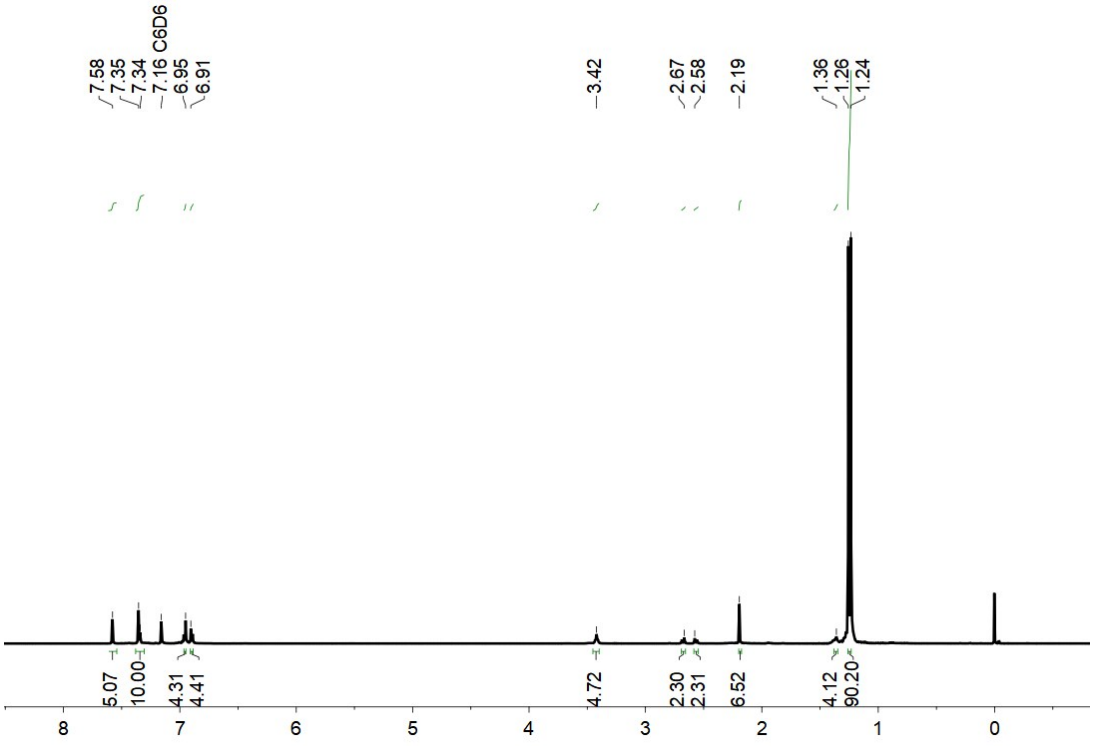

Figure S5. ^{1}H NMR spectrum (500 MHz) of complex **1** in C_6D_6 at 25 ^{o}C.

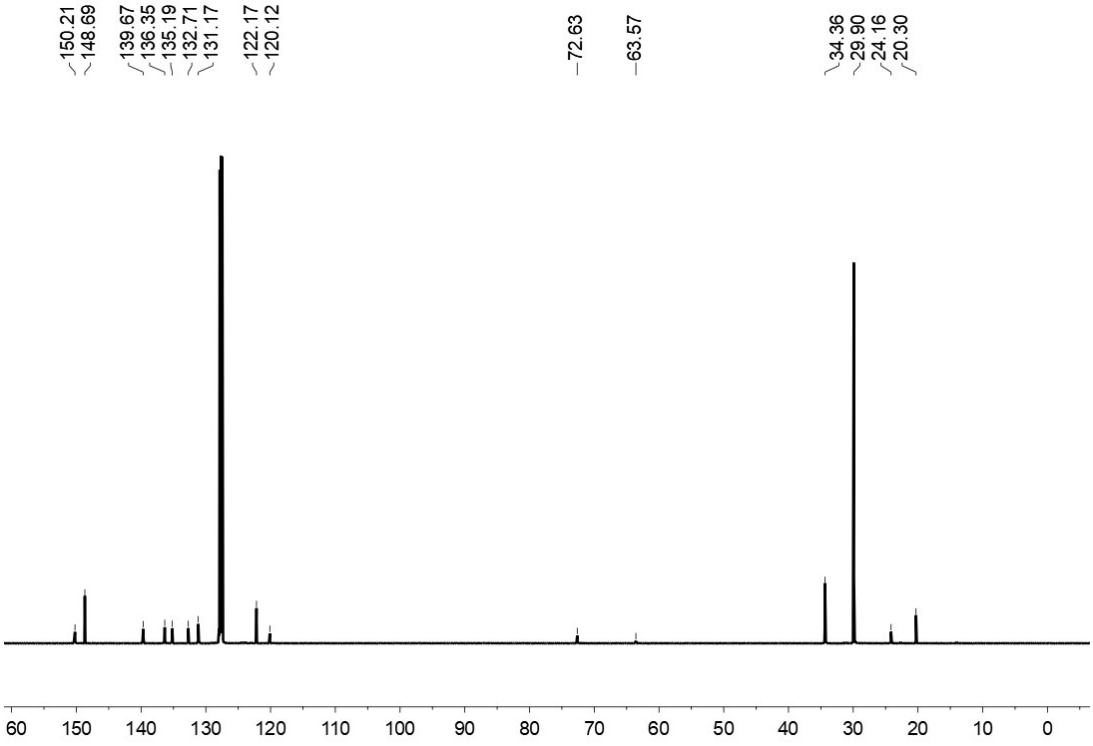

Figure S6. ^{13}C {^{1}H} NMR spectrum (126 MHz) of complex **1** in C_6D_6 at 25 ^{o}C.

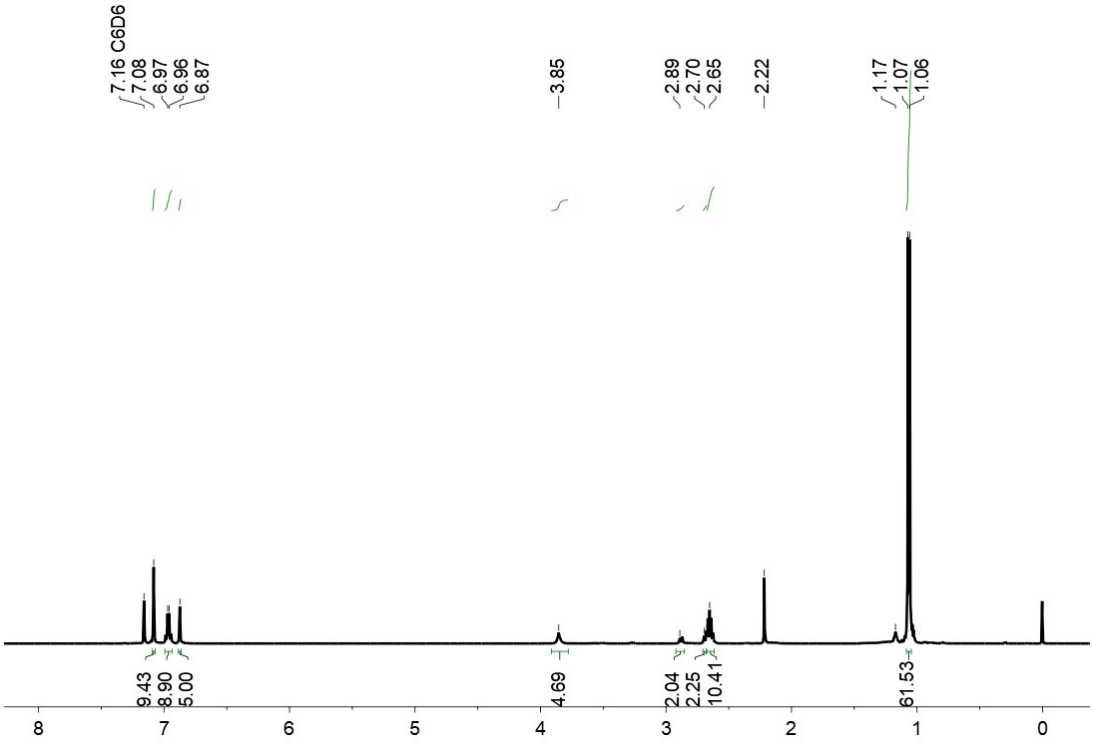

Figure S7. ^{1}H NMR spectrum (500 MHz) of complex **2** in C_6D_6 at 25 ^{o}C.

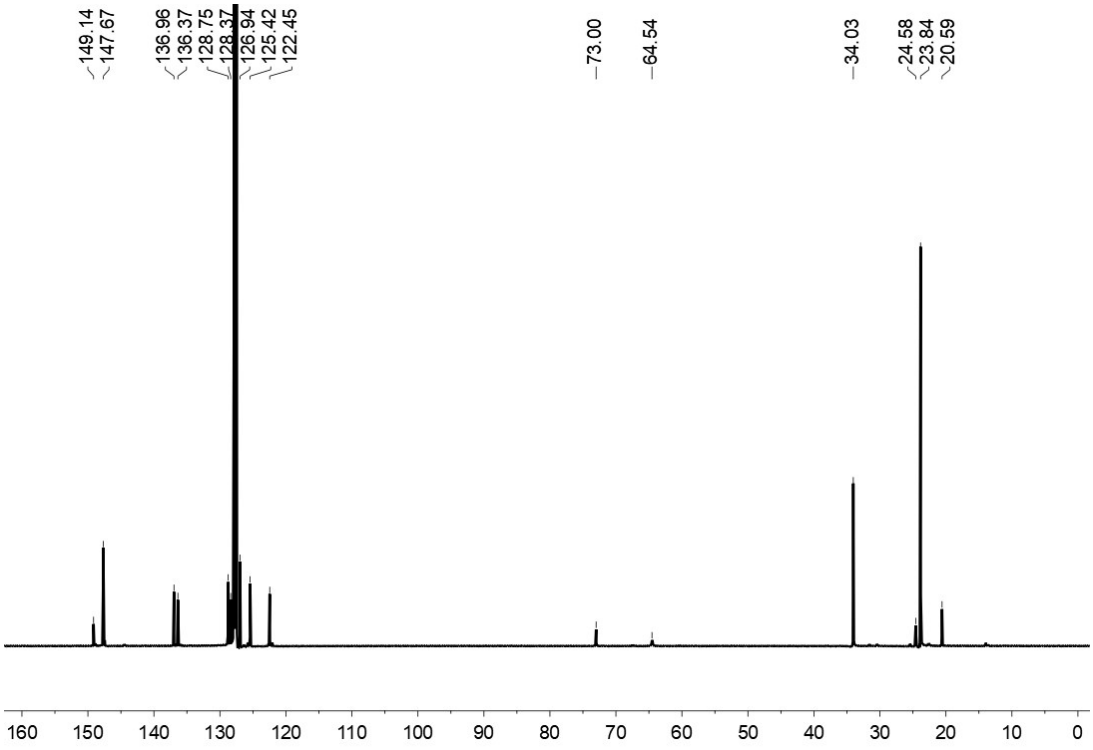

Figure S8. ^{13}C {^{1}H} NMR spectrum (126 MHz) of complex **2** in C_6D_6 at 25 ^{o}C.

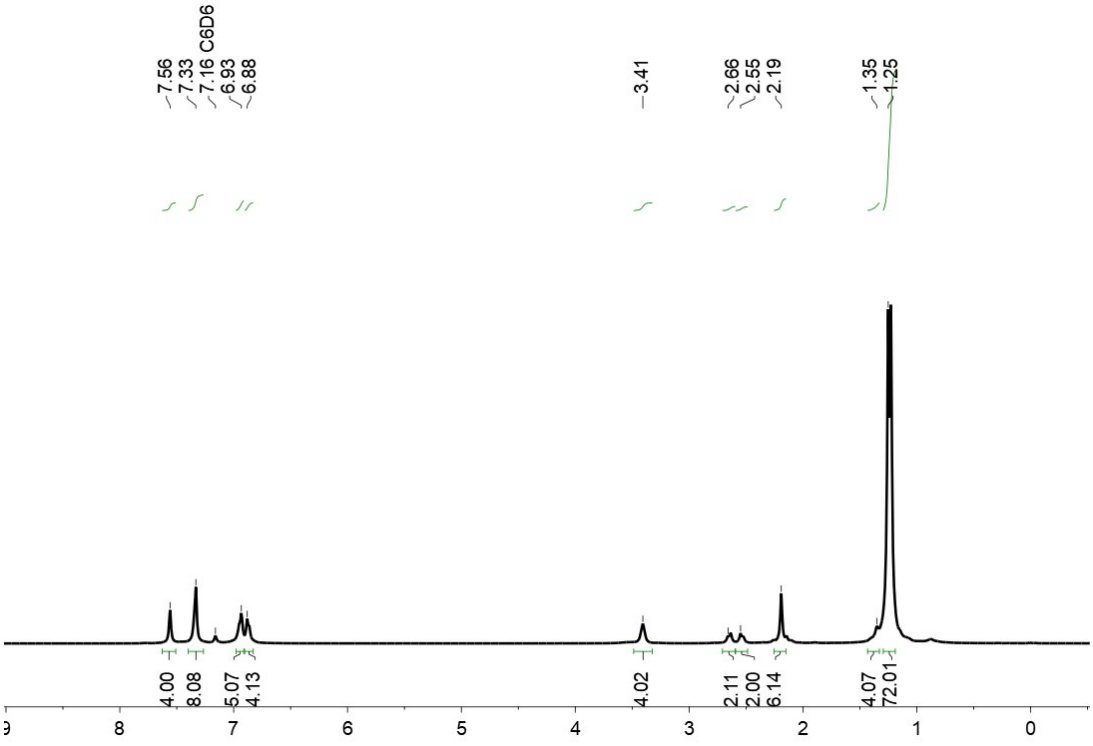

Figure S9. ^{1}H NMR spectrum (500 MHz) of complex **3** in C_6D_6 at 25 ^{o}C.

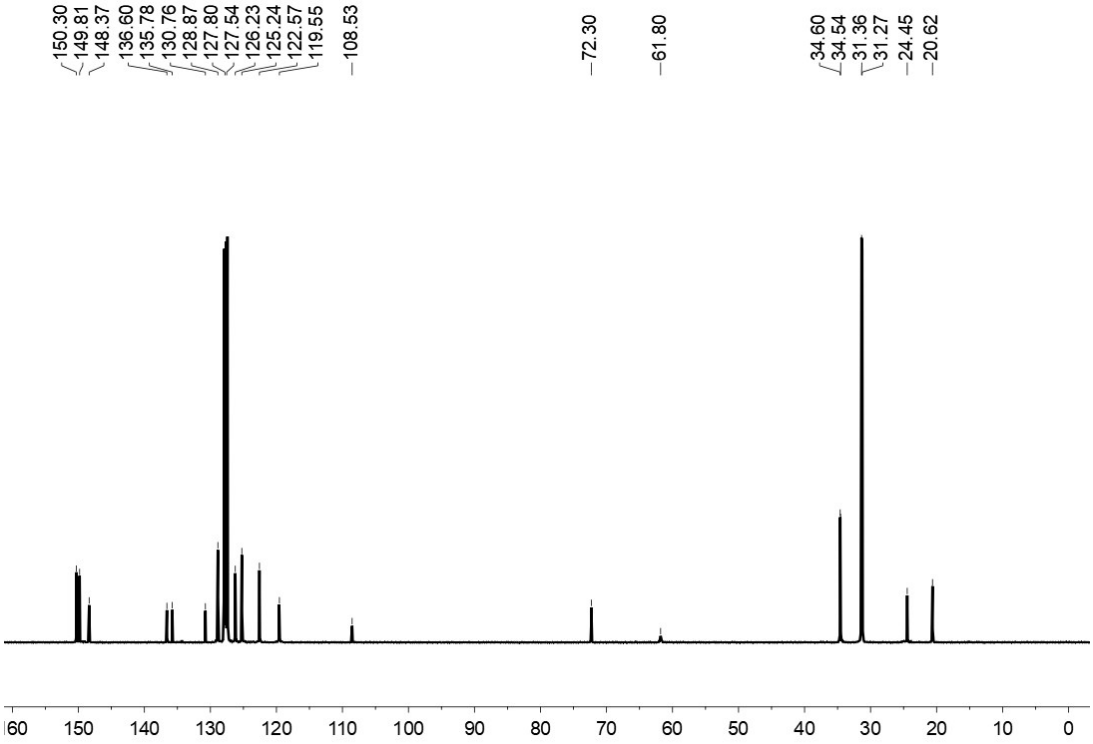

Figure S10. ^{13}C {^{1}H} NMR spectrum (126 MHz) of complex **3** in C_6D_6 at 25 ^{o}C.

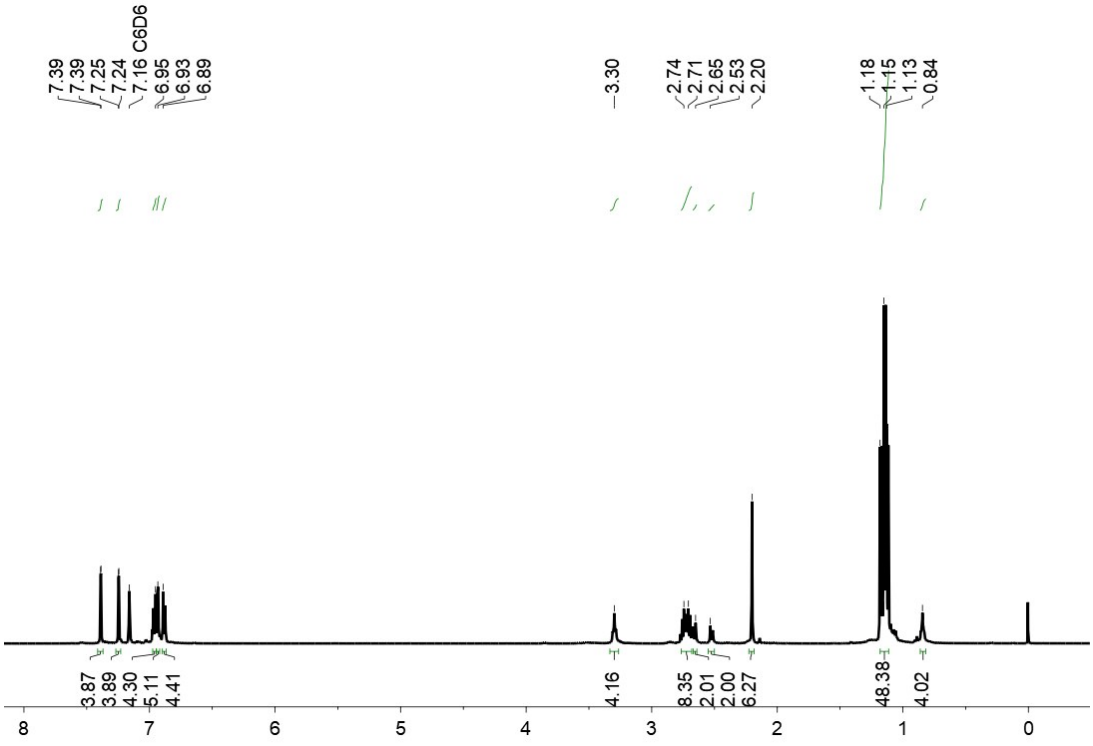

Figure S11. ^{1}H NMR spectrum (500 MHz) of complex **4** in C_6D_6 at 25 ^{o}C.

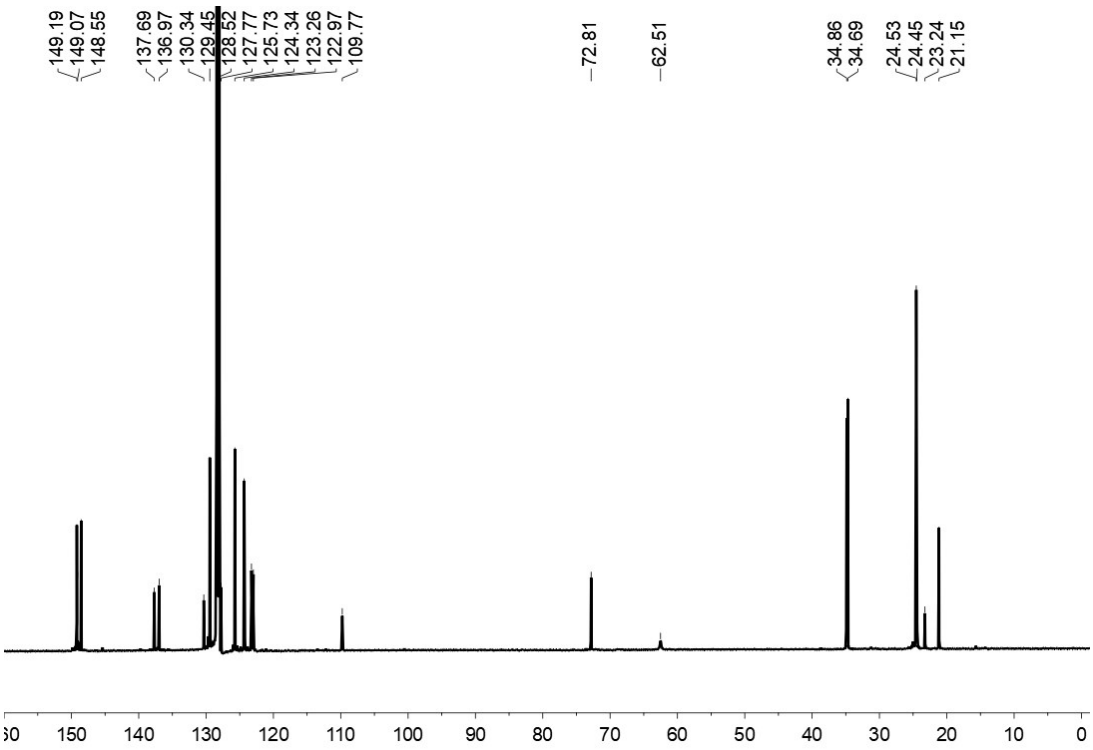

Figure S12. ^{13}C {^{1}H} NMR spectrum (126 MHz) of complex **4** in C_6D_6 at 25 ^{o}C.

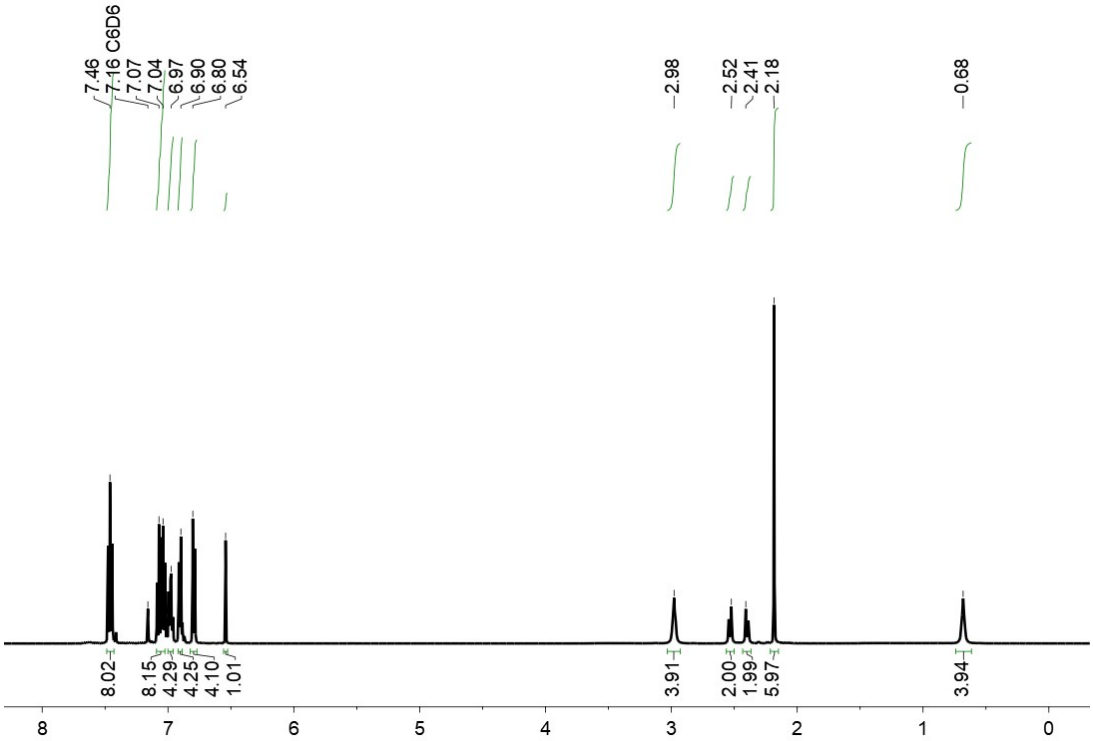

Figure S13. ^{1}H NMR spectrum (500 MHz) of complex **5** in C_6D_6 at 25 ^{o}C.

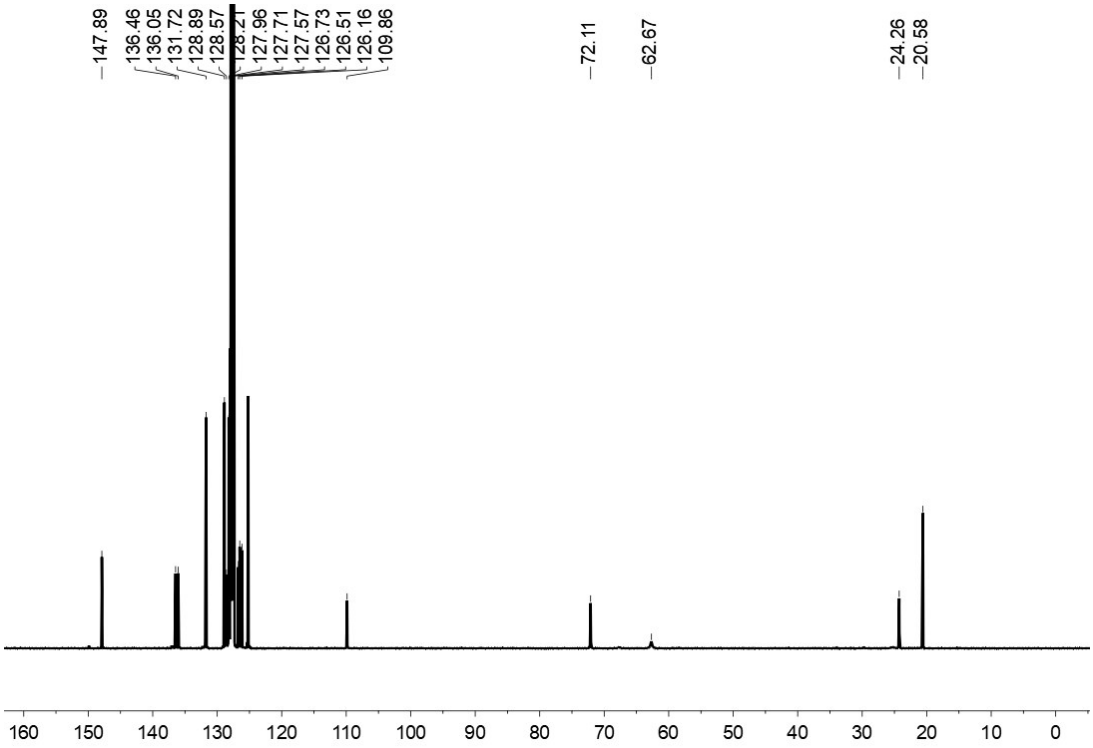

Figure S14. ^{13}C {^{1}H} NMR spectrum (126 MHz) of complex **5** in C_6D_6 at 25 ^{o}C.

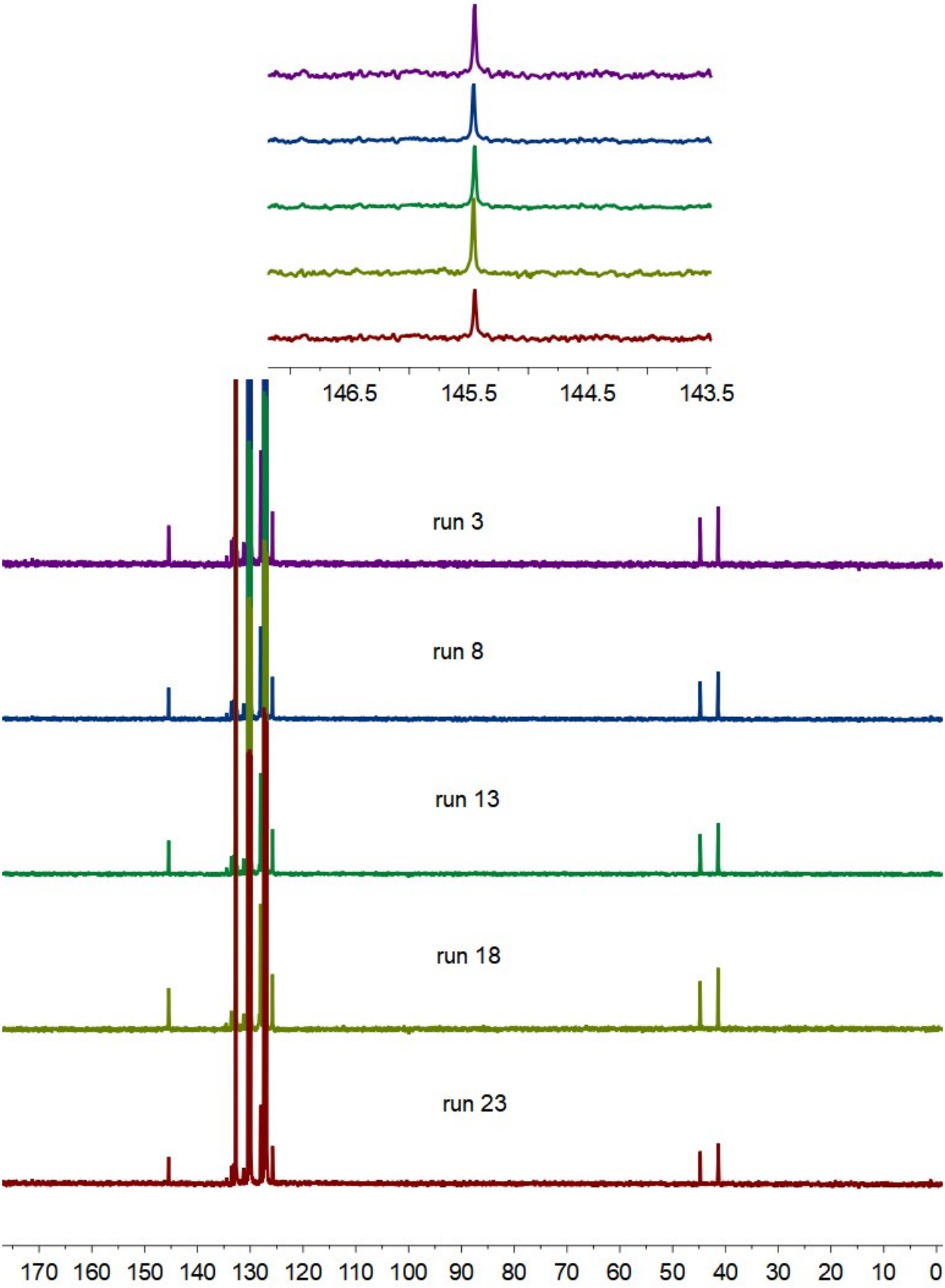

Figure S15. ^{13}C {^{1}H} NMR spectrum of *s*Ps in $C_6D_4Cl_2$ (rrrr >99%) at 100°C, obtained with complexes **1**-**5** (run 3, 8, 13, 18, 23 in Table 1).

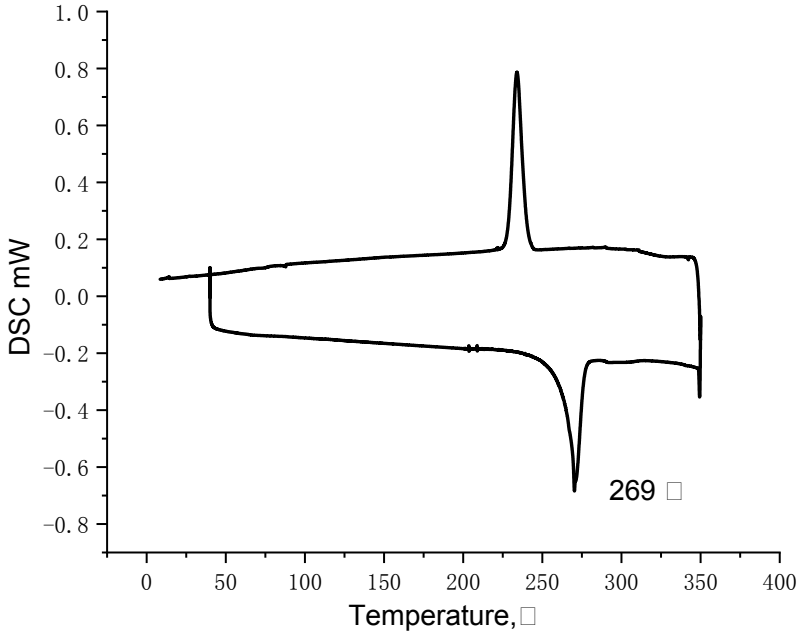

Figure S16. DSC curve of *s*PS (run 3 in Table 2).

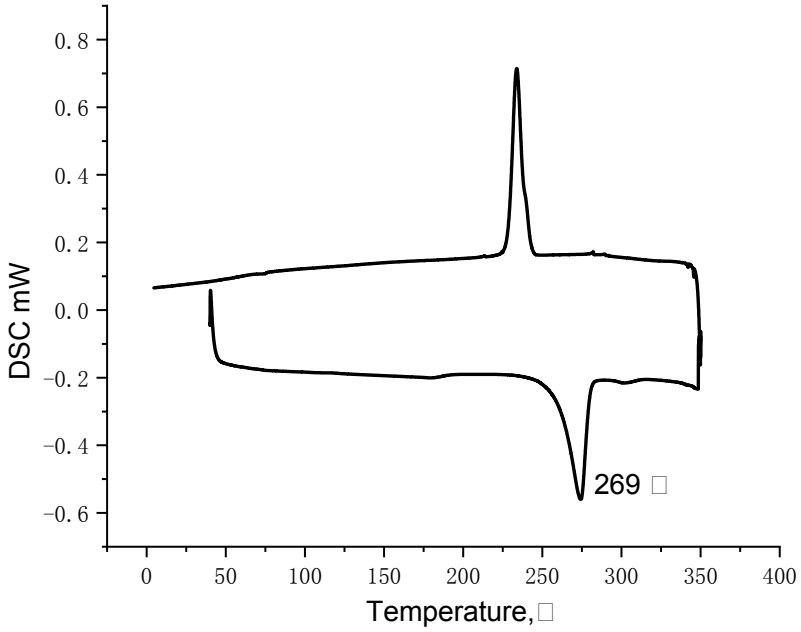

Figure S17. DSC curve of *s*PS (run 8 in Table 2).

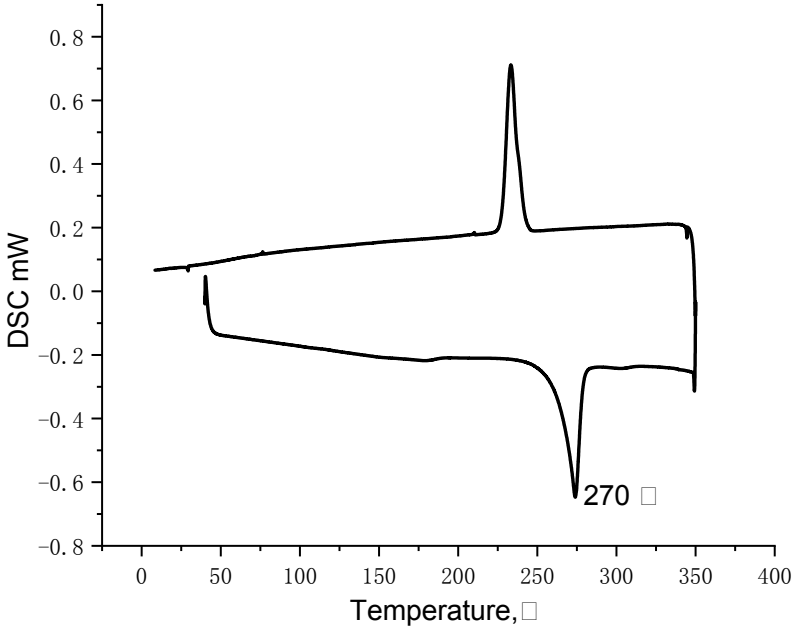

Figure S18. DSC curve of *s*PS (run 13 in Table 2).

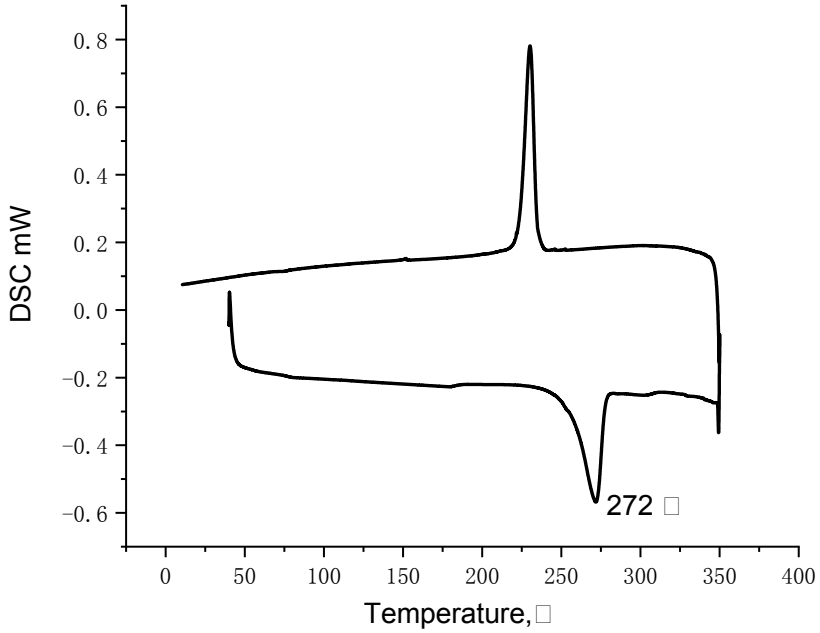

Figure S19. DSC curve of *s*PS (run 18 in Table 2).

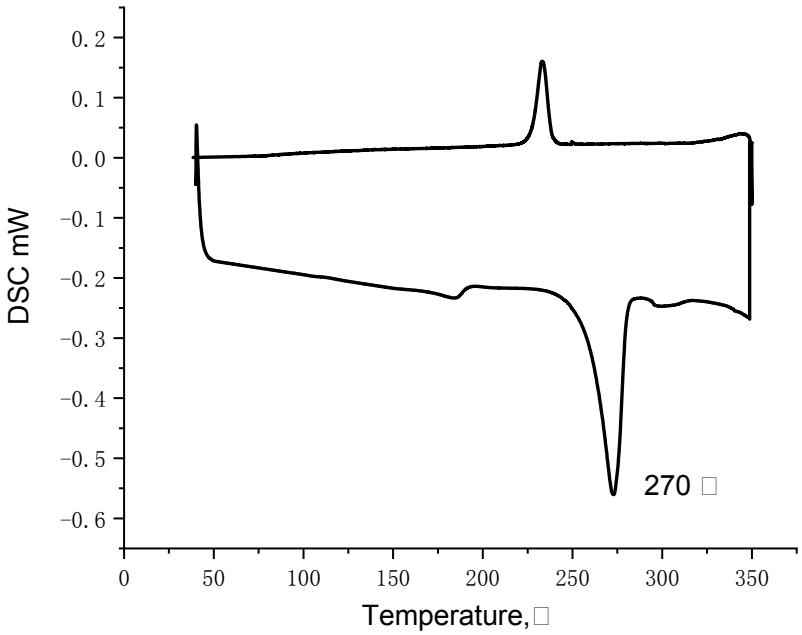

Figure S20. DSC curve of *s*PS (run 23 in Table 2).