

Supporting information

Integrated Synthesis of Metallocene@Support Catalysts Based on Glyphosate and its Zirconium Derivatives

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1, Solid-state ^{31}P MAS NMR to $\text{Cp}_2\text{Zr@Gly}$

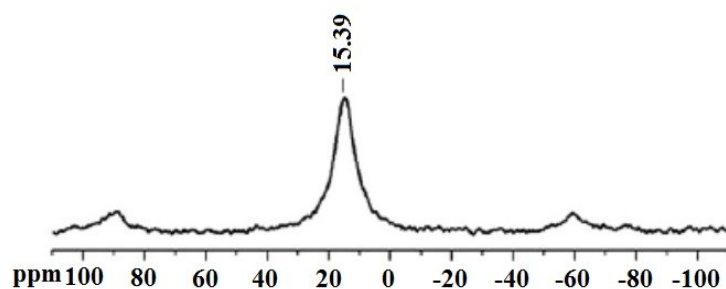


Fig. S1 Solid-state ^{31}P MAS NMR to $\text{Cp}_2\text{Zr@Gly}$

Solid-state ^{31}P MAS NMR to $\text{Cp}_2\text{Zr@Gly}$ is shown in Fig. S1. The shift of P in $\text{Cp}_2\text{Zr@Gly}$ is at about 15.39.

2, FT-IR Analysis to $\text{Cp}_2\text{ZrCl}_2@\text{SiO}_2$

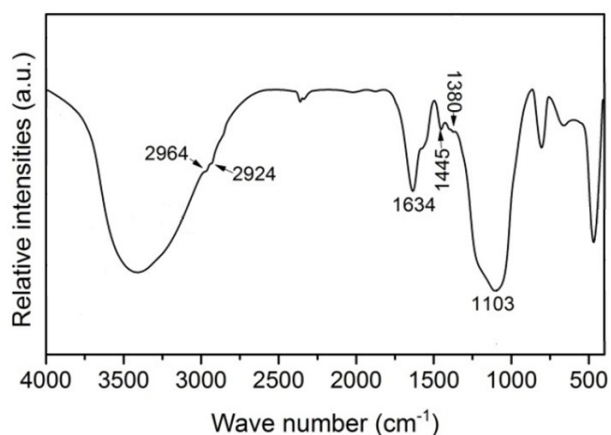


Fig. S2 FT-IR spectrum of $\text{Cp}_2\text{ZrCl}_2@\text{SiO}_2$

FT-IR spectrum of $\text{Cp}_2\text{ZrCl}_2@\text{SiO}_2$ is shown in Fig. S2. The weak peaks at 3700-3300 cm^{-1} are assigned as structurally inaccessible hydrogen-bonded OH groups. The adsorptions, at about 2964, 2924, and 1634 cm^{-1} , corresponding to stretching and bending modes of the cyclopentadienyl ligands are all found in the spectrum. The adsorption coming from the Si-O-Si mode of silica itself is observed at 1103 cm^{-1} . The result indicates that the adsorption of Cp_2ZrCl_2 on surface of silica gel is successful.

3. UV/VIS Analysis to $\text{Cp}_2\text{ZrCl}_2@\text{SiO}_2$

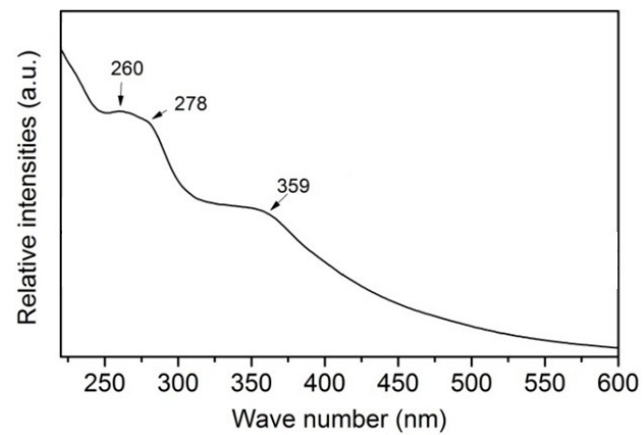


Fig. S3 UV/Vis spectra of $\text{Cp}_2\text{ZrCl}_2@\text{SiO}_2$

Fig. S3 presents UV/Vis spectrum of $\text{Cp}_2\text{ZrCl}_2@\text{SiO}_2$. The absorption from Cp_2ZrCl_2 is found at 278 nm, proving the adsorption of Cp_2ZrCl_2 on surface of silica gel.