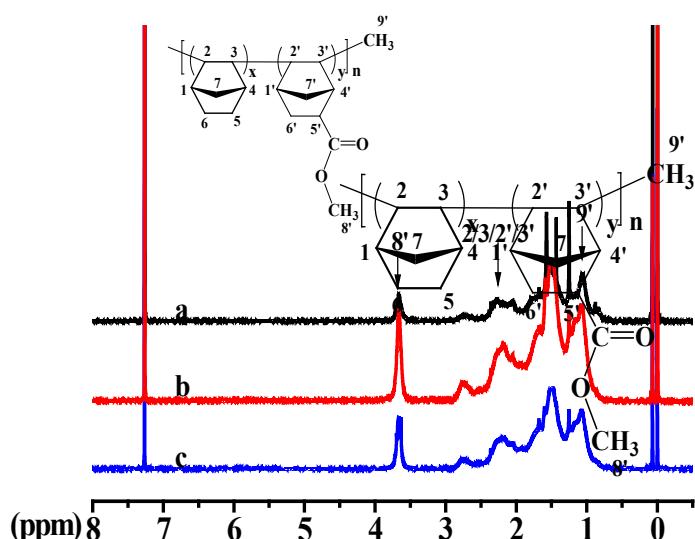


## Supporting information

### Substituent Effects and Activation Mechanism of Norbornene Polymerization Catalyzed by Three-Dimensional Geometry $\alpha$ -Diimine Palladium Complexes

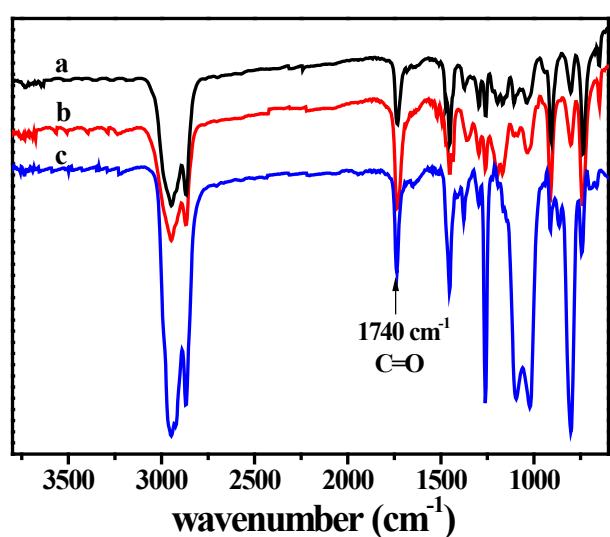
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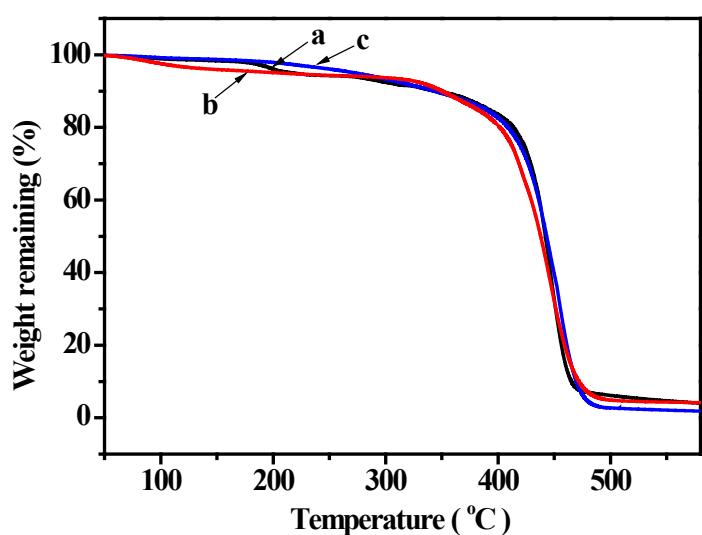


**Fig. S1** <sup>1</sup>H NMR spectra of poly(NB-co-NB-COOCH<sub>3</sub>) with (a) 20.2%, (b) 25.6%, and (c) 23.8% of NB-COOCH<sub>3</sub> molar ratios separate obtained by C1, C2, and C3/B(C<sub>6</sub>F<sub>5</sub>)<sub>3</sub> systems.

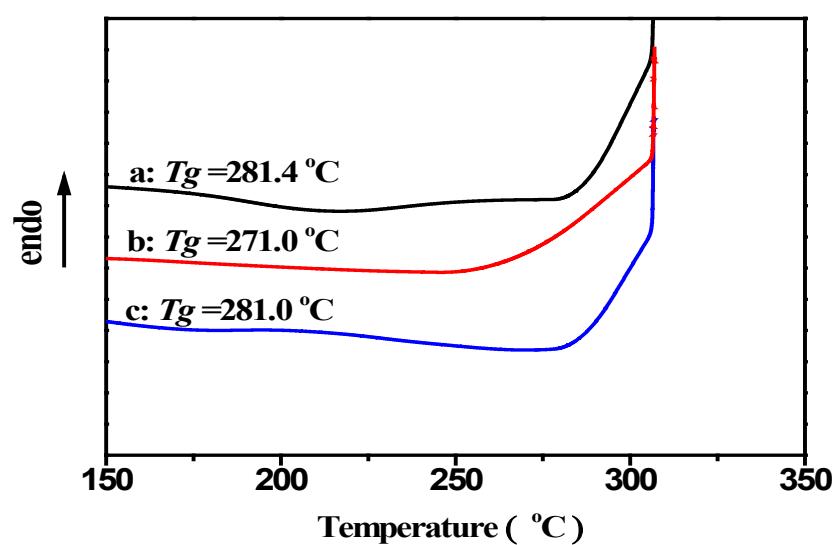
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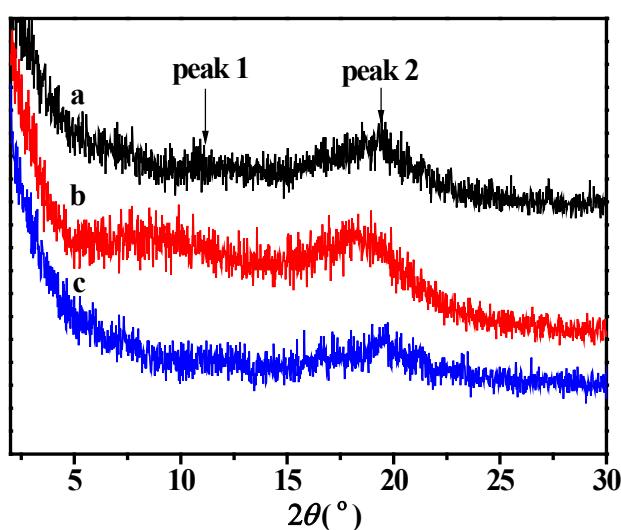
**Fig. S2** FTIR spectra of poly(NB-co-NB-COOCH<sub>3</sub>) with (a) 20.2%, (b) 25.6%, and (c) 23.8% of NB-COOCH<sub>3</sub> molar ratios separate obtained by C1, C2, and C3/B(C<sub>6</sub>F<sub>5</sub>)<sub>3</sub> systems.



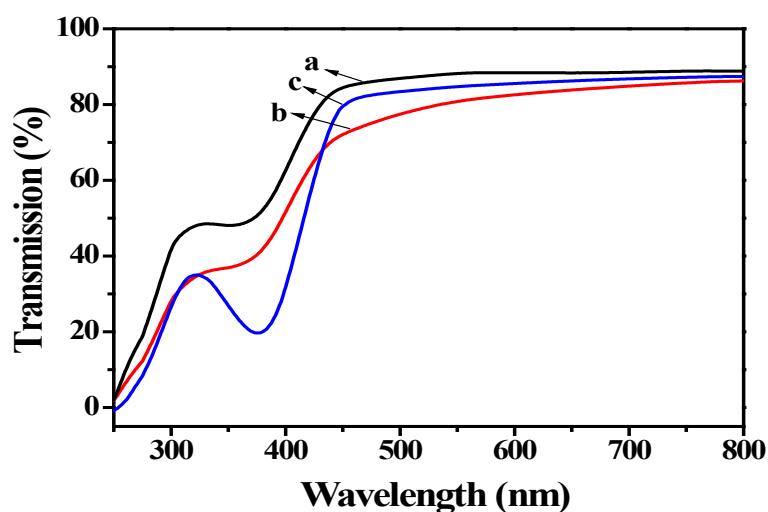
**Fig. S3** TGA curves of poly(NB-co-NB-COOCH<sub>3</sub>) with (a) 20.2%, (b) 25.6%, and (c) 23.8% of NB-COOCH<sub>3</sub> molar ratios separate obtained by C1, C2, and C3/B(C<sub>6</sub>F<sub>5</sub>)<sub>3</sub> systems. The ( $T_d$ )s of the polymers are: (a) 382.1 °C, (b) 329.5 °C, (c) 370.8°C.



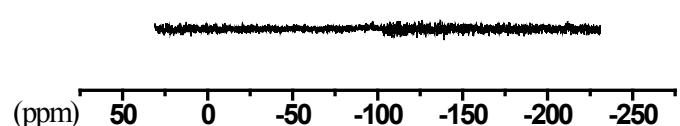
**Fig. S4** DSC curves of poly(NB-co-NB-COOCH<sub>3</sub>) with (a) 20.2%, (b) 25.6%, and (c) 23.8% of NB-COOCH<sub>3</sub> molar ratios separate obtained by C1, C2, and C3/B(C<sub>6</sub>F<sub>5</sub>)<sub>3</sub> systems.



**Fig. S5** WXRD curves of poly(NB-co-NB-COOCH<sub>3</sub>) with (a) 20.2%, (b) 25.6%, and (c) 23.8% of NB-COOCH<sub>3</sub> molar ratios separate obtained by C1, C2, and C3/B(C<sub>6</sub>F<sub>5</sub>)<sub>3</sub> systems.



**Fig. S6** The UV-Vis curves of poly(NB-co-NB-COOCH<sub>3</sub>) with (a) 20.2%, (b) 25.6%, and (c) 23.8% of NB-COOCH<sub>3</sub> molar ratios separate obtained by C1, C2, and C3/B(C<sub>6</sub>F<sub>5</sub>)<sub>3</sub> systems.



**Fig. S7** <sup>19</sup>F NMR spectrum of poly(NB-co-NB-COOCH<sub>3</sub>)  
(NB-COOCH<sub>3</sub> content: 9.1%) obtained by C2/B(C<sub>6</sub>F<sub>5</sub>)<sub>3</sub> system.