

Supporting Information for

Imido-Modified SiO₂-Supported Ti/Mg Ziegler-Natta Catalysts for Ethylene Polymerization and Ethylene/1-Hexene Copolymerization

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1. Kinetic curves of ethylene homopolymerization with i-Mg/Ti/Si, i-V/Ti/Si and i-Mg/V/Ti/Si

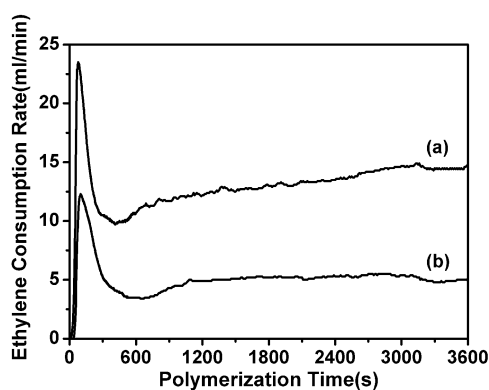


Figure S1. Kinetic curve of ethylene homopolymerization using i-V/Ti/Si with Al/Ti molar ratio of 2.5 (a) and 1 (b). Conditions: catalyst 100 mg, ethylene 0.15 MPa, n-heptane 70 mL, TIBA, 1 h.

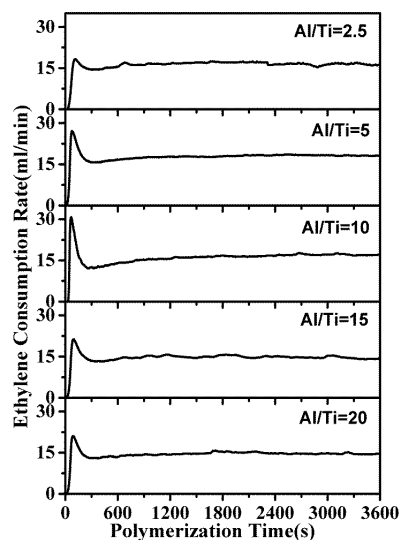


Figure S2. Kinetic curves of ethylene homopolymerization using *i*-Mg/Ti/Si with different Al/Ti molar ratio.

Conditions: catalyst 100 mg, ethylene 0.15 MPa, *n*-heptane 70 mL, TIBA, 1 h.

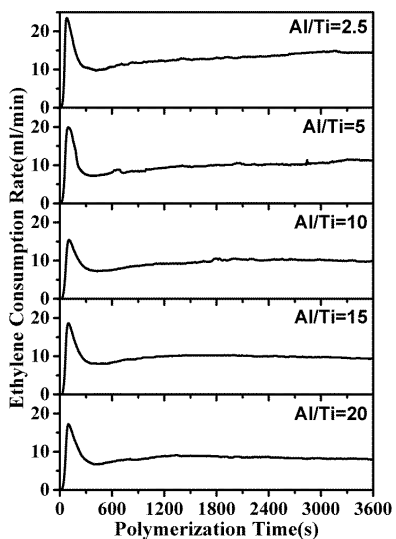


Figure S3. Kinetic curves of ethylene homopolymerization using *i*-V/Ti/Si with different Al/Ti molar ratio.

Conditions: catalyst 100 mg, ethylene 0.15 MPa, *n*-heptane 70 mL, TIBA, 1 h.

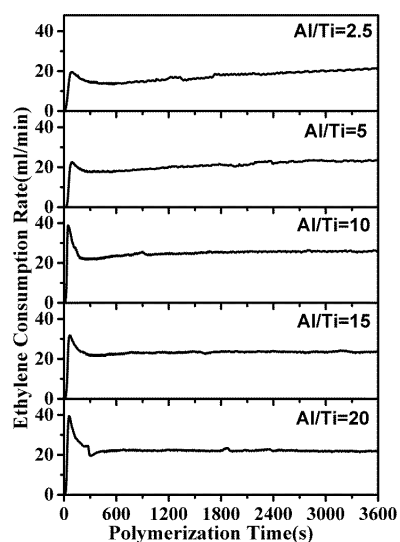


Figure S4. Kinetic curves of ethylene homopolymerization using *i*-Mg/V/Ti/Si with different Al/Ti molar ratio. Conditions: catalyst 100 mg, ethylene 0.15 MPa, *n*-heptane 70 mL, TIBA, 1 h.

2. HT-¹³C NMR spectra of the copolymers

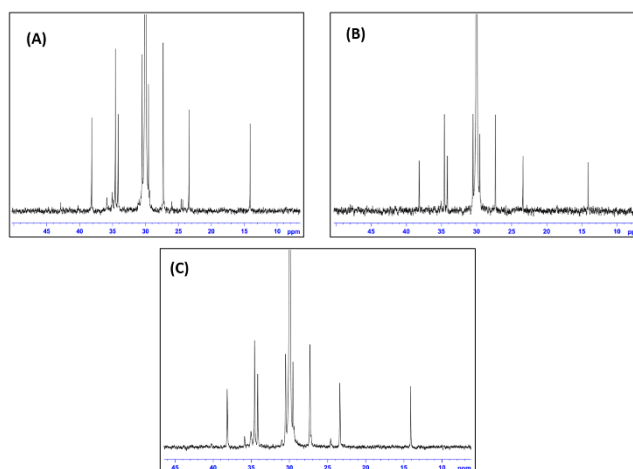


Figure S5. HT-¹³C NMR spectra of the copolymers. (A): *i*-Mg/Ti/Si, 5vol% 1-hexene, Al/Ti=5; (B): *i*-V/Ti/Si, 5vol% 1-hexene, Al/Ti=2.5; (C): *i*-Mg/V/Ti/Si, 5vol% 1-hexene, Al/Ti=10. Other polymerization conditions: catalyst 100 mg, ethylene 0.15 MPa, *n*-heptane 70 mL, TIBA, 1 h.

3. GPC curves of the polymers obtained with/without hydrogen

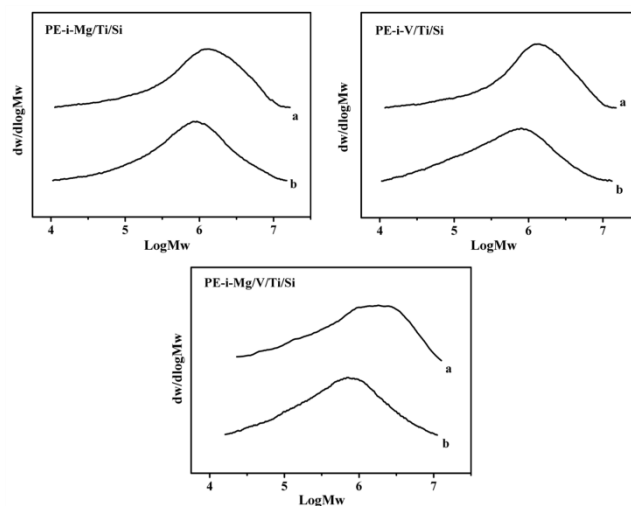


Figure S6. GPC curves of ethylene polymers obtained with/without hydrogen at ethylene pressure of 0.15MPa. PE-i-Mg/Ti/Si: Al/Ti=5; PE-i-V/Ti/Si: Al/Ti=2.5; PE-i-Mg/V/Ti/Si: Al/Ti=10; (a) without H₂, (b) with H₂. Other polymerization conditions: catalyst 100 mg, n-heptane 70 mL, TIBA, 1 h, H₂ 10ml.