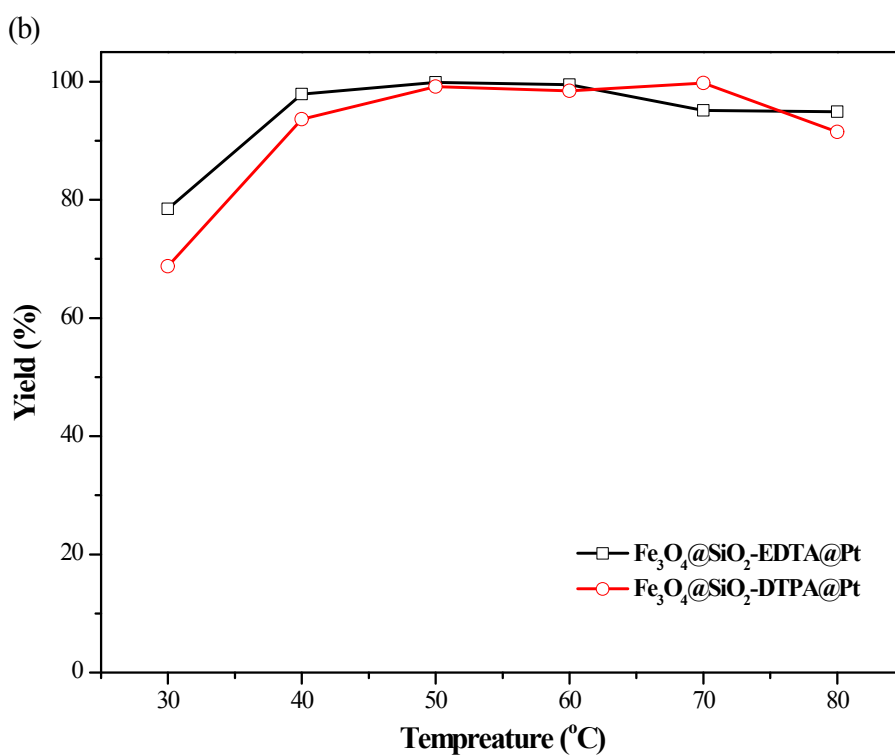
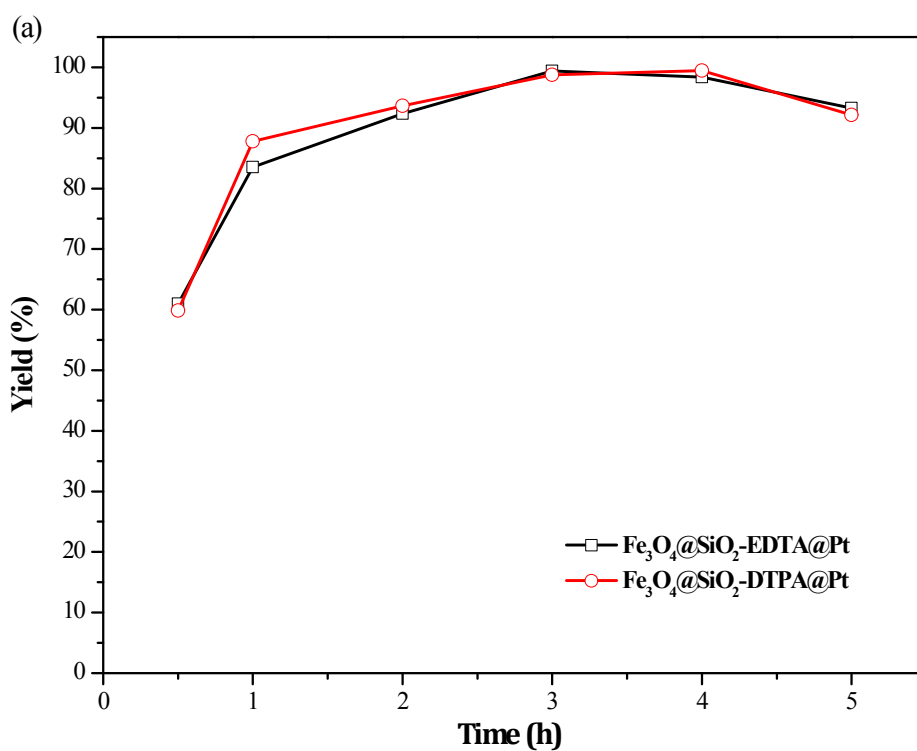


Support information



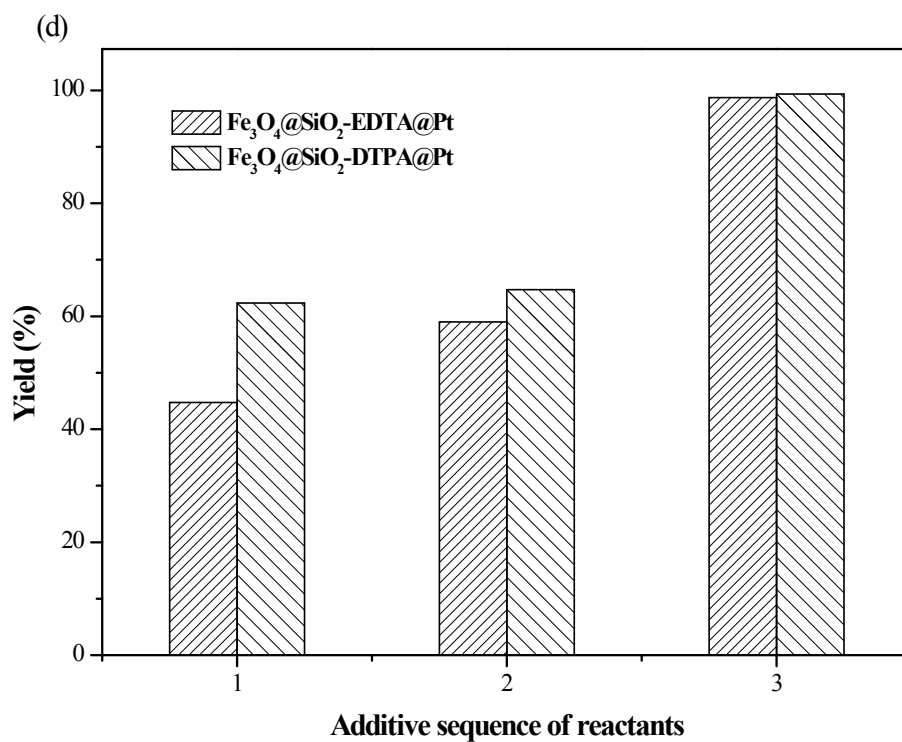
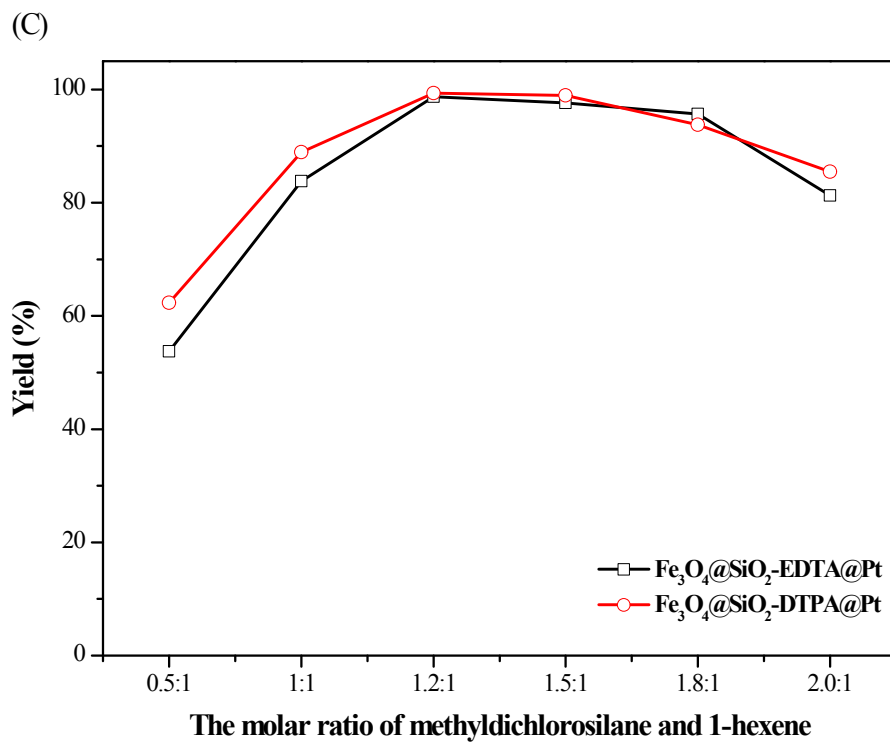
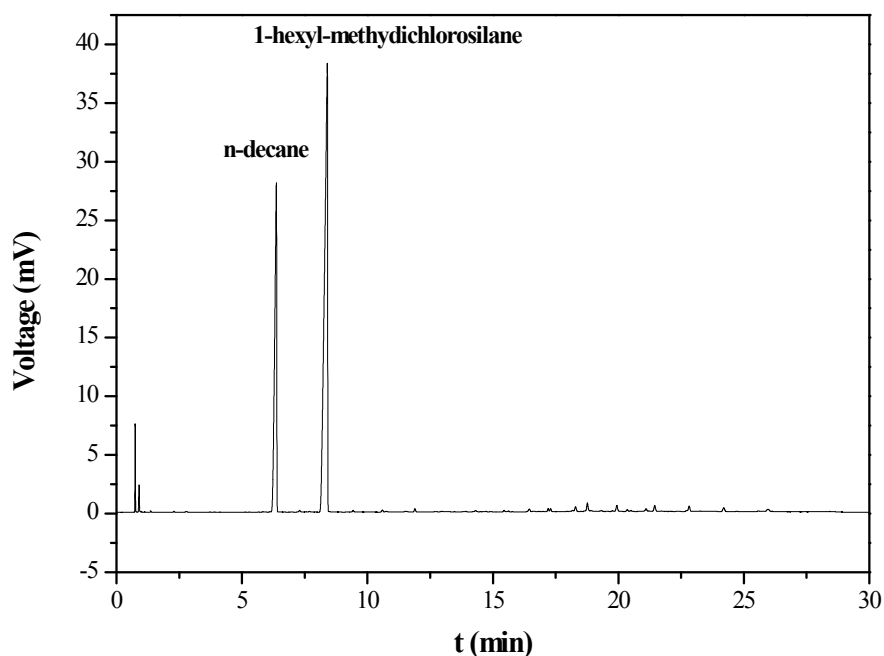


Figure S1 (a) Effect of the reaction time on the hydrosilylation of 1-hexene using 2.01×10^{-3} mmol Pt catalyst (11.6 mg $\text{Fe}_3\text{O}_4@SiO_2\text{-EDTA@Pt}$, 10.8 mg $\text{Fe}_3\text{O}_4@SiO_2\text{-$

DTPA@Pt). Reaction conditions: 11.8 mmol 1-hexene, 19.2 mmol methyldichlorosilane, 60 °C, 4 h. (b) Effect of reaction temperature on the hydrosilylation of 1-hexene. Reaction conditions: 11.8 mmol 1-hexene, 19.2 mmol methyldichlorosilane, 4 h. (c) The effect of the molar ratio of methyldichlorosilane and 1-hexene using 2.01×10^{-3} mmol Pt catalyst. Reaction conditions: 4 h, 60°C. (d) Effect of additive sequence of reactants on the yield of 1-hexyl-methyldichlorosilane, Reaction conditions: 11.8 mmol 1-hexene, 19.2 mmol methyldichlorosilane, 4 h, 60°C.

- 1-hexene added to methyldichlorosilane after methyldichlorosilane mixing with the catalyst for 30 min.
- Simultaneous addition.
- Methyldichlorosilane added to 1-hexene after mixing with the catalyst for 30 min.

(a)



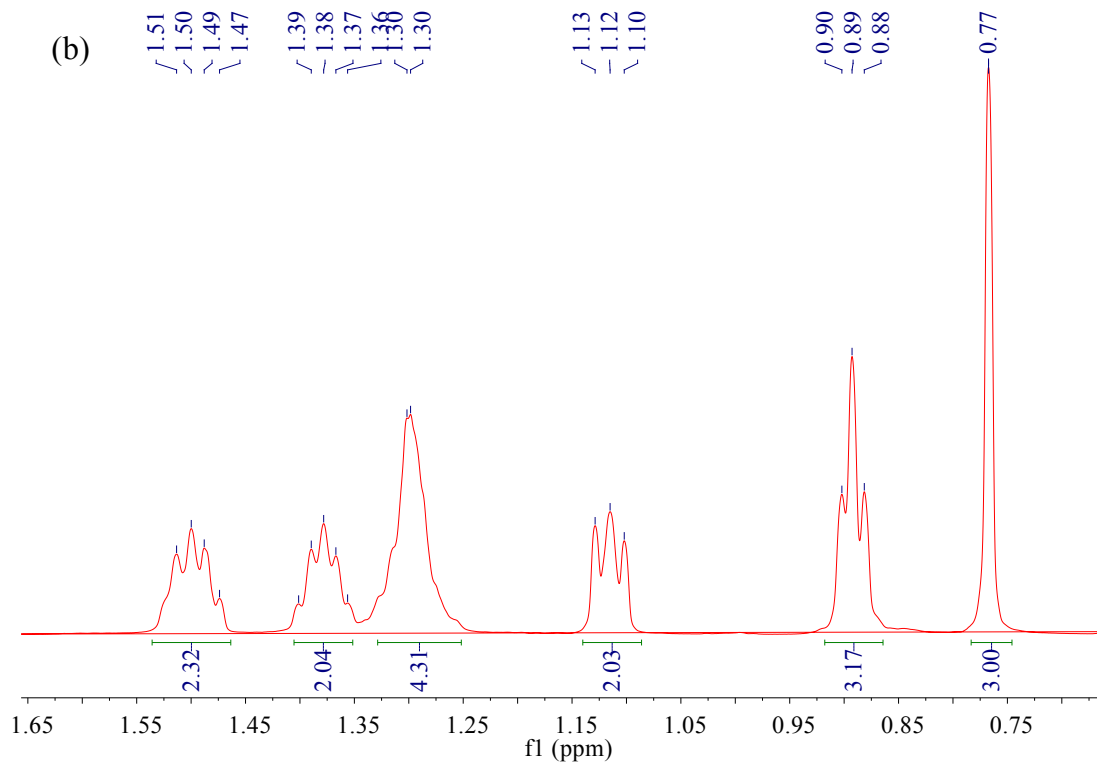
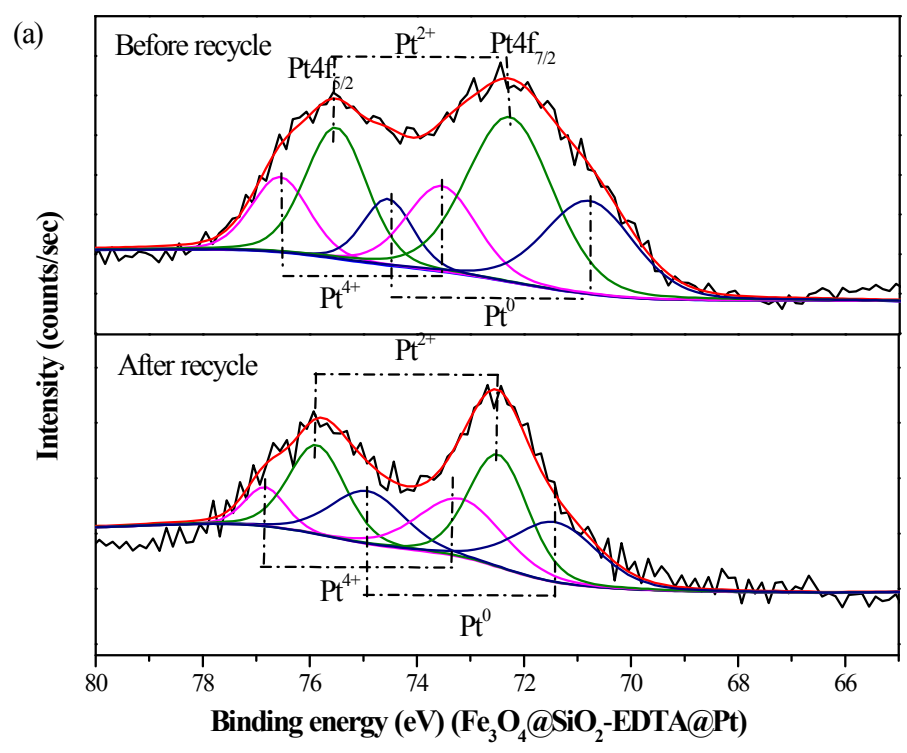


Figure S2 (a) GC chromatograms and (b) NMR spectrum of 1-hexylmethyldichlorosilane



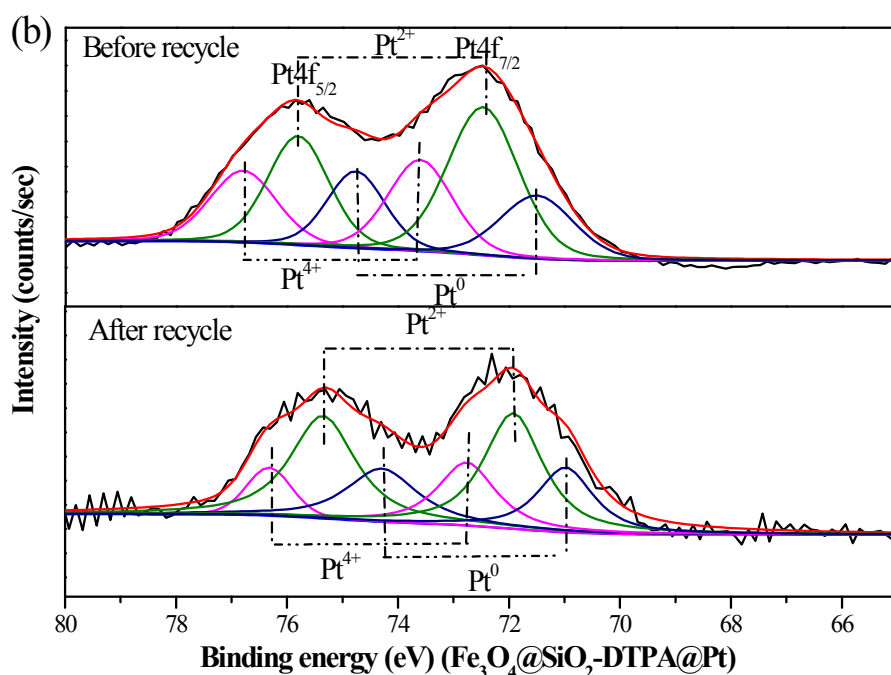


Figure S3 the state change of Pt catalysts in high-resolution XPS before and after recycle experiments. (a) $\text{Fe}_3\text{O}_4@\text{SiO}_2\text{-EDTA}@\text{Pt}$; (b) $\text{Fe}_3\text{O}_4@\text{SiO}_2\text{-DTPA}@\text{Pt}$.

Table S1 The residual and loss of the recycled Pt catalysts

Cycle	$\text{Fe}_3\text{O}_4@\text{SiO}_2\text{-EDTA} @\text{Pt}$		$\text{Fe}_3\text{O}_4@\text{SiO}_2\text{-DTPA}@\text{Pt}$	
	Pt amount ($\mu\text{mol/g}$)	The loss of Pt (%)	Pt amount ($\mu\text{mol/g}$)	The loss of Pt (%)
0	173.80	-	192.77	-
2	173.80	0.0	191.74	0.5
4	168.16	3.2	191.23	0.8
6	168.67	3.0	185.08	4.0
8	162.50	6.5	184.05	4.5
10	160.47	7.7	180.46	6.4
12	155.78	10.4	177.62	7.9

Table S2 the state change of Pt catalysts in high-resolution XPS before and after recycle experiments.

State of Pt	Fe ₃ O ₄ @SiO ₂ -EDTA@Pt		Fe ₃ O ₄ @SiO ₂ -DTPA@Pt	
	Before recycle	After recycle	Before recycle	After recycle
Pt ⁴⁺ (%)	28.9	23.9	26.4	20.4
Pt ²⁺ (%)	46.5	43.1	50.3	51.4
Pt ⁰ (%)	24.6	33.0	23.3	28.2