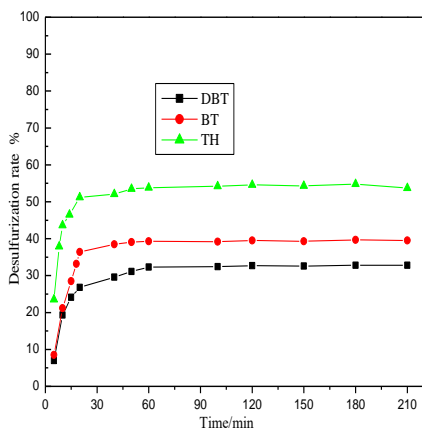
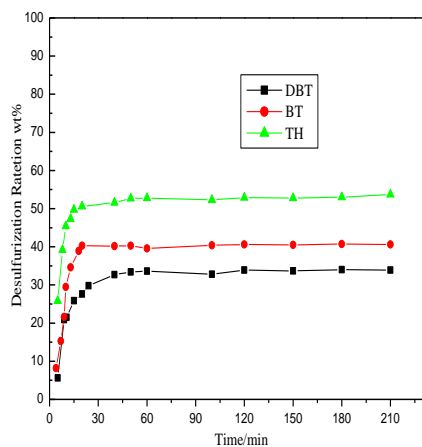
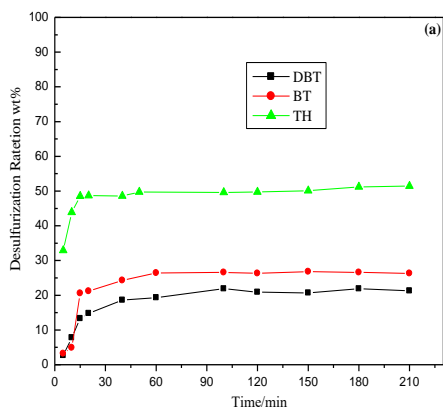
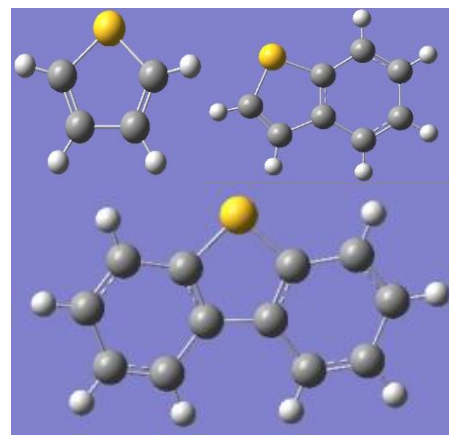


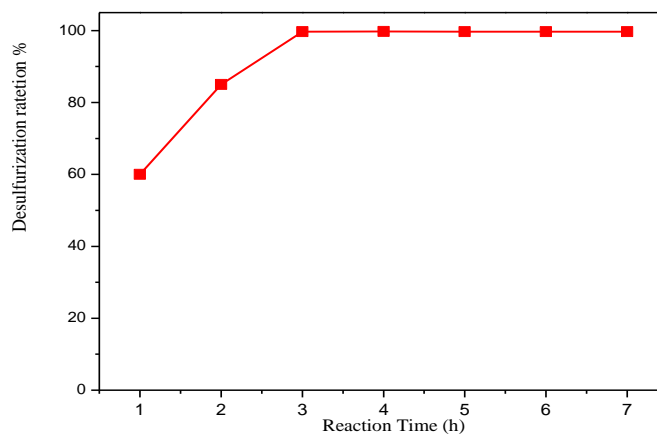
## Supporting Information



**Fig. S1.** Effect of probe molecule type on catalyst adsorption desulfurization activity a. Nano-TS-1, HPMo-Nano-TS-1, HPMo-H<sub>2</sub>O<sub>2</sub>-Nano-TS-1



**Fig. S2.** The TH, BT and DBT's structure sketch map



**Fig. S3.** Influence of reaction time on sulfur removal  
Experimental conditions:  $m(\text{catalyst}) = 0.15 \text{ g}$ ,  $\text{mol}(\text{O/S}) = 10$ ,  $V(\text{model oil/ethanol}) = 10.0 \text{ mL}/10.0 \text{ mL}$ .

Name: TS-1				
From: -126.002 ppm				
To: -97.781 ppm				
Residual Error:2.42e+08				
# ppm	Height	Width(Hz)	L/G	Area
1 -106.0	5831.84	473	0.00	15004.752
2 -115.9	92573.99	490	0.00	246609.955
3 -118.5	18020.80	433	0.62	54940.106
Name: HPMo/TS-1				
From: -126.629 ppm				
To: -98.063 ppm				
Residual Error:1.13e+08				
# ppm	Height	Width(Hz)	L/G	Area
1 -105.9	8173.37	587	0.94	37806.809
2 -115.7	103435.75	476	0.00	267810.821
3 -118.7	24859.62	269	0.56	46211.037
Name: H <sub>2</sub> O <sub>2</sub> -HPMo/TS-1				
From: -126.987 ppm				
To: -97.973 ppm				
Residual Error:4.47e+08				
# ppm	Height	Width(Hz)	L/G	Area
1 -106.0	7769.61	586	0.61	31909.436
2 -115.7	100616.27	461	0.00	252432.969
3 -118.8	57821.09	132	0.67	54878.734

**Fig. S4.** Integral data of the <sup>29</sup>Si NMR spectrum of catalysts