Supplementary Information for:

Direct preparation of $[(CH_3)_3NC_{16}H_{33}]_4Mo_8O_{26}$ and its catalytic performance in oxidative desulfurization

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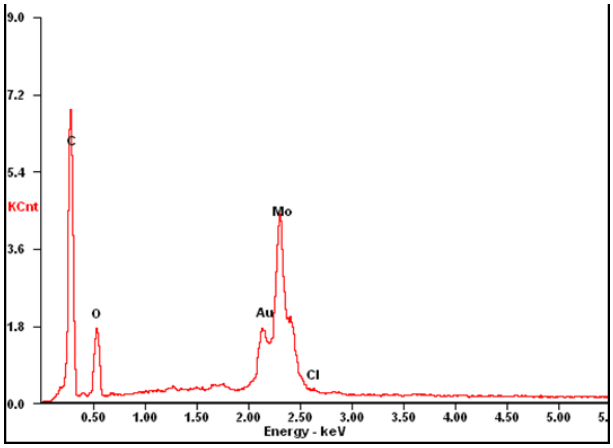

Fig.S1 EDS spectrum of the catalyst

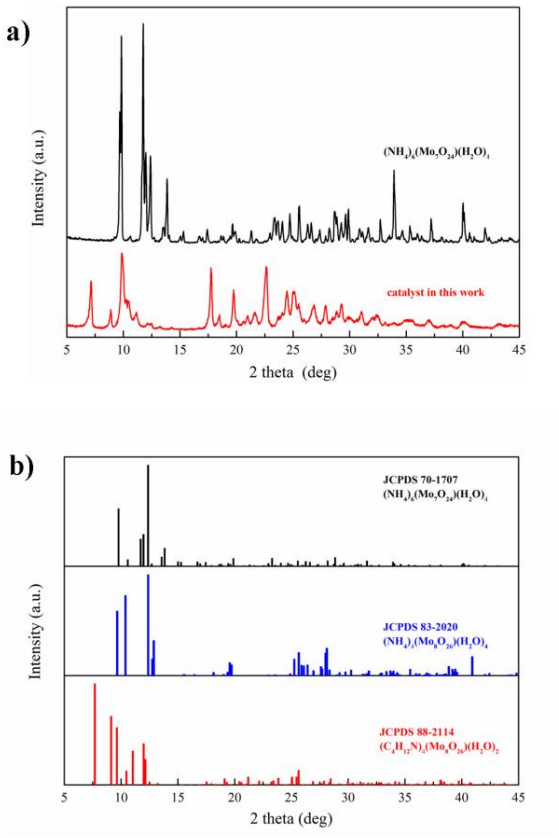

Fig.S2 XRD patterns of the precursor and the catalyst (a) together with some standard XRD patterns (b)

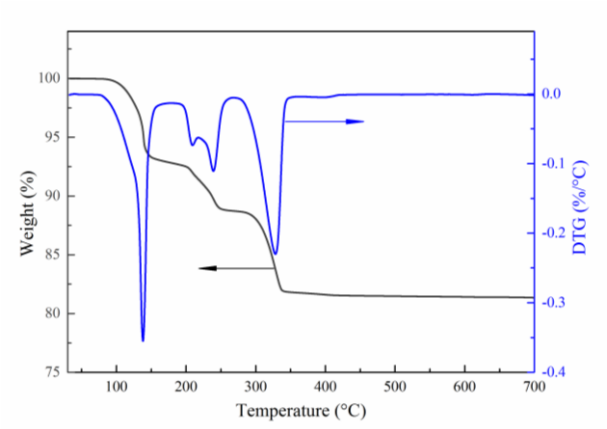

Fig.S3 TG/DTG curve of the $[(CH_3)_3NC_{16}H_{33}]_6Mo_7O_{24}$ precusor

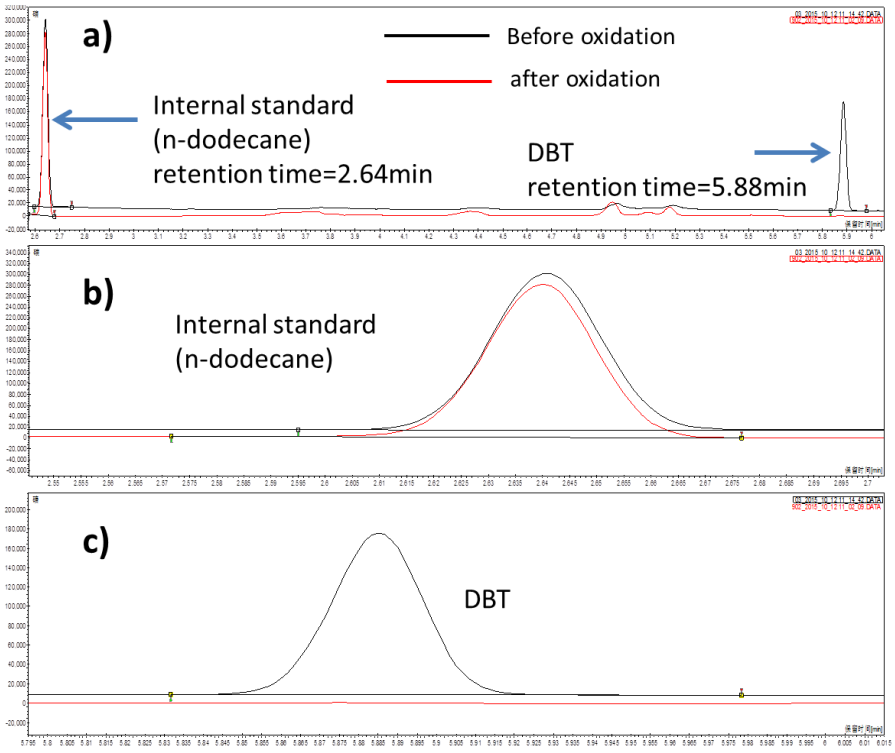

Fig. S4 GC profiles for the model fuel before and after oxidation (Experimental conditions: initial sulfur concentration=500ppmwS, temperature=60 ℃, catalyst/oil =0.613%, O/S=5, time=90min)

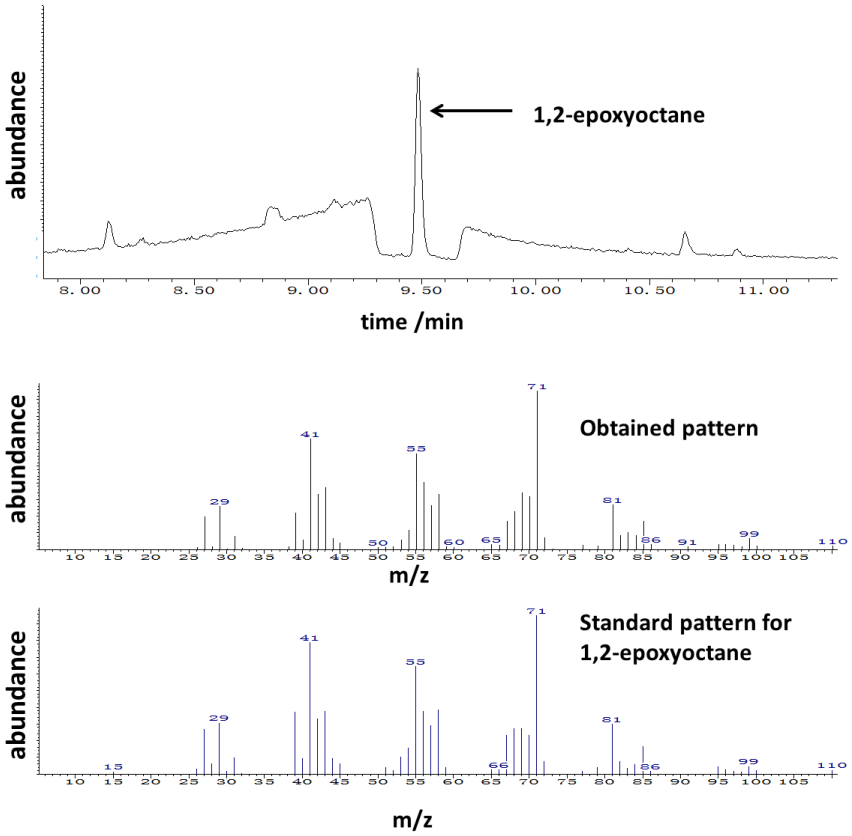

Fig.S5 GC−MS analysis of oil phase.

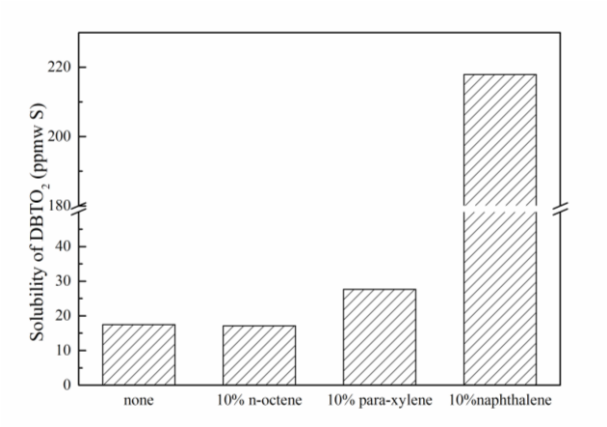

Fig.S6 Solubilities of $DBTO_2$ in different solvents. (Compositions: pure *n*-octane, or *x*/octane=1:9 in mass, *x*=*n*-octene, *para*-xylene or naphthalene)

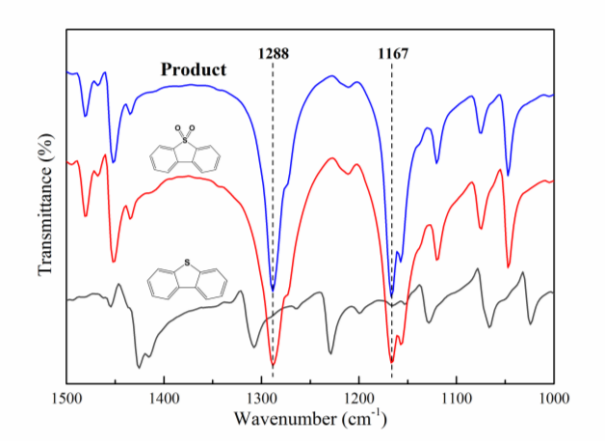

Fig.S7 FTIR spectra of DBT, $DBTO_2$ and the product

Table S1 Comparison of CHN elemental contents with the calculated ones

	C[a]	H[a]	N[a]
$[(CH_3)_3NC_{16}H_{33}]_6Mo_7O_{24}$[b]	49.6	9.1	3.0
$[(CH_3)_3NC_{16}H_{33}]_4Mo_8O_{26}$[b]	39.3	7.2	2.4
Catalyst[c]	39.4	7.2	2.2

[a] Measured in wt.%

[b] Calculated values

[c] Obtained by CHN elemental analysis