Titanium Modified TUD-1 Mesoporous Catalysts for Hydrotreating of FCC Diesel

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Table S1. Selectivity of the final products over different catalysts for DBT HDS

Selectivity (%)[a]	NiMo/Ti AT-10	NiMo/Ti AT-25	NiMo/TiAT-40	NiMo/Ti AT-50	NiMo/Ti AT-70	NiMo/AT
BP	62.4	50.9	54.0	59.1	61.4	73.7
CHEB	0.1	0.2	0.2	0.1	0.1	0.1
CHB	33.3	41.9	39.1	34.1	33.2	22.6
DCH	2.1	2.7	3.8	1.8	2.9	2.1
THDBT	1.9	3.3	1.9	3.4	1.7	0.4
CPMCH	0.1	0.1	0.2	0.7	1.0	0.4
CPMB	0.1	0.9	0.8	0.8	1.0	0.7
HYD/DDS	0.60	0.96	0.85	0.69	0.63	0.36

HYD: CHEB+CHB+DCH+THDBT+CPMCH+CPMB; DDS: BP

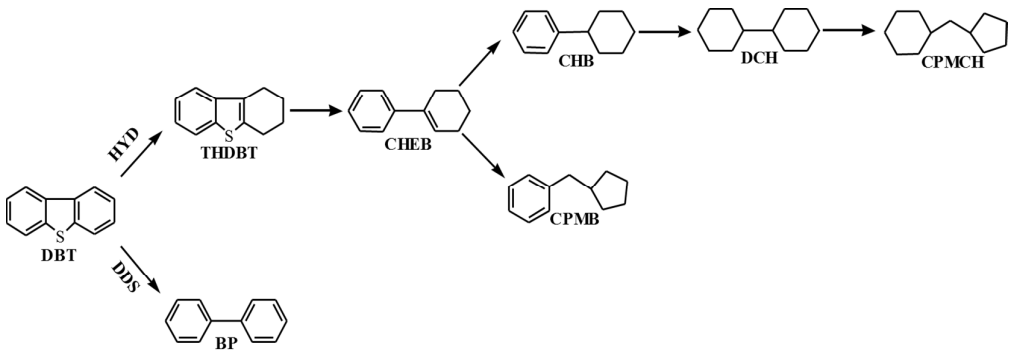

Fig. S1 Possible reaction network of DBT HDS over different catalysts

Table S2. Diesel product distribution

	FCC diesel	Product
Alkane, %	31.60	46.33
Olefin, %	12.70	0.40
Monocyclic cycloalkanes, %	7.36	9.09
Bicyclic cycloalkanes, %	3.42	5.72
Tricyclic cycloalkanes, %	0.47	1.23
Total cycloalkanes, %	11.25	16.04
Monocyclic aromatic hydrocarbon, %	31.23	35.27
Bicyclic aromatic hydrocarbon, %	7.71	1.44
Tricyclic aromatic hydrocarbon, %	5.51	0.52
Total aromatics, %	44.45	37.23

Table 8 is a distribution table of the products after FCC diesel reaction. It can be seen from the table that NiMo/TiAT-25 catalyst has a certain hydrogenation-selective ring-opening activity, and also has a certain aromatic-reducing activity, and the total aromatics content is reduced from 44.45 to 37.23, which reduces about 7 percentage points.