

Electronic Supplementary Information

Size modulation of MIL-125 nanocrystals to promote the catalytic performance towards oxidative desulfurization

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Table 1. Textural properties of the MIL-125 samples.

Sample	S_{BET} (m ² /g) ^a	S_{ext} (m ² /g) ^b	V_{total} (cm ³ /g)	V_{micro} (cm ³ /g) ^b	$V_{\text{micro}}/V_{\text{total}}$
MIL-125	1320	181	0.67	0.56	0.84
MIL-125-CA-1	1465	190	0.63	0.49	0.78
MIL-125-CA-3	1515	203	0.69	0.51	0.74
MIL-125-CA-5	1377	251	0.73	0.44	0.60

^aSpecific surface area calculated using the BET method.

^b S_{ext} (external surface area) and V_{micro} (micropore volume) calculated using the t -plot method.

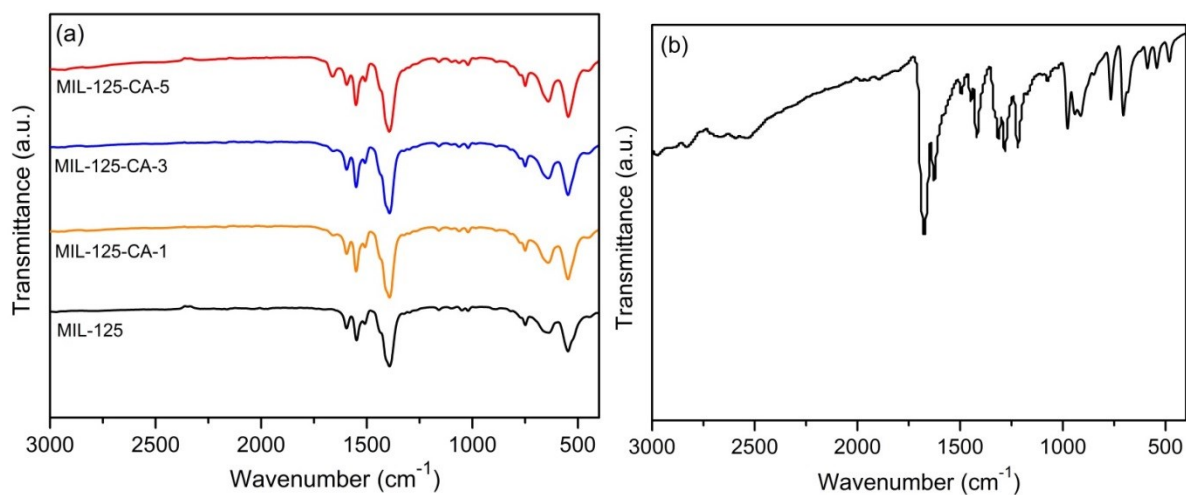


Fig. S1 IR spectra of the (a) MIL-125 samples and (b) *trans*-cinnamic acid.

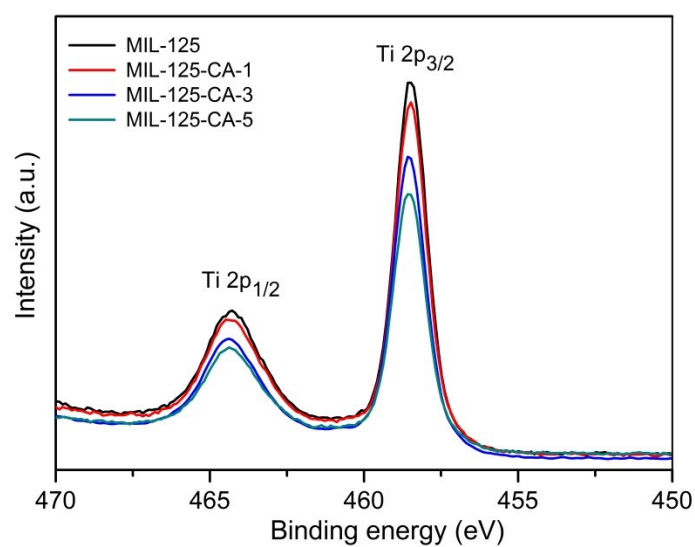


Fig. S2 Ti 2p XPS spectra of the MIL-125 samples.

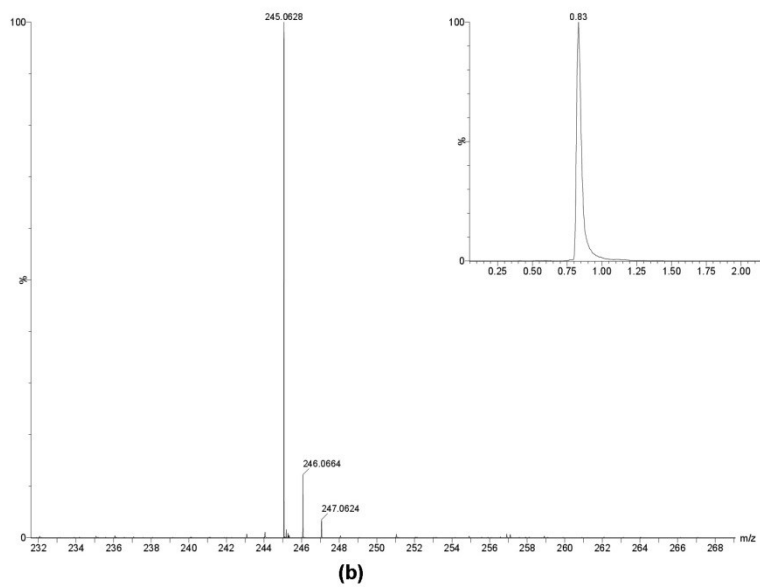
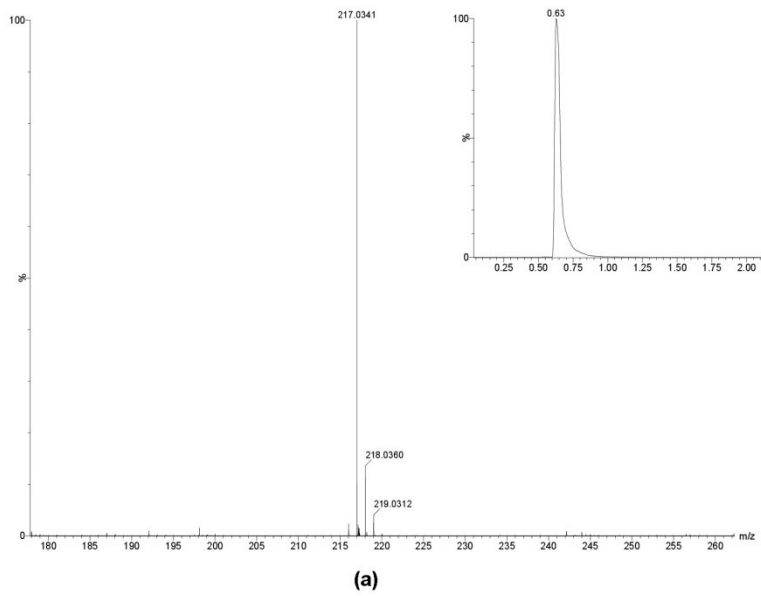


Fig. S3 LC-MS analysis of the products for ODS of (a) DBT and (b) 4,6-DMDBT.

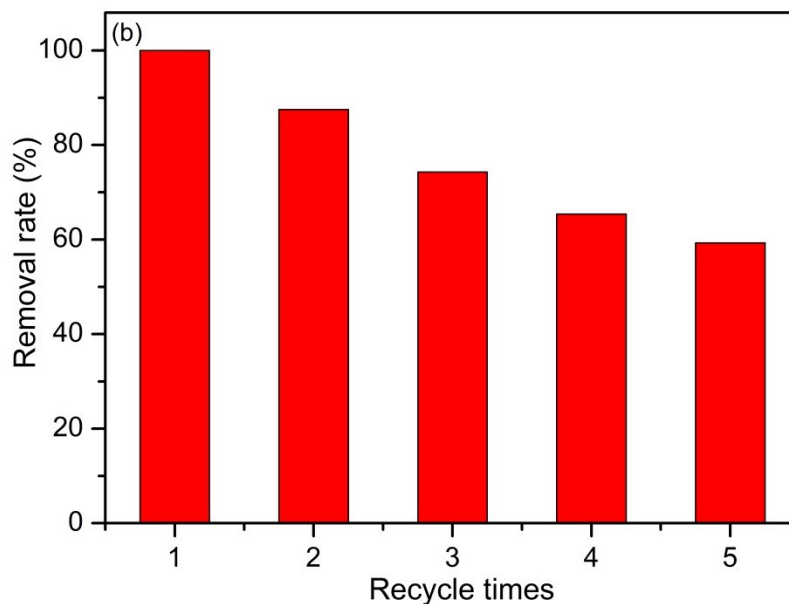
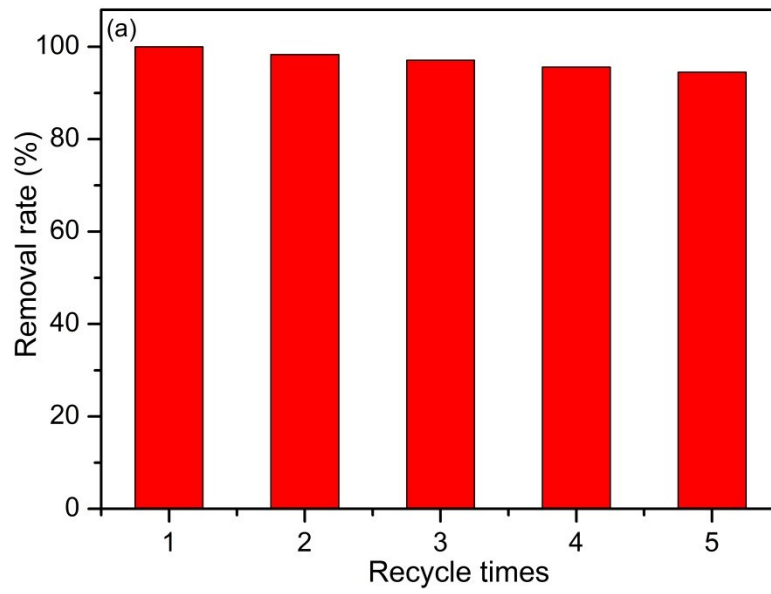


Fig. S4 Recycle tests in the ODS of DBT over (a) MIL-125-CA-5 and (b) MIL-125.

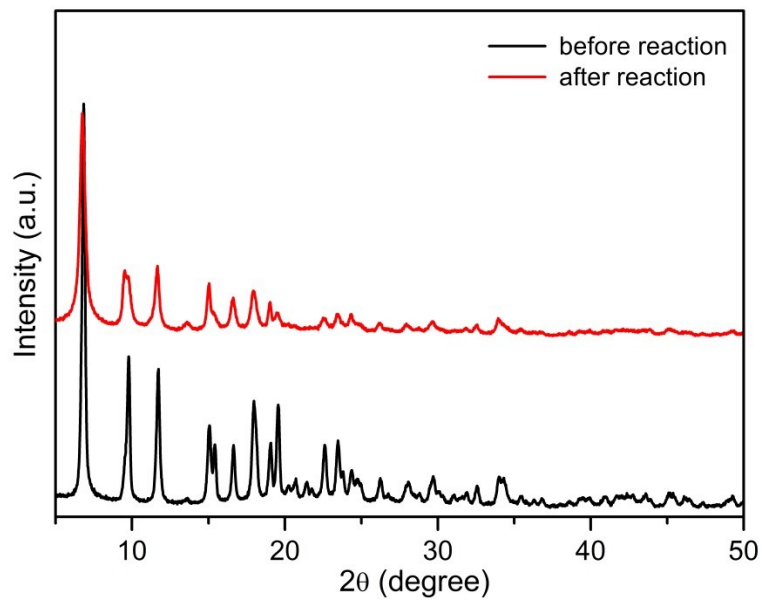


Fig. S5 PXRD patterns of MIL-125-CA-5 before and after reaction in the recycle tests.

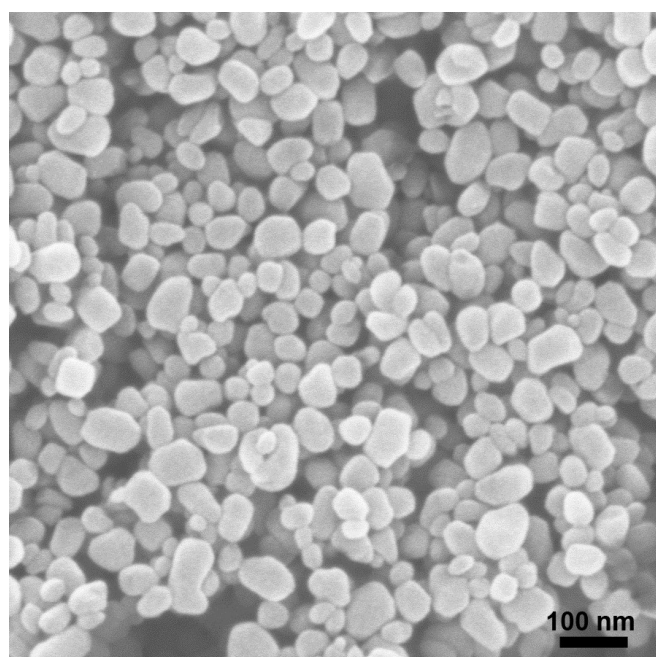


Fig. S6 SEM image of MIL-125-CA-5 after reaction in the recycle tests.