

Supporting Information for:

**MoO₃ Subnanoclusters on Ultrasmall Mesoporous Silica
Nanoparticles: An Efficient Catalyst for Oxidative Desulfurization**

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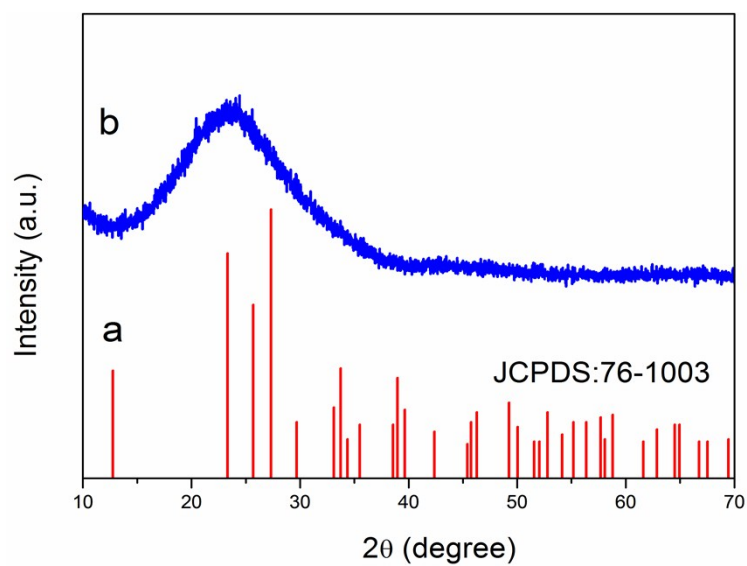


Figure S1. (a) The JCPDS card of MoO_3 ; (b) the XRD pattern of subnano- MoO_3/UMSN .

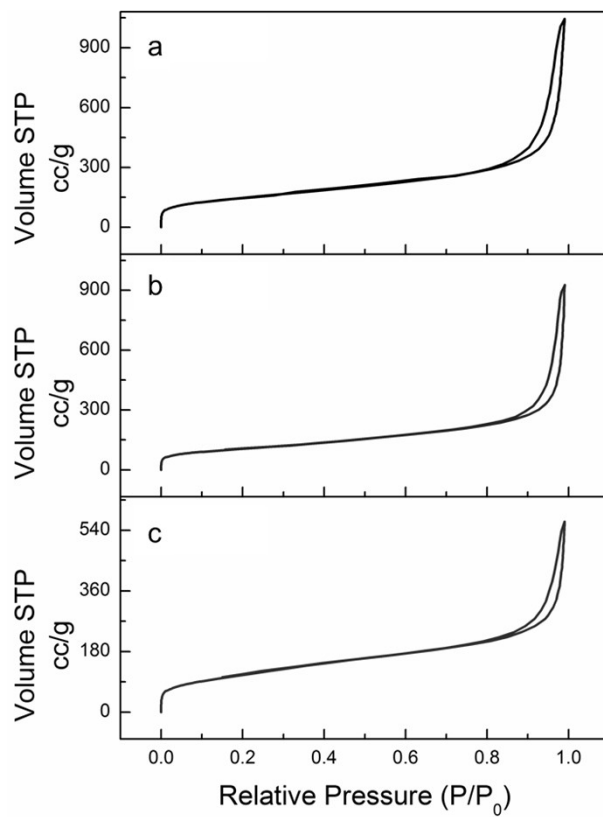


Figure S2. N_2 adsorption-desorption isotherms of catalyst (a) C-1, (b) C-2, and (c) C-3.

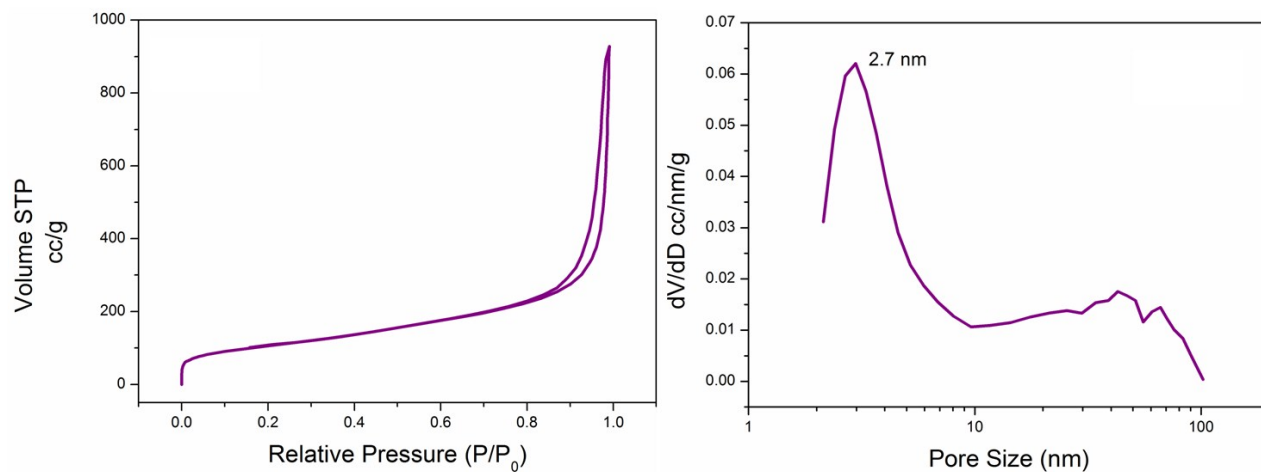


Figure S3. N₂ adsorption-desorption isotherm and pore size distribution of meso-SiO₂.

¹H NMR (500 MHz, Chloroform-*d*) δ 7.82 (dd, *J*= 14.7, 7.6 Hz, 4H), 7.65 (td, *J*= 7.6, 1.2 Hz, 2H), 7.54 (td, *J*= 7.6, 1.0 Hz, 2H).

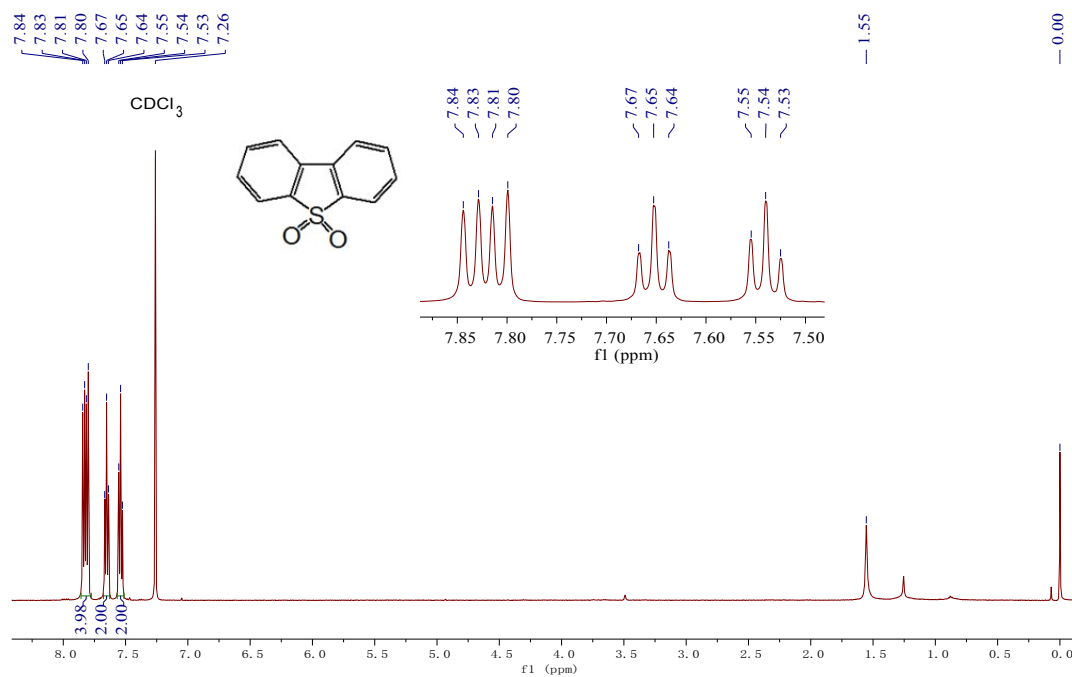
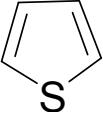
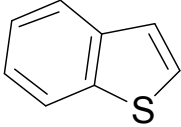
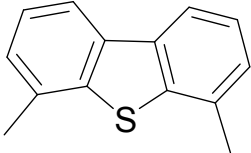


Figure S4. The ¹H NMR spectrum of DBTO₂.

Table S1. ODS conversion of different substrates catalyzed by C-1.^a

Entry	Substrate	DBT conversion%
S1		99.2
S2		99.6
S3		100

a: [cat.]/[S] = 0.075, [O]/[S] = 6, 70 °C, 15 min.

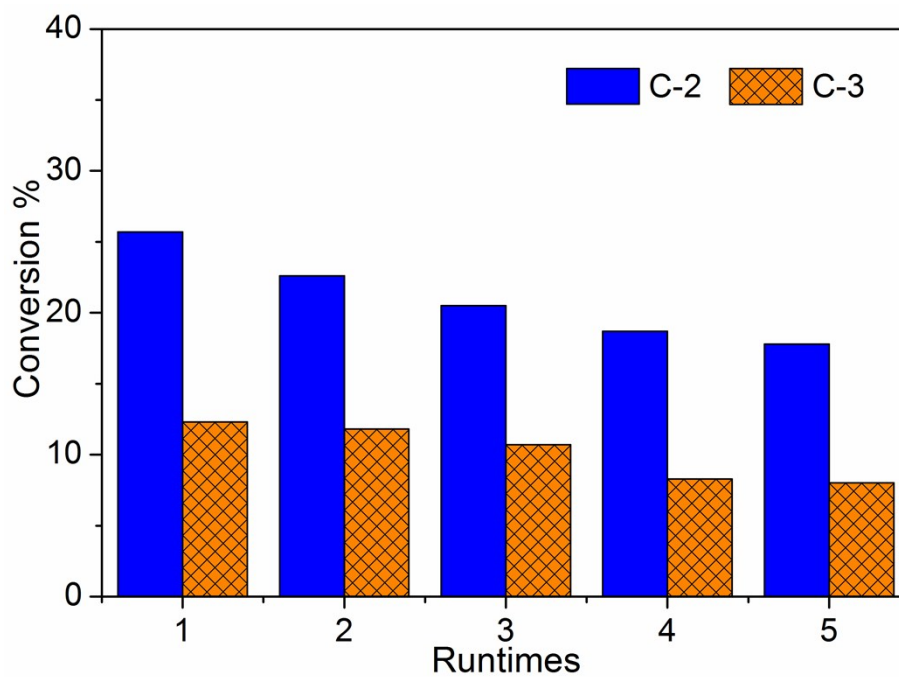


Figure S5. The variation of DBT conversion with runtimes for C-2 and C-3.