Oxidative coupling of aniline and desulphurization over nitrogen rich mesoporous carbon

Reena Goyal,[a] Deepa Dumbre,[b] L. N. Sivakumar Konathala,[a] Monica Pandey,[a] and Ankur Bordoloi*[a]

Figure S1

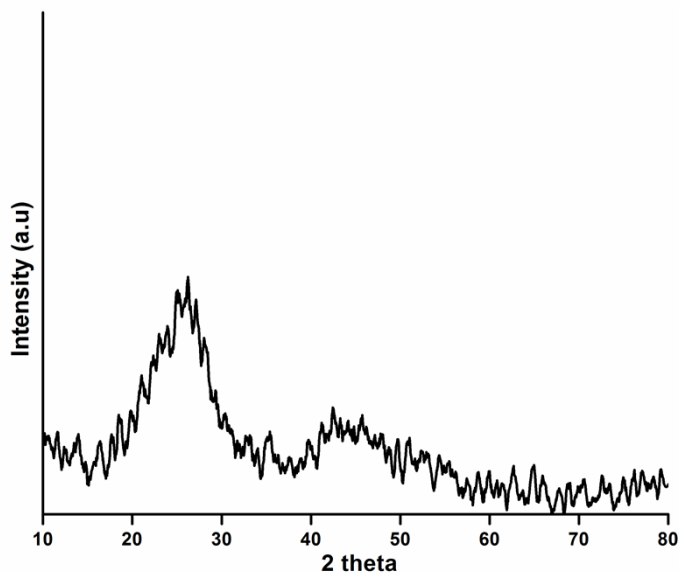Figure S1 Wide angle XRD of WOx/MCNx (5).

Figure S2
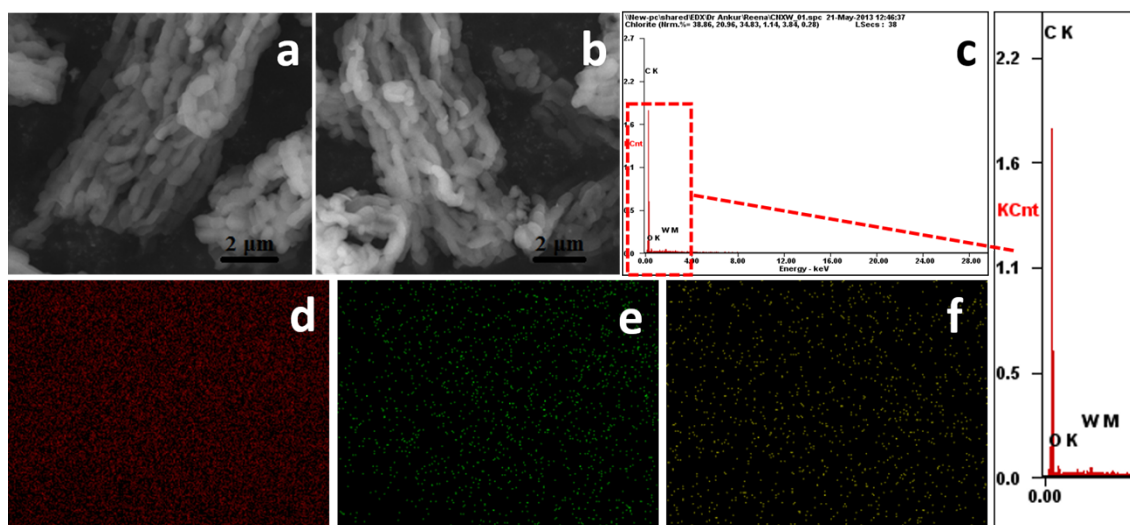

Figure S2. (a-b) SEM images WOx/MCNx; c) EDAX analysis of the WOx/MCNx catalyst and (d-f) is the elemental mapping of carbon, nitrogen and tungsten respectively.
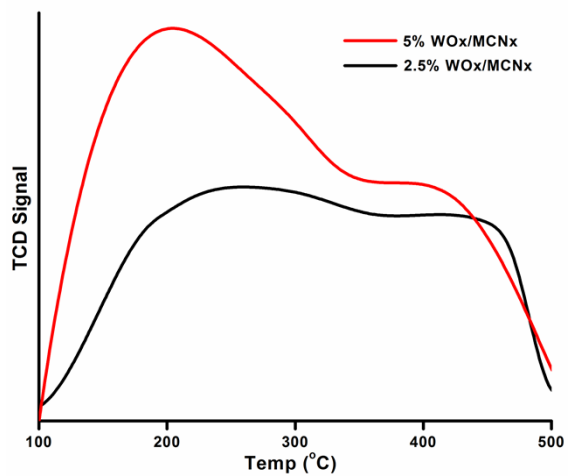
Figure S3

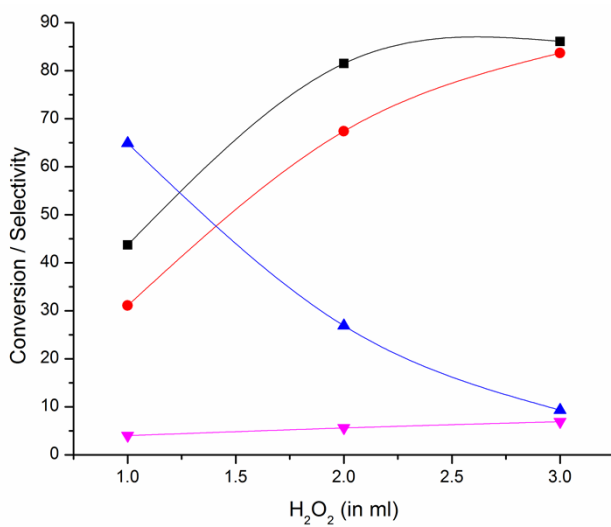Figure S3. TPD pattern of WOx/MCNx (2.5 & 5).

Figure S4

Figure S4. Effect of H_2O_2 as a function aniline conversion and product selectivity. (■) conversion of DBT; (●) selectivity of azo-benzene; (▲) selectivity of nitroso-benzene and (▼) selectivity of azooxy-benzene.
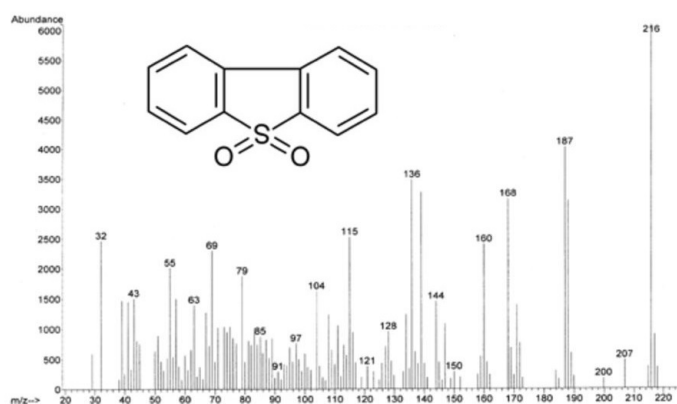
Figure S5

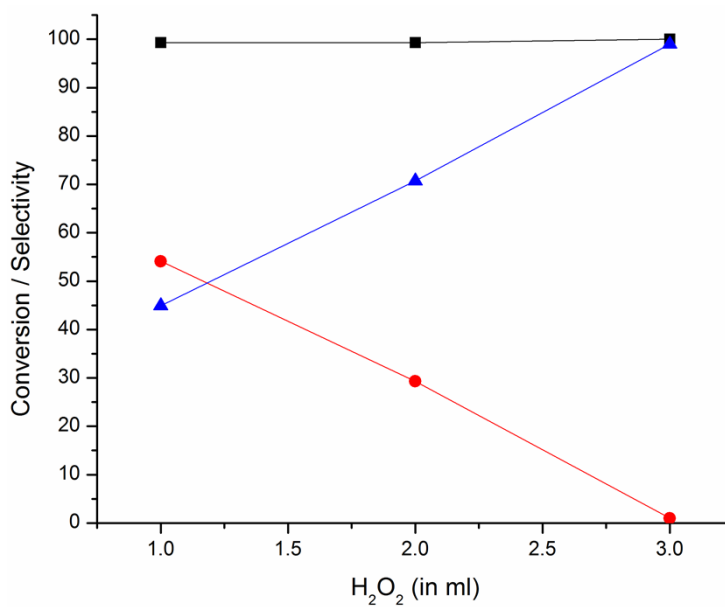Figure S5. GC-MS of DBTSO (screen shot).

Figure S6

Figure S6. Effect of H_2O_2 as a function of DBT conversion and product selectivity after 2h time-on-steam. (■) conversion of DBT; (●) selectivity of DBTS and (▲) selectivity of DBTSO.

Table S1

Table S1. Physico-chemical parameters of WOx/MNCx

Catalyst	X_{BET} (m^2/g)	X_P (cc/g)	X_{Pd} (nm)	ICP	CHN [a]		XPS [a]	
					C	N	C	N
MNCx	357	0.61	3.8	-	62.7	13.38	65.8	14.02
WOx/MNCx (5)	327	0.36	3.5	262.50	61.4	14.7	64.1	12.05

X_{BET} = BET surface area in m^2/g; X_p= pore volume in cc/g; X_{pd}= pore diameter in nm; ICP is in (W/ppm); [a] in mole %.

Scheme S1
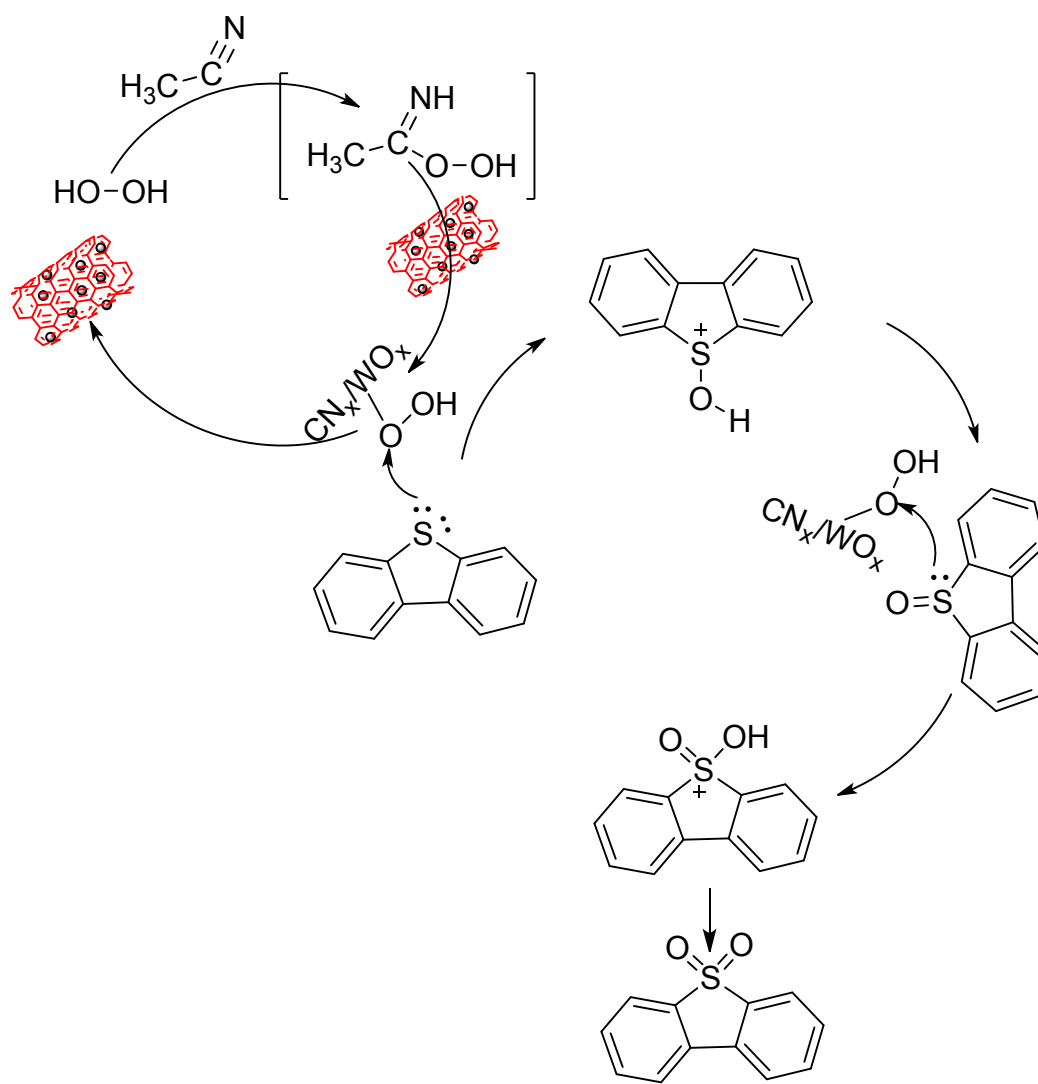
Scheme S1 Plausible reaction pathway for Oxidative desulphurisation of Dibenzothiophene over WOx/MCNx.