

Electronic supplementary information

for

**Deactivation and regeneration of carbon nanotube and nitrogen doped carbon
nanotube in catalytic peroxymonosulfate activation for phenol degradation:
Variation of surface functionalities**

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Table S1. Specific surface areas (S_{BET}) and pore volumes (V_{t}) of CNT and NCNT samples

Sample	S_{BET} ($\text{m}^2 \text{g}^{-1}$)	V_{t}^{a} ($\text{cm}^3 \text{g}^{-1}$)	Sample	S_{BET} ($\text{m}^2 \text{g}^{-1}$)	V_{t} ($\text{cm}^3 \text{g}^{-1}$)
CNT-750	103.3	0.25	NCNT-750	105.3	0.29
U-CNT-1	97.5	0.24	U-NCNT-1	104.1	0.26
U-CNT-2	103.1	0.29	U-NCNT-2	99.7	0.26
U-CNT-3	98.3	0.26	U-NCNT-3	100.6	0.28
U-CNT-4	97.0	0.25	U-NCNT-4	106.4	0.30
T-CNT-350	100.1	0.26	T-NCNT-350	101.5	0.28
T-CNT-550	92.4	0.23	T-NCNT-550	115.1	0.30
T-CNT-750	101.4	0.33	T-NCNT-750	106.3	0.29
R-CNT	102.4	0.29	R-NCNT	108.8	0.37
O-CNT-1	101.4	0.29	O-NCNT-1	101.4	0.29

^a V_{t} : pore volume at $P/P_0=0.97$

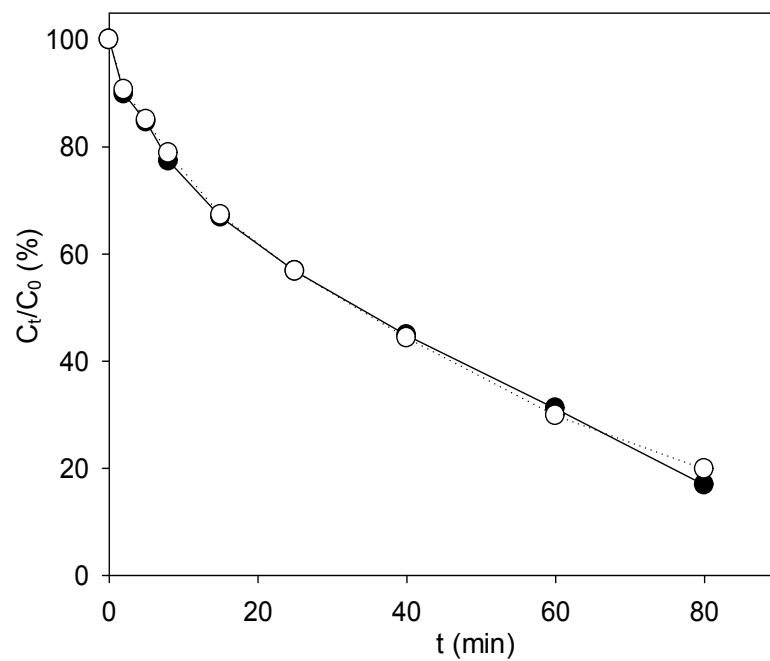


Fig. S1 Two separate runs of phenol degradation on CNT-750

Reaction conditions: $[PMS]_0 = 8 \text{ mM}$; $[\text{phenol}]_0 = 0.106 \text{ mM}$; catalyst = 0.1 g L^{-1}

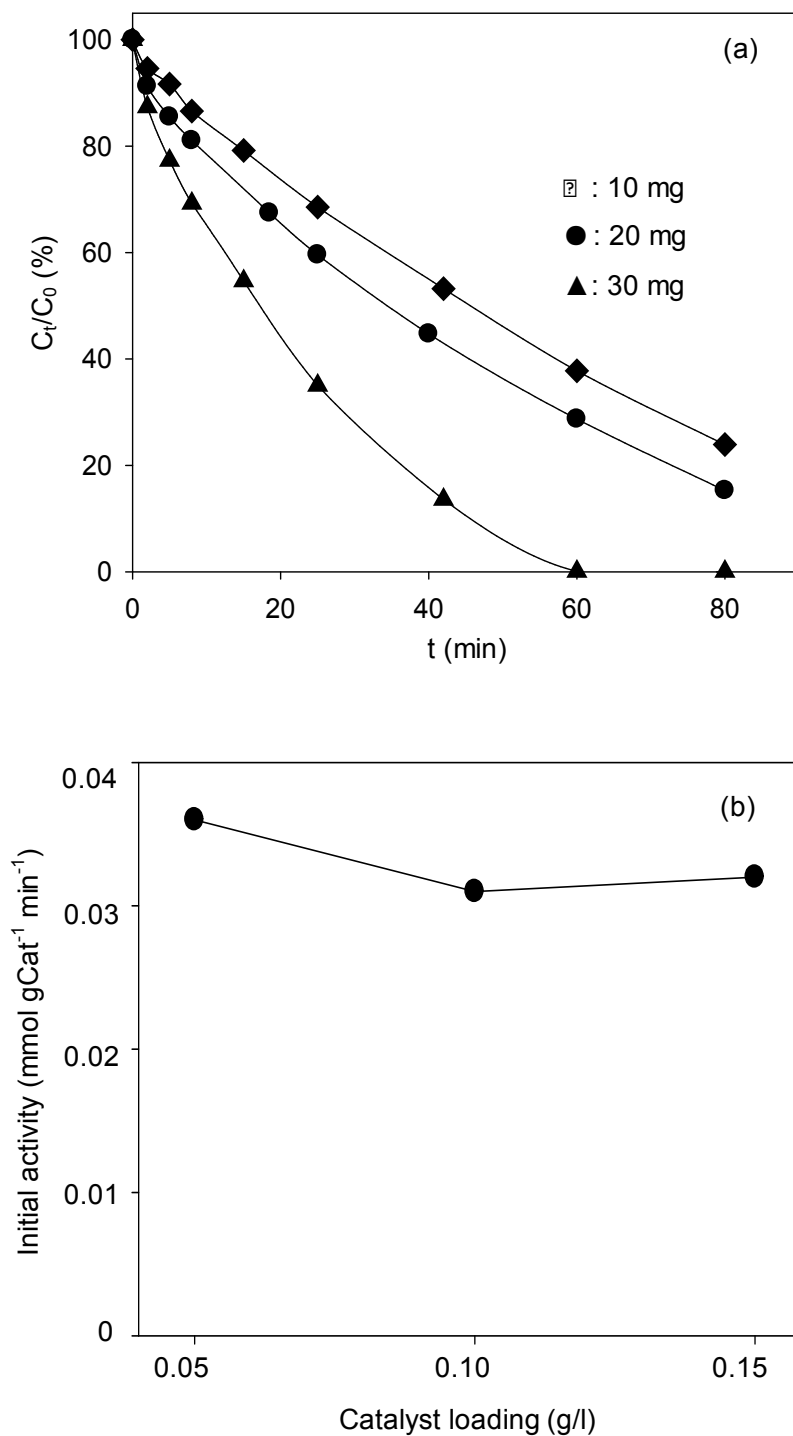


Fig. S2 Effect of CNT-750 dosage on (a) phenol removal and (b) normalized initial activity

Reaction conditions: $[PMS]_0 = 8$ mM; $[phenol]_0 = 0.106$ mM