Supporting information

Fe-Trimesic Acid/Melamine Gel-Derived Fe/N-Doped Carbon Nanotubes as Catalyst of Peroxymonosulfate to Remove Sulfamethazine

Figure number: 4
Table number: 5

Figure S1 (a)-N_2 adsorption-desorption isotherm;(b)-MBET aperture distribution image

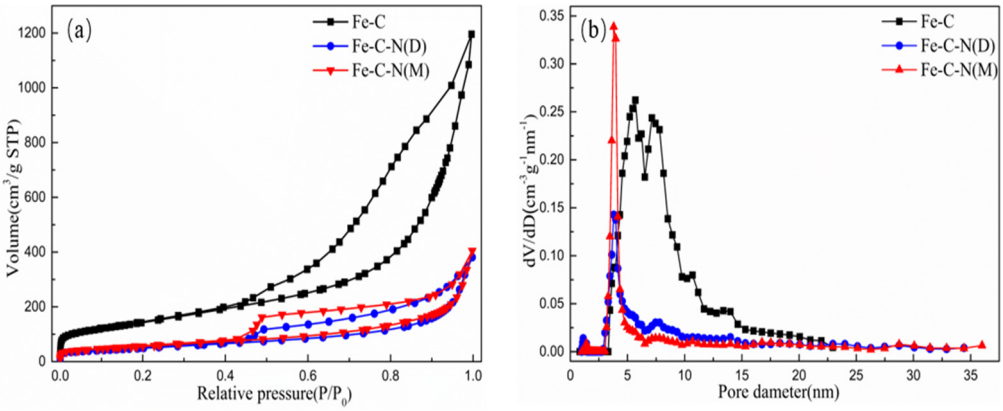


Figure S2 XPS image of Fe-C-N（M） un-used (a) and used (b) degradation.

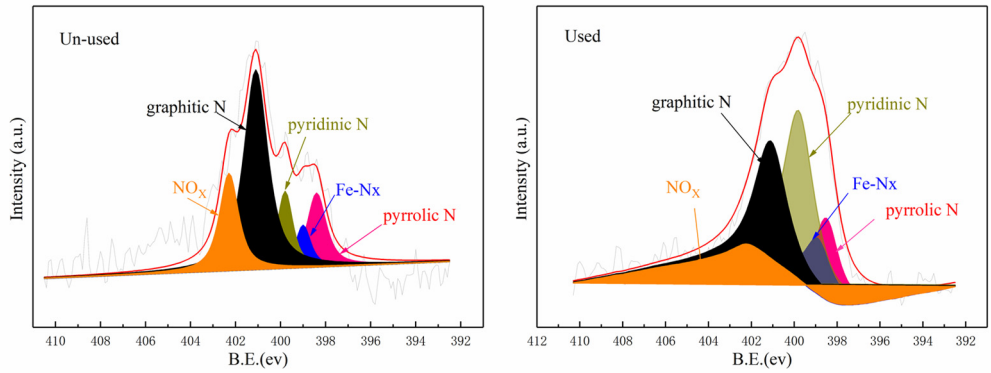


Figure S3 the SMZ degradation pathways

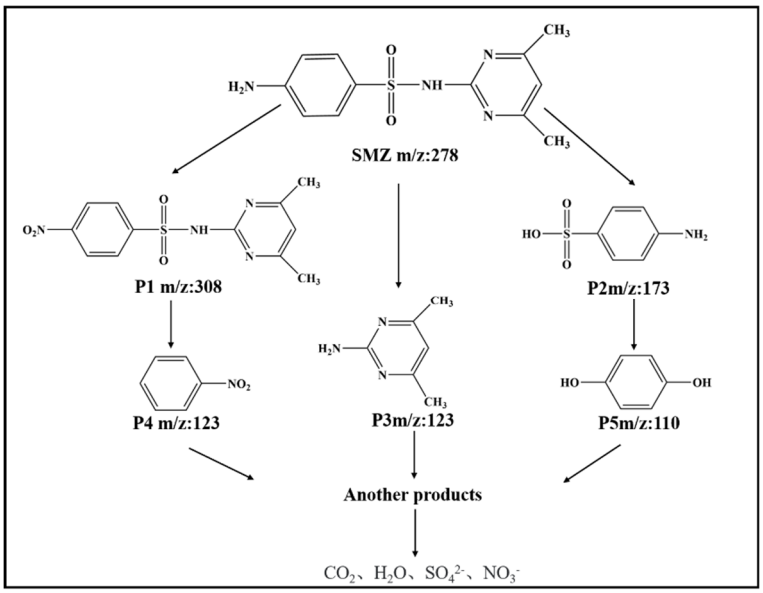


Figure S4 (a)-Catalyst reuse experiment;(b)-Dissolution of Fe metal after repeated use of catalyst

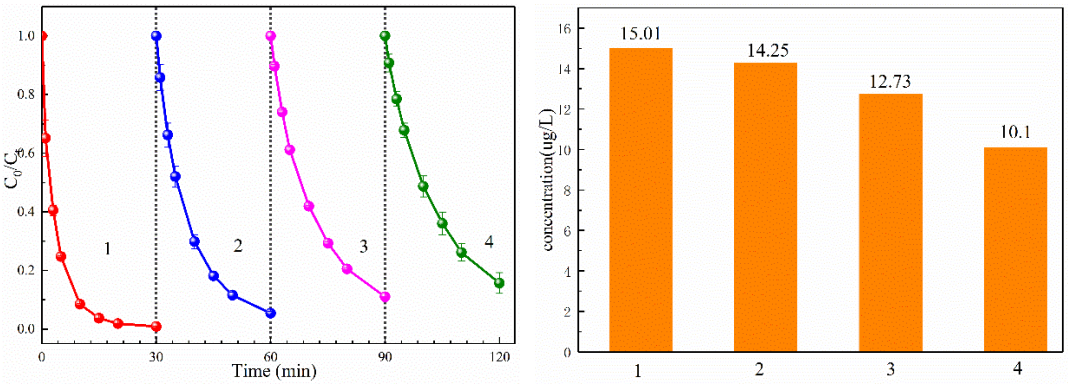


Table S1 Determination parameters of pollutants by HPLC

Pollutant	Mobile phase	Flow Rate	Column temperature	Detection wavelength
Sulfadimethoxine	Water,80%+ Acetonitrile,20%	1 mL/min	30℃	270nm
Sulfamethoxazole	Water, 60%(Acetic acid,0.5%)+ Acetonitrile,40%	0.7mL/min	30℃	264nm
Carbamazepine	Water,40%+ Acetonitrile,60%	0.8mL/min	30℃	286nm
Phenol	Water,50%+ Methanol,50%	0.8mL/min	30℃	230nm
Atrazine	Water,30%+ Methanol 70%	1mL/min	30℃	264nm
Benzoic acid	Water,60%(Phosphoric acid 0.5%)+ Acetonitrile 40%	1mL/min	30℃	230nm

Table S2 Fe-C, Fe-C-N(D), Fe-C-N(M) content distribution of each element (%).

	C(at. %)	N(at. %)	O(at. %)	Fe(at. %)
Fe-C	95.63	1	3.13	0.25
Fe-C-N(D)	93.66	2.56	3.37	0.41
Fe-C-N(M)	92.95	2.88	3.64	0.52

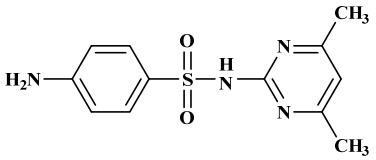
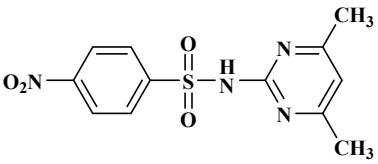
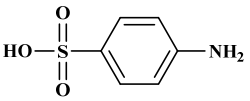
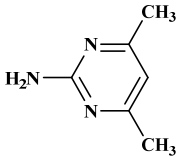
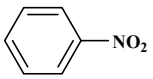
Table S3 Fe-C-N(D), Fe-C-N(M) content distribution of element (%).

	Pyridinic-N	Pyrrolic-N	Oxide-N	Graphitic-N	Fe-Nx
Fe-C-N(D)	0.49	0.35	0.40	1.15	0.17
Fe-C-N(M)	0.41	0.35	0.54	1.39	0.19

Table S4 Element content un-used and used degradation (%).

	Pyridinic-N	Pyrrolic-N	Oxide-N	Graphitic-N	Fe-Nx
Un-used	0.41	0.35	0.54	1.39	0.19
Used	1.64	0.62	0.1	1.22	0.47

Table S5 Table of SME intermediates

Compound	Charge-massratio (m/z)	Chemical formula	structured
SMZ	278	$C_{12}H_{14}N_4O_2S$	
P1	308	$C_{12}H_{12}N_4O_4S$	
P2	173	$C_6H_7NO_3S$	
P3	123	$C_6H_9N_3$	
P4	123	$C_6H_5NO_2$	
P5	110	C_6H_6O	