

Supplementary Materials

Synthesis of Fe-Modified g-C₃N₄ Nanorod Bunches for the Efficient Photocatalytic Degradation of Oxytetracycline

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Table S1. Iron content of FCNBs.

Sample	Fe (mas.%) from ICP-OES
FCNBs	0.6

Table S2. Element content (wt.%) from XPS.

Photocatalyst	C	N	O	Fe
g-C ₃ N ₄	40.76	55.82	3.42	-
FCNBs	40.10	52.57	6.47	0.66

Table S3. Specific surface area and pore parameter information of g-C₃N₄ and FCNBs.

Photocatalyst	BET surface area (m ² ·g ⁻¹)	Pore volume (cm ³ ·g ⁻¹)	Pore diameter (nm)
g-C ₃ N ₄	73.731	0.718	3.934
FCNBs	56.860	0.514	3.714

Table S4. Comparison of photocatalytic performance of photocatalysts based on g-C₃N₄ for degradation of OTC.

Photocatalyst	Catalyst (mg)	Degradant (mg·L ⁻¹)	Efficiency (%)	K value (min ⁻¹)	Light source	Ref.
MIL-53Fe@g-C ₃ N ₄	50	40 (100 mL) OTC	67 (60 min)	0.0178	300 W (halogen lamp)	[35]
CVC-2	100	20 (100 mL) OTC	80.5 (80 min)	0.014	40 W white LED	[36]
BPC(5%)/g-C ₃ N ₄	50	10 (50 mL) OTC	84 (150 min)	0.00884	300 W (Xe lamp)	[37]
ZnO/g-C ₃ N ₄	20	10 (100 mL) OTC	63.5 (50 min)	-	300 W (Xe lamp)	[38]
FCNBs	30	10 (100 mL) OTC	82.5 (60 min)	0.0205	300 W (Xe lamp)	This work



Figure S1. SEM image of FCNBs.

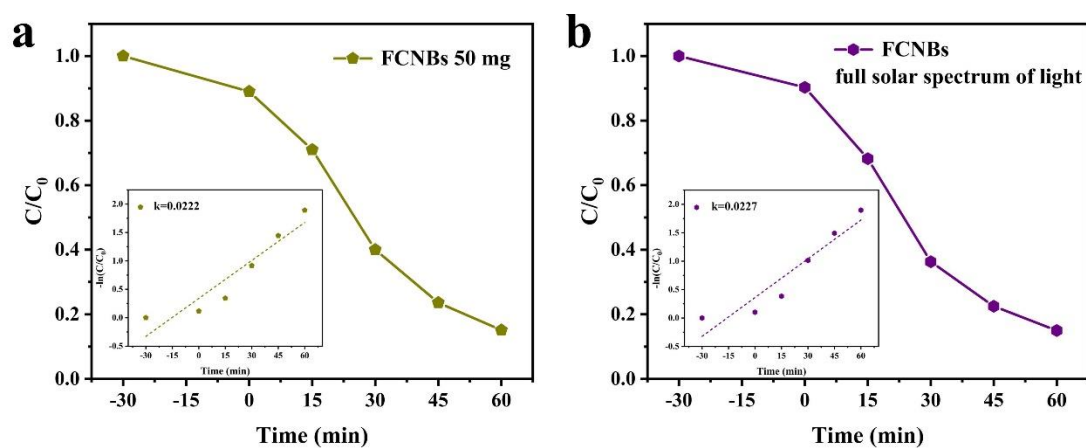


Figure S2. Photocatalytic activities of (a) 50 mg FCNBs, (b) 30 mg FCNBs in full solar spectrum of light.

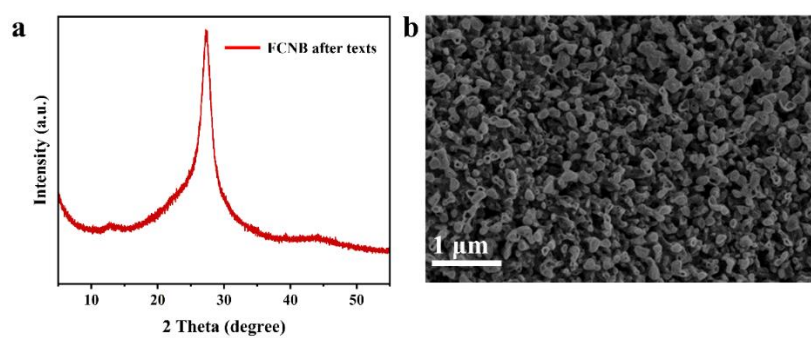


Figure S3. (a) XRD image and (b) SEM image of FCNBs after photocatalytic activity measurement.

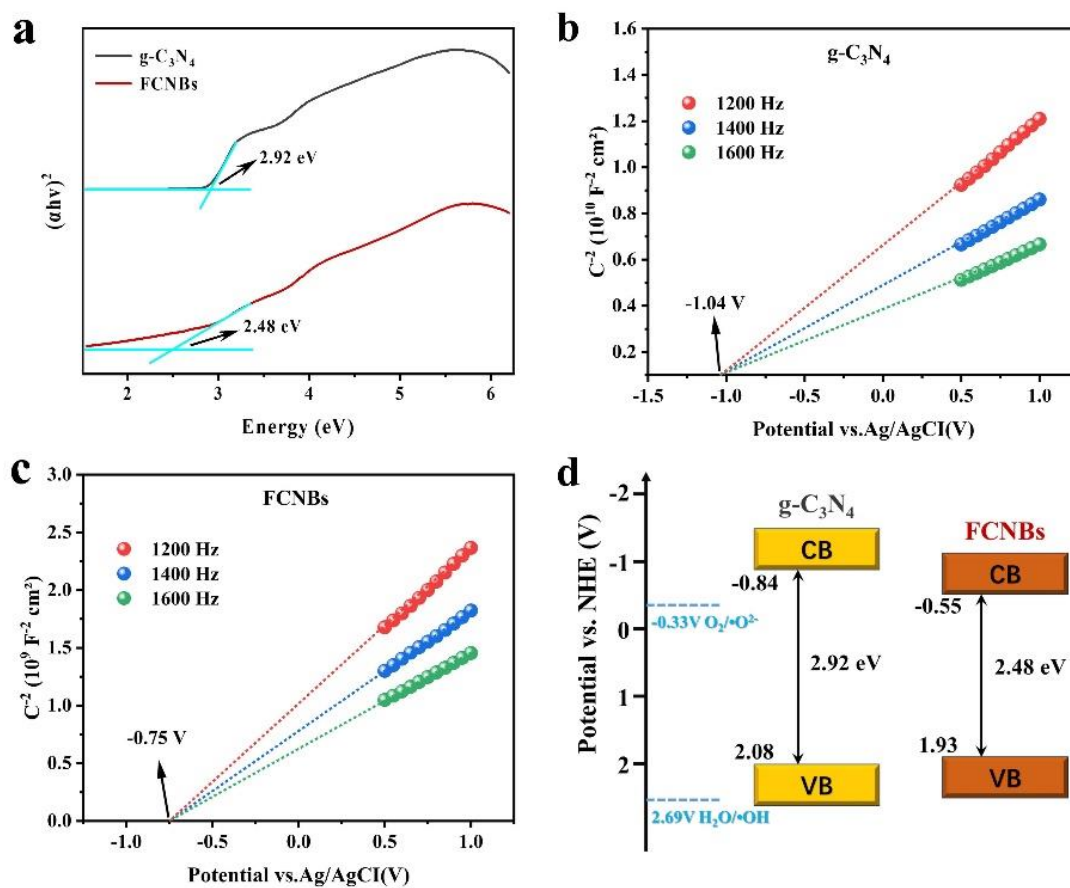


Figure S4. (a) Tauc curves of FCNBs and g-C₃N₄, Mott-Schottky curves of (b) g-C₃N₄ and (c) FCNBs, (d) the band structure of g-C₃N₄ and FCNBs.

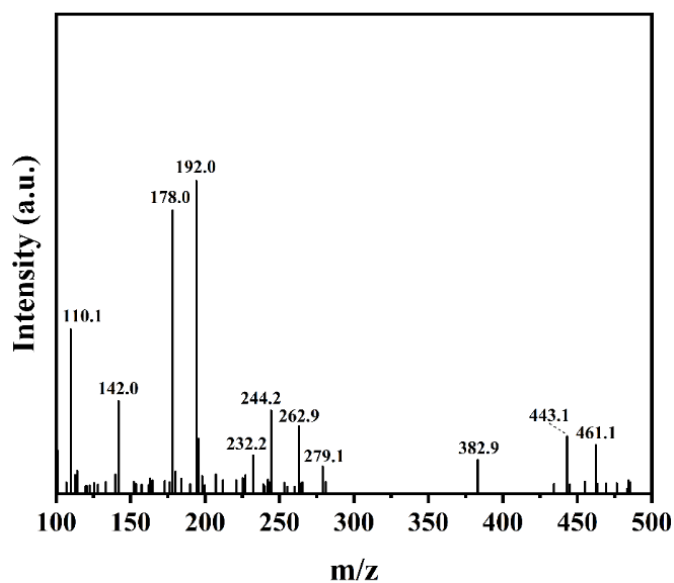
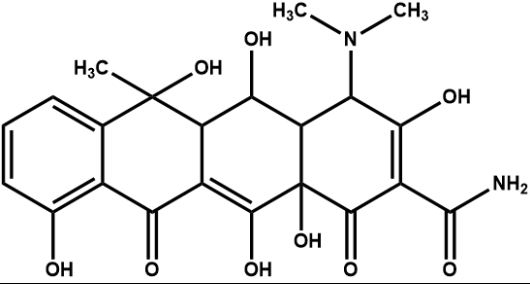
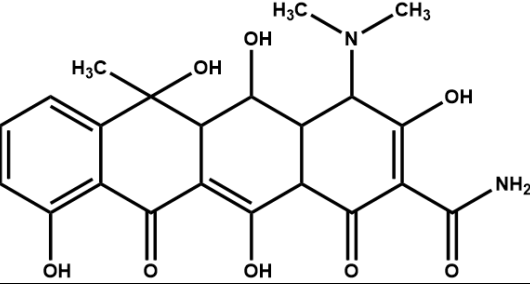
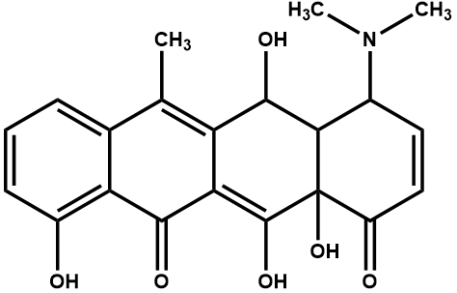
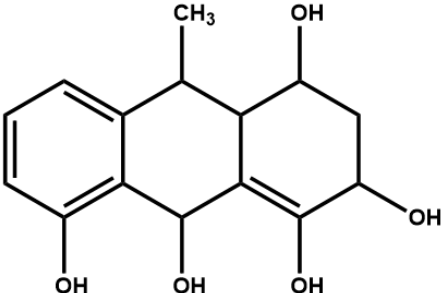
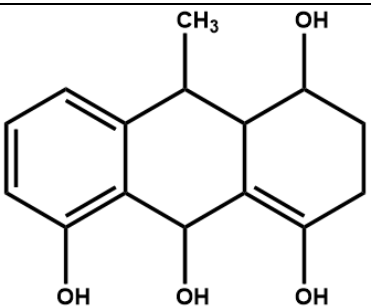
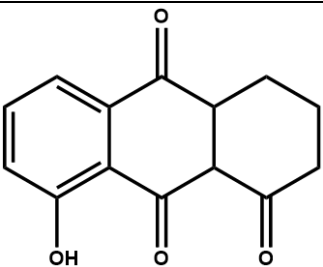


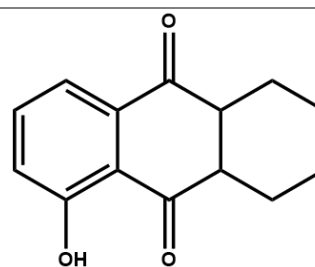
Figure S5. MS spectra of OTC solution after 60 min degradation.

Table S5. Structural information of the possible intermediates.

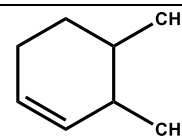
Compounds	Formula	m/z	Proposed structure
OTC	C ₂₂ H ₂₄ N ₂ O ₉	461.1	
P1	C ₂₂ H ₂₂ N ₂ O ₈	443.1	
P2	C ₂₁ H ₂₁ NO ₆	382.9	
P3	C ₁₅ H ₁₈ O ₅	279.1	
P4	C ₁₅ H ₁₈ O ₄	262.9	
P5	C ₁₄ H ₁₂ O ₄	244.2	

P6 $C_{14}H_{16}O_3$

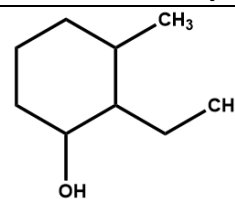
232.2

**P7** C_8H_{14}

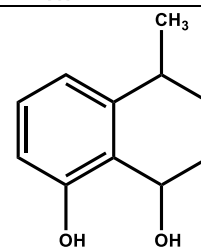
110.1

**P8** $C_9H_{18}O$

142.0

**P9** $C_{11}H_{14}O_2$

178.0

**P10** $C_{12}H_{16}O_2$

192.0

