

Photocatalytic CO₂ Reduction coupled with Alcohol Oxidation over porous carbon nitride

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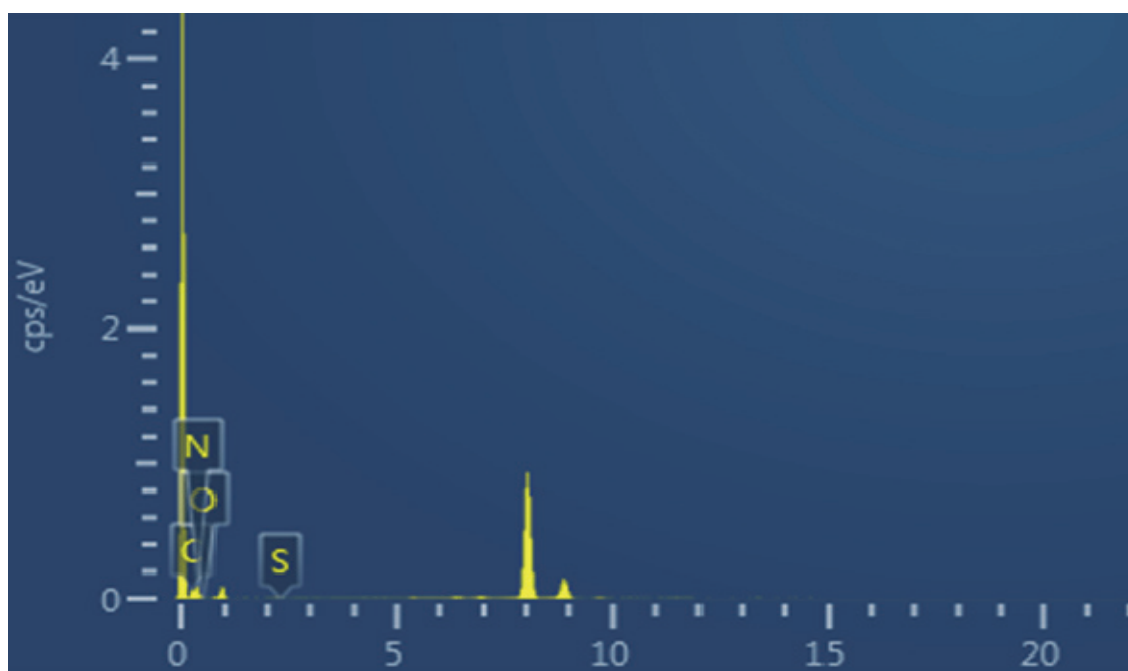


Figure S1. EDX of as-synthesized CN-S24 sample.

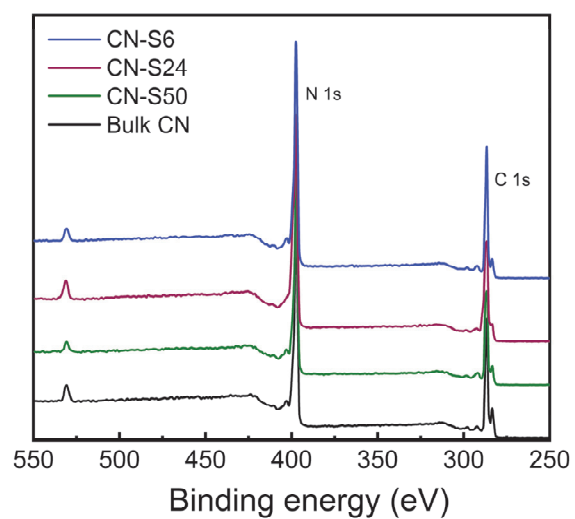
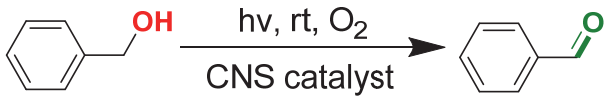


Figure S2. XPS survey spectra of as-synthesized CN, CN-S50, CN-S24, and CN-S6 samples.

Table S1. photocatalytic activities over as-synthesized CNs samples for alcohol oxidation.

				
Catalysts	Atmosphere	Solvent	Time (h)	Yield (%)
Bulk CN	O ₂	MeCN	4	32
CN-S50	O ₂	MeCN	4	36
CN-S24	O ₂	MeCN	4	63
CN-S6	O ₂	MeCN	4	53
CN-S24	O ₂	MeCN	8	93
CN-S24	O ₂	H ₂ O	8	62
CN-S24	O ₂	EA	8	76
CN-S24	Ar	MeCN	8	65

Reaction conditions: 0.1 mmol benzyl alcohol, 5 mL of CH₃CN, 20 mg catalyst, room temperature. The yields were determined by GC–MS using toluene as external standard.

Table S2. Photocatalytic activities over reported carbon nitride-based samples for CO₂ reduction.

Catalysts	Light source	Yield ($\mu\text{mmol h}^{-1} \text{g}^{-1}$)	Ref.
CNBB-3	simulated sunlight irradiation	6.09	S1
CN	300W iodine tungsten lamp	3.45	S2
H-g-C ₃ N ₄ /C-6	Xe arc lamp (500W)	2.6	S3
P-g-C ₃ N ₄	300 W xenon lamp	2.37	S4
GCN510	300 W xenon lamp	4.18	33
CN-M-0.01	300 W Xe lamp AM 1.5	~10.1	S5
CN	300 W Xe lamp $\lambda > 420 \text{ nm}$	2.6	S6
OCCN0.25	ultraviolet lamp	~8.75	S7
g-C ₃ N ₄	300 W Xe lamp	0.32	S8
Nv-rich-CN	300 W Xe lamp $\lambda > 300 \text{ nm}$	6.61	S9
SFO-CN	300W iodine tungsten lamp	7.56	S2
CN-ATZ-NaK (Na K doping)	White LED light (50 W $\lambda > 420 \text{ nm}$)	14	17
U-CAN (Au loading)	300 W Xe lamp $\lambda > 420 \text{ nm}$	8.68	S6
ZPUCN-3 (Zr loading)	300 W Xe lamp $\lambda > 400 \text{ nm}$	5.05	S10
CN-S24	White LED light (15 W $\lambda > 420 \text{ nm}$)	6.5	This work

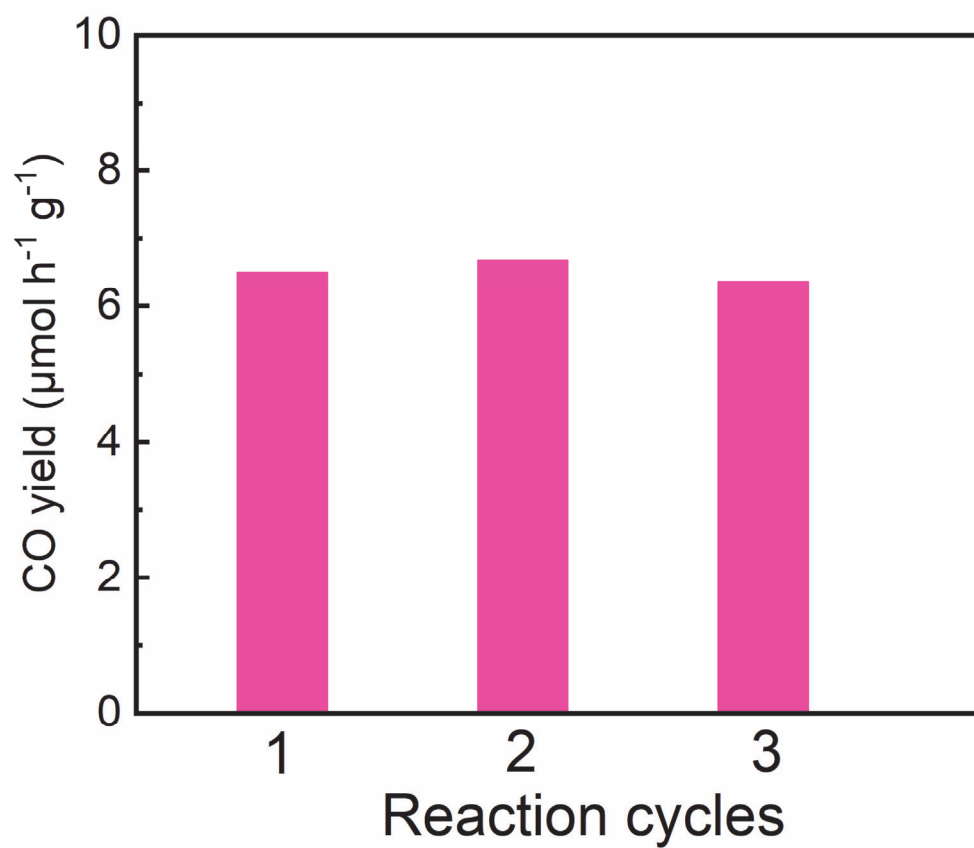


Figure S3. Photocatalytic CO yields on CN-S24 sample for different cycles.

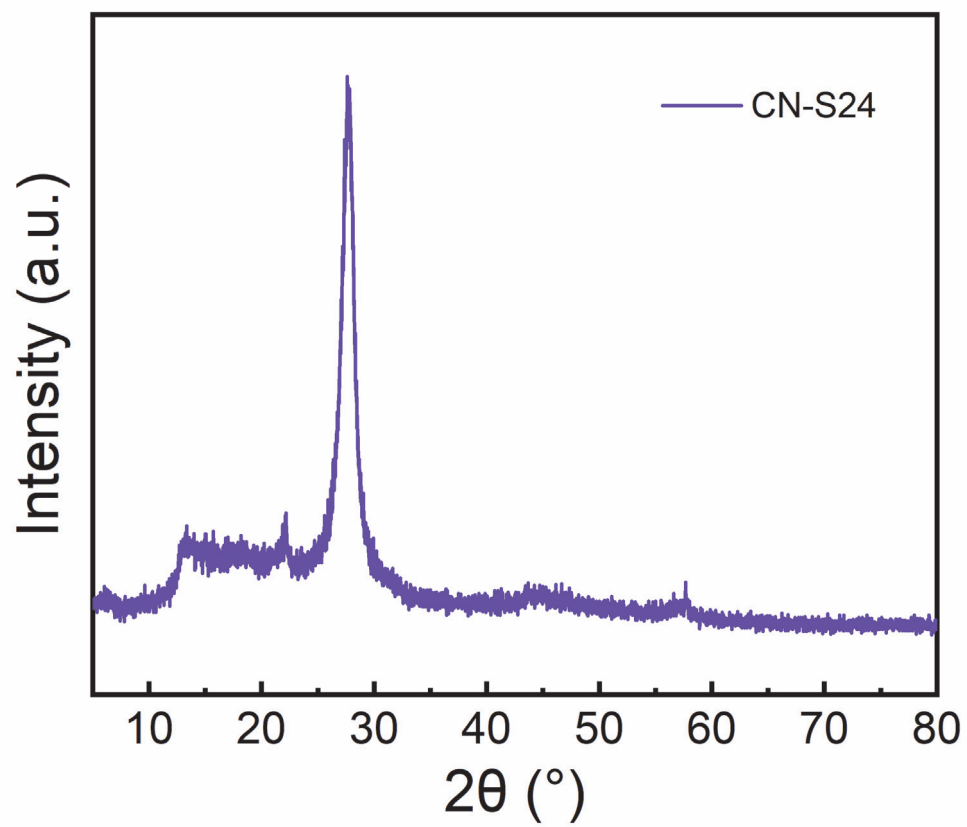


Figure S4. XRD pattern of CN-S24 sample after reaction.

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