catalysts

MDPI

Supporting Information

Boosting the Photoreactivity of g-C_3N_4 towards CO_2 Reduction by Polymerization of Dicyandiamide in Ammonium Chloride

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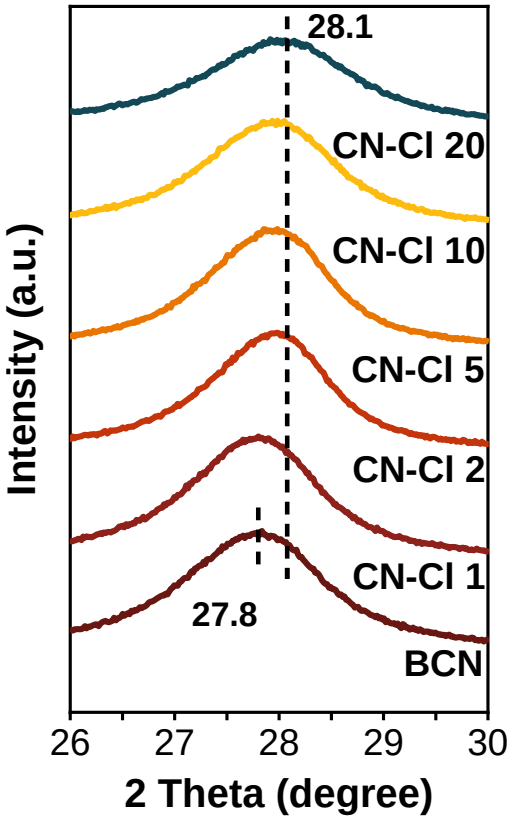

Figure S1. XRD patterns of the as-prepared CN samples in diffraction angles of 26° to 30°.

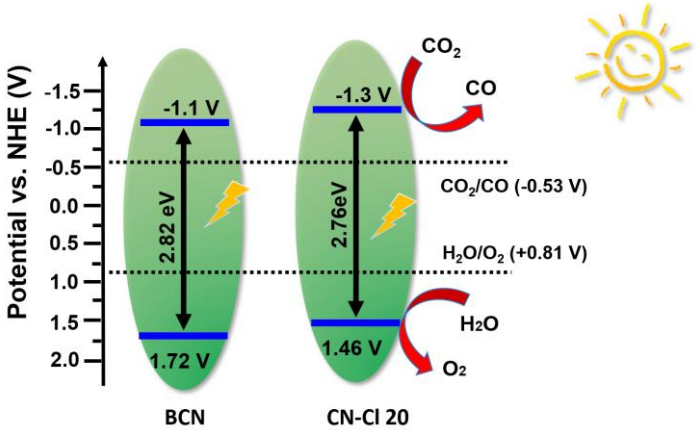

Figure S2. Electronic band structures of NCB and CN-Cl 20 sample.

Table S1. Yields of the products for the synthesis of carbon nitride photocatalysts.

Sample	BCN	CN-Cl 1	CN-Cl 2	CN-Cl 5	CN-Cl 10	CN-Cl 20
Product weight (g)	1.72	1.83	1.92	1.87	1.95	1.89
Yield (%)	43	45	48	46	48	47

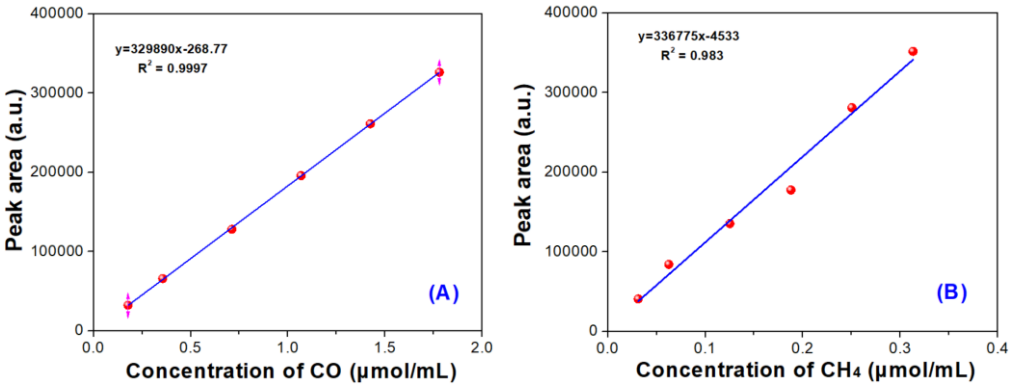

Figure S3. Working curves for CO (A) and CH_4 (B), respectively.

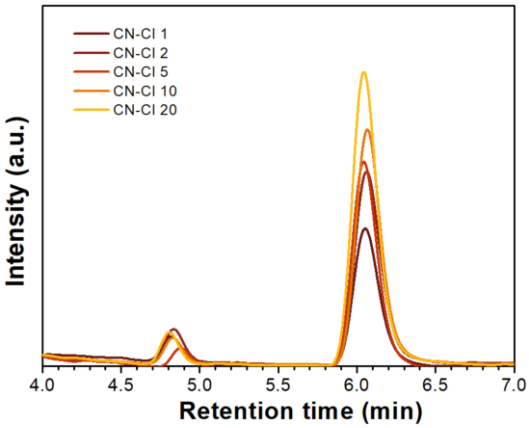

Figure S4. Gas chromatograph of photocatalytic CO_2 reduction..

Table S2. Comparison of the reaction rate for photocatalytic CO_2 reduction.

Photocatalysts	S_{CO}[a]	R_{CO} (μmol h^{-1} g^{-1})	S_{CH4}[b]	R_{CH4} (μmol h^{-1} g^{-1})
BCN	61446	16.5	11235	5.13
CN-Cl 1	73362	19.7	13094	5.99
CN-Cl 2	90122	24.2	12788	5.85
CN-Cl 5	126243	33.9	11891	5.44
CN-Cl 10	145981	39.2	14711	6.73
CN-Cl 20	188438	50.6	14321	6.55

[a] Peak area of the detected CO; [b] Peak area of the detected CH_4.

Note: Calculation of the production of CO and CH4 are based on the following equations :

$$CO\ production\ rate = \frac{(\frac{CO\ peak\ area}{slope})}{Reaction\ time * Catalyst\ mass} \quad \text{(equation S1)}$$

$$CH_4\ production\ rate = \frac{(\frac{CH_4\ peak\ area}{slope})}{Reaction\ time * Catalyst\ mass} \quad \text{(equation S2)}$$