

SUPPLEMENTARY INFORMATION

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Electronic Supplementary Information for

**Photocatalytic performance and mechanism insights of S-scheme g-  
C<sub>3</sub>N<sub>4</sub>/Bi<sub>2</sub>MoO<sub>6</sub> heterostructure in phenol degradation and hydrogen  
evolution reaction under visible light**

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Fig.S2 survey XPS curve of BMO-200 and 100% g-CN/BMO-200

Fig.S3. (a) UV–Vis DRS spectra of pristine BMO, BMO-200, X% g-CN/BMO-200 and pure g-CN, (b) UV–Vis DRS spectra 100% g-CN/BMO with different calcination temperature, (c) the  $E_g$  of pure g-CN and BMO-200.

Fig.S4. Cycling runs of 100% g-CN/BMO-200 (b) SEM images of 100% g-CN/BMO-200 before and after used

Table S1. Lifetimes and relative intensities of 100% g-CN/BMO-200, g-CN, BMO-200, Pristine BMO

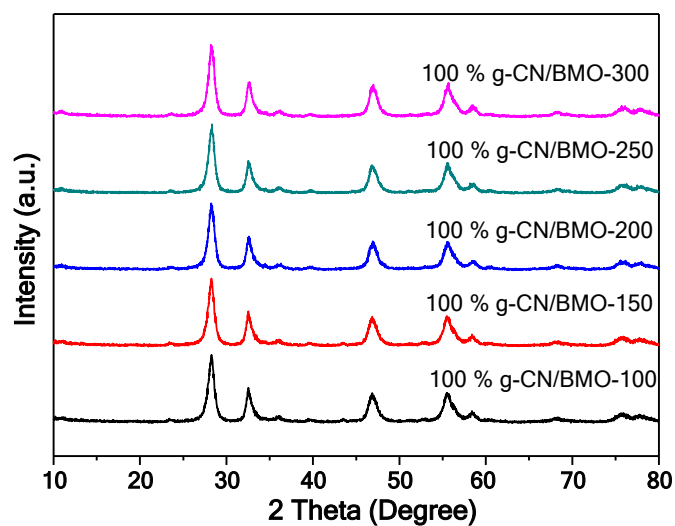


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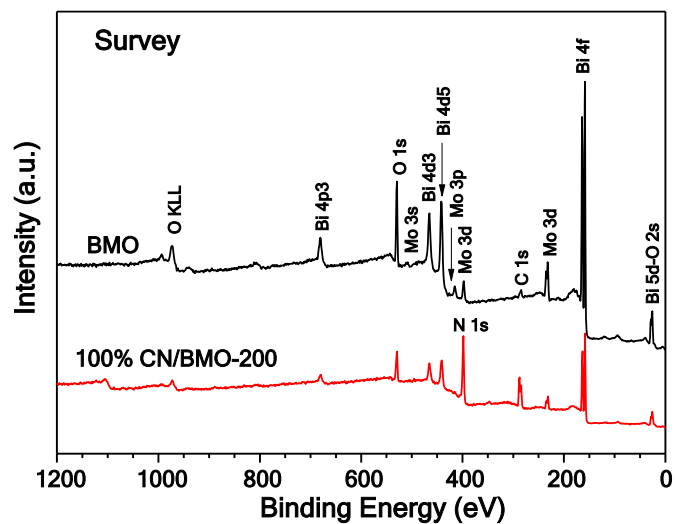
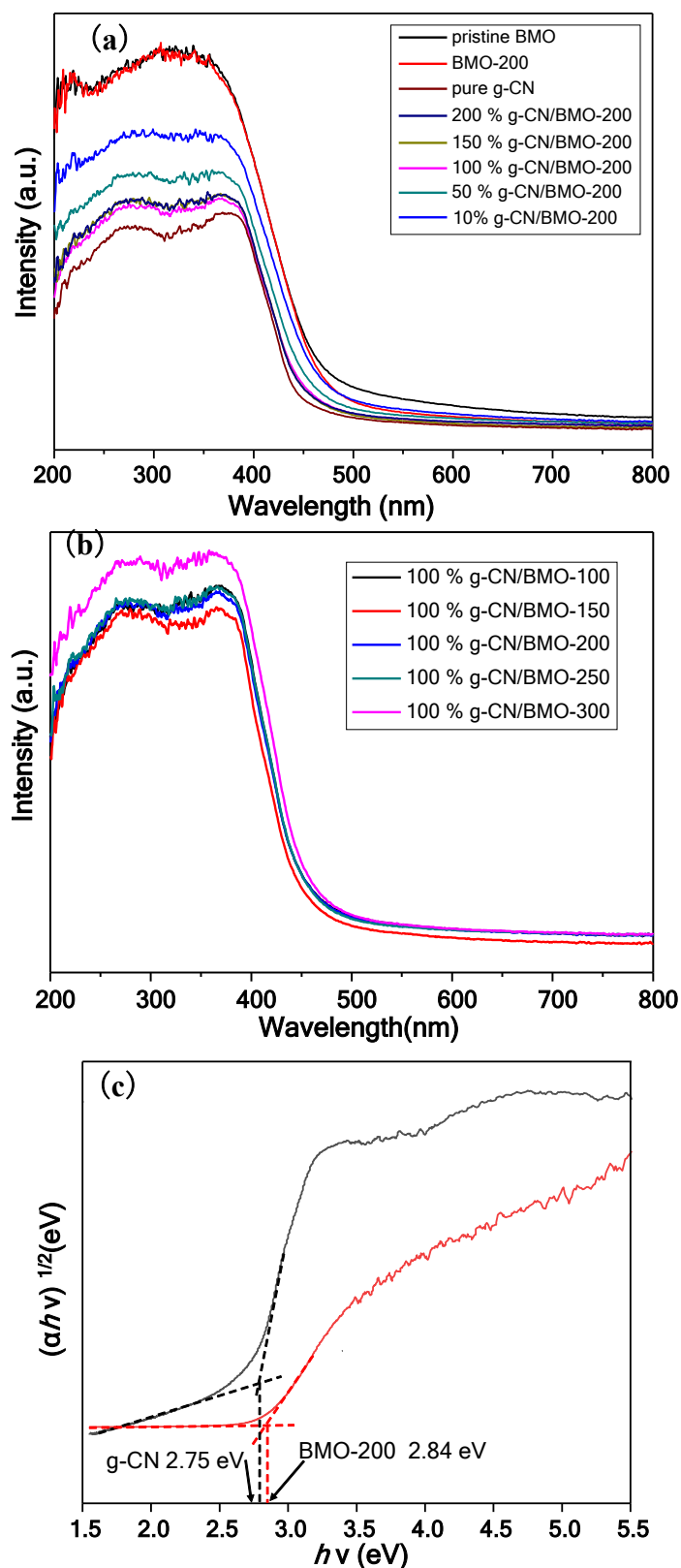
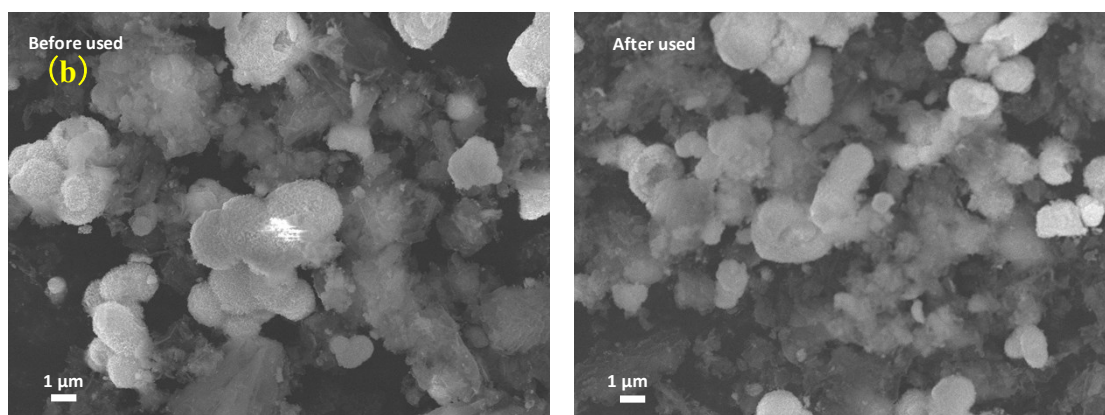
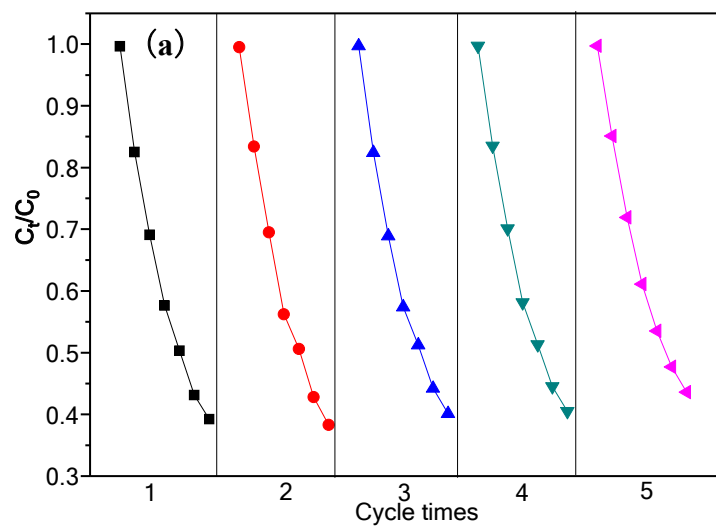


Fig.S2 survey XPS curve of BMO-200 and 100% g-CN/BMO-200



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**Fig.S4. (a) Cycling runs of 100% g-CN/BMO-200 (b) SEM images of 100% g-CN/BMO-200 before and after used**

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**Table S1. Lifetimes and relative intensities of 100% g-CN/BMO-200, g-CN, BMO-200, Pristine BMO**

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| Sample            | $\tau_1$ (ns) | intensity | $\tau_2$ (ns) | intensity | $\tau_3$ (ns) | intensity |
|-------------------|---------------|-----------|---------------|-----------|---------------|-----------|
| 100% g-CN/BMO-200 | 1.79          | 51.21     | 6.54          | 48.79     |               |           |
| g-CN              | 1.56          | 50.48     | 6.08          | 0.17      |               |           |
| BMO-200           | 0.20          | 56.93     | 1.23          | 28.05     | 5.65          | 15.01     |
| Pristine BMO      | 0.08          | 57.87     | 0.63          | 37.19     | 3.38          | 4.94      |

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