

## Supplementary Materials

### **Study on the effect and mechanism of Ag and Bi<sub>2</sub>MoO<sub>6</sub> modification on the CO<sub>2</sub> photo-thermal reduction performance of g-C<sub>3</sub>N<sub>4</sub> catalysts with Localized Surface Plasmon Resonance**

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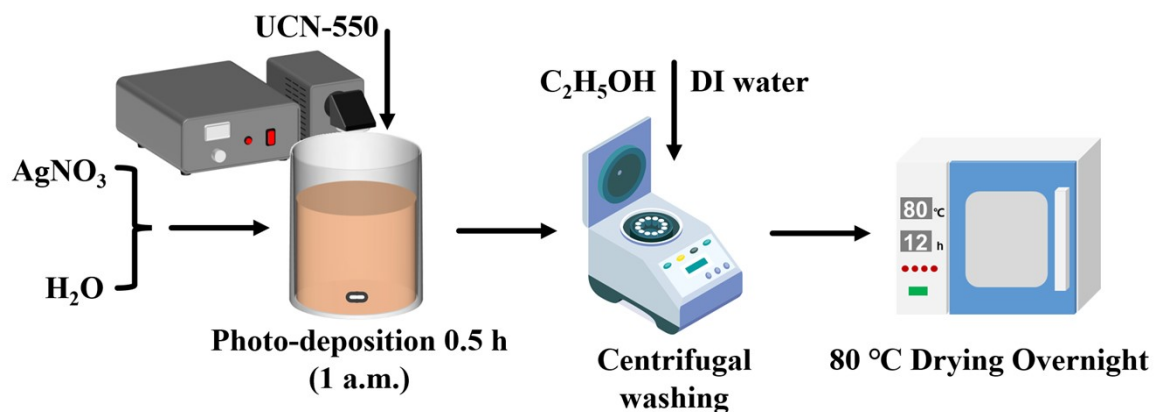


Figure S1 Preparation process of Ag/g-C<sub>3</sub>N<sub>4</sub> by photo-deposition synthesis method

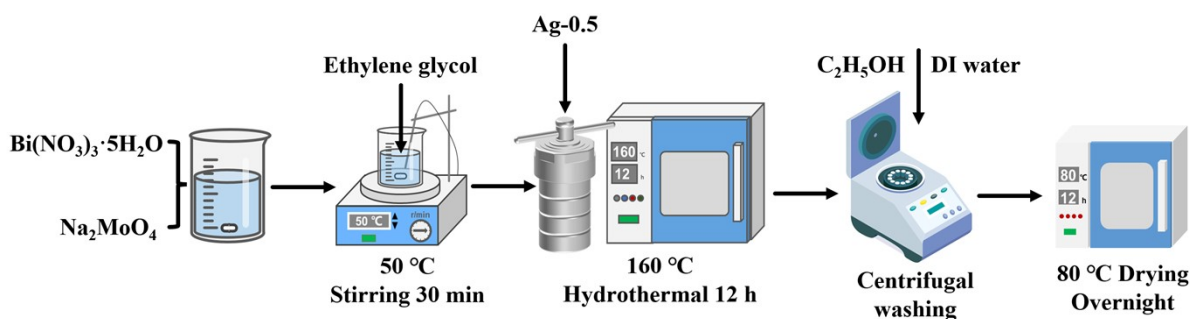


Figure S2 Preparation process of Ag&BMO/g-C<sub>3</sub>N<sub>4</sub> by solvent thermal synthesis method



Figure S3 Schematic diagram of the photothermal coupling catalyst performance evaluation system test

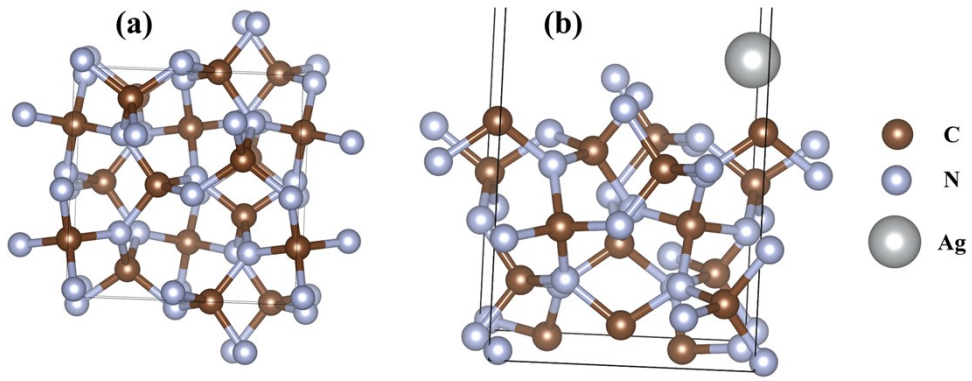


Figure S4 Site conformation of (a)  $g\text{-C}_3\text{N}_4$  and (b)  $\text{Ag}/g\text{-C}_3\text{N}_4$

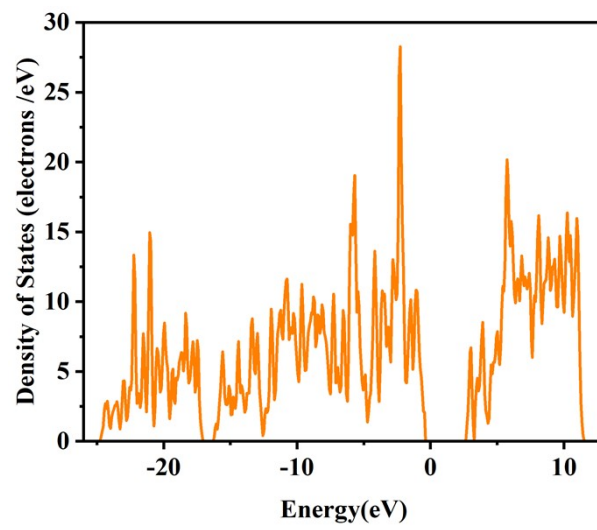


Figure S5 Density of States of  $g\text{-C}_3\text{N}_4$  catalyst

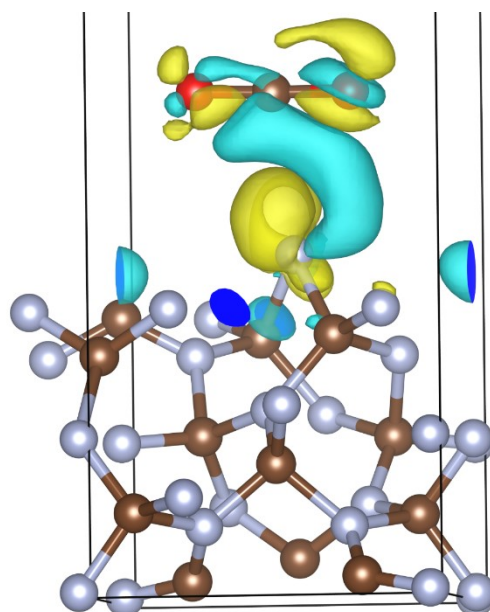


Figure S6 Difference Charge Density of g-C<sub>3</sub>N<sub>4</sub> catalyst before and after CO<sub>2</sub> absorption

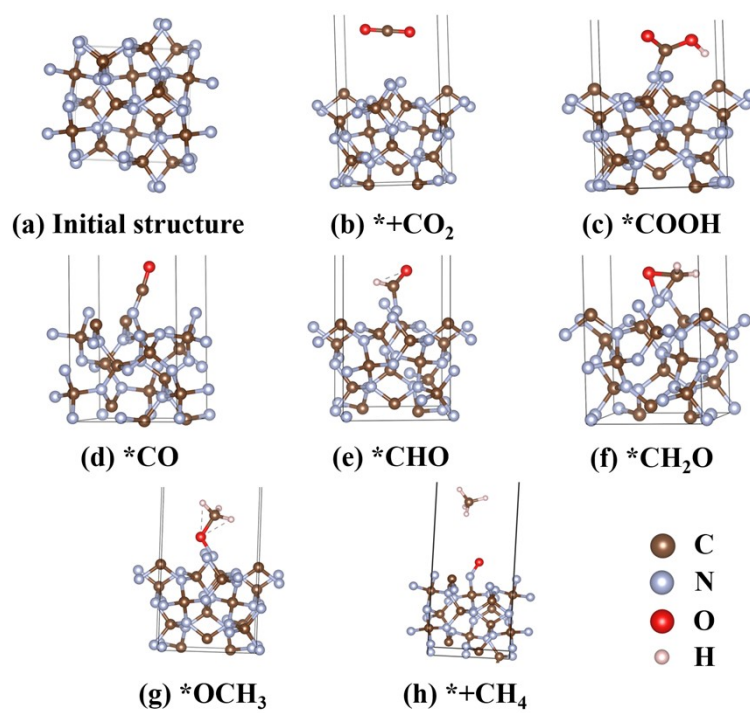


Figure S7 CO<sub>2</sub> Reduction process of g-C<sub>3</sub>N<sub>4</sub> catalyst

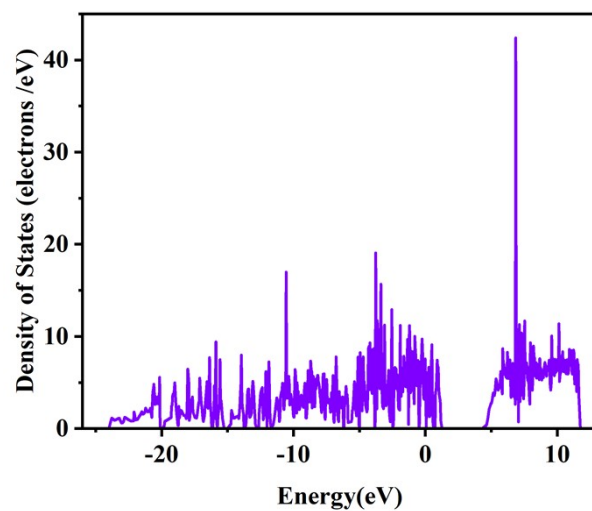


Figure S8 Density of States of Ag/g-C<sub>3</sub>N<sub>4</sub> catalyst

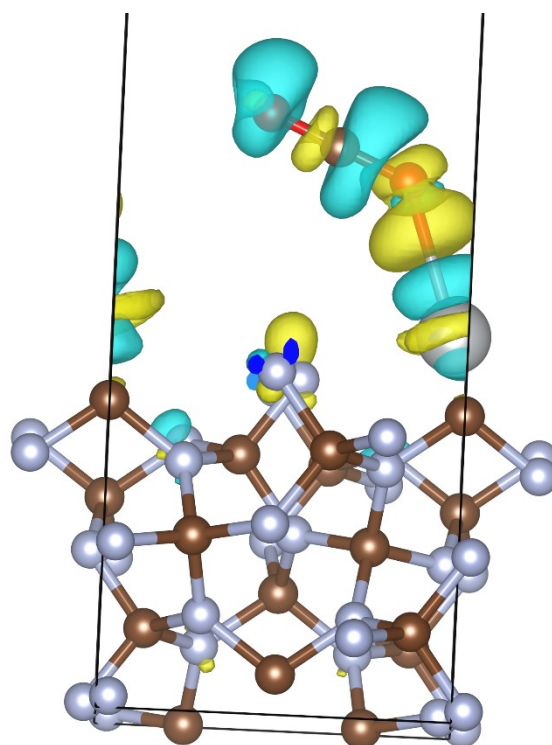


Figure S9 Difference Charge Density of Ag/g-C<sub>3</sub>N<sub>4</sub> catalyst before and after CO<sub>2</sub> absorption

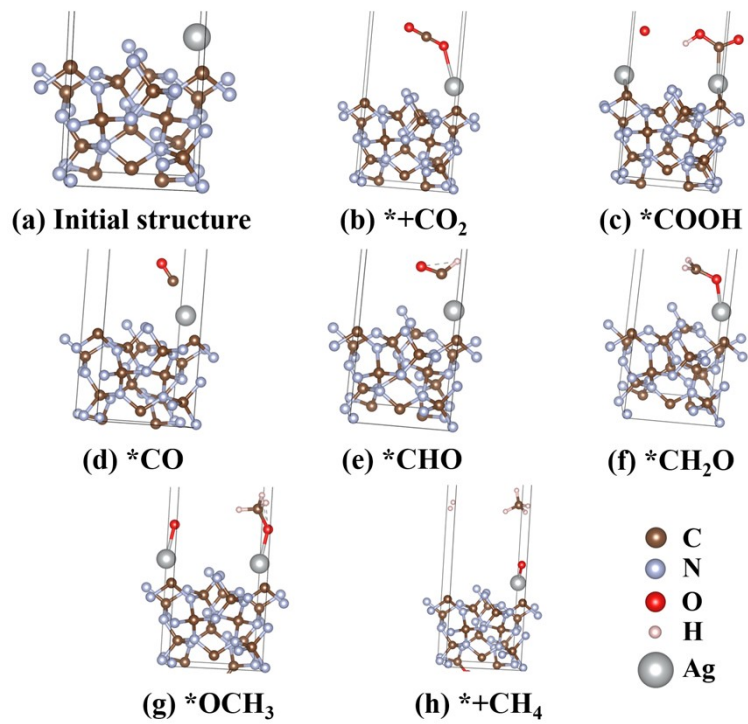


Figure S10  $\text{CO}_2$  Reduction process of Ag/g- $\text{C}_3\text{N}_4$  catalyst