

## Supporting information

### Visible light-driven photocatalyst of g-C<sub>3</sub>N<sub>4</sub>/m-Ag<sub>2</sub>Mo<sub>2</sub>O<sub>7</sub> composite: Synthesis, enhanced activity and photocatalytic mechanism

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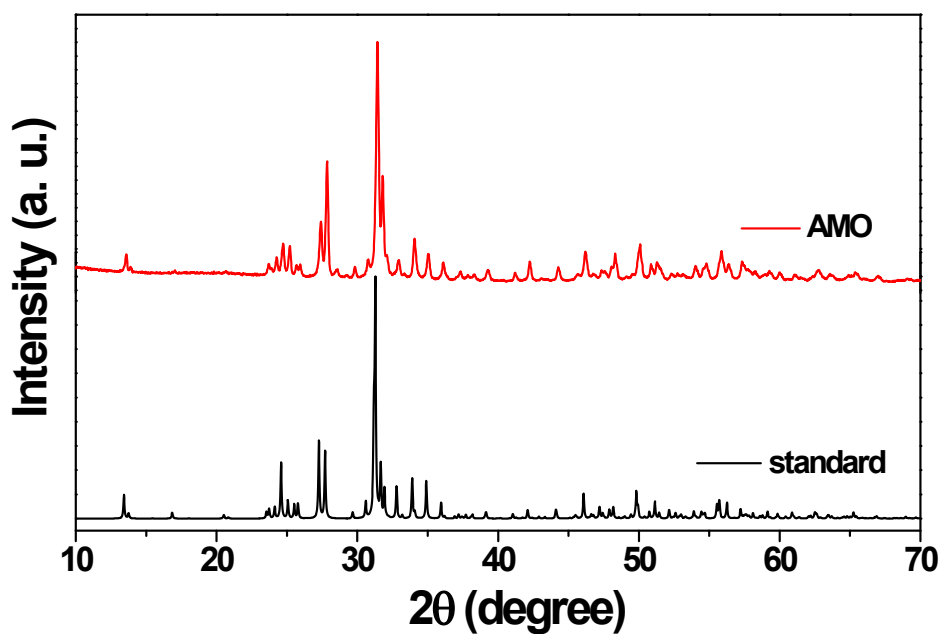
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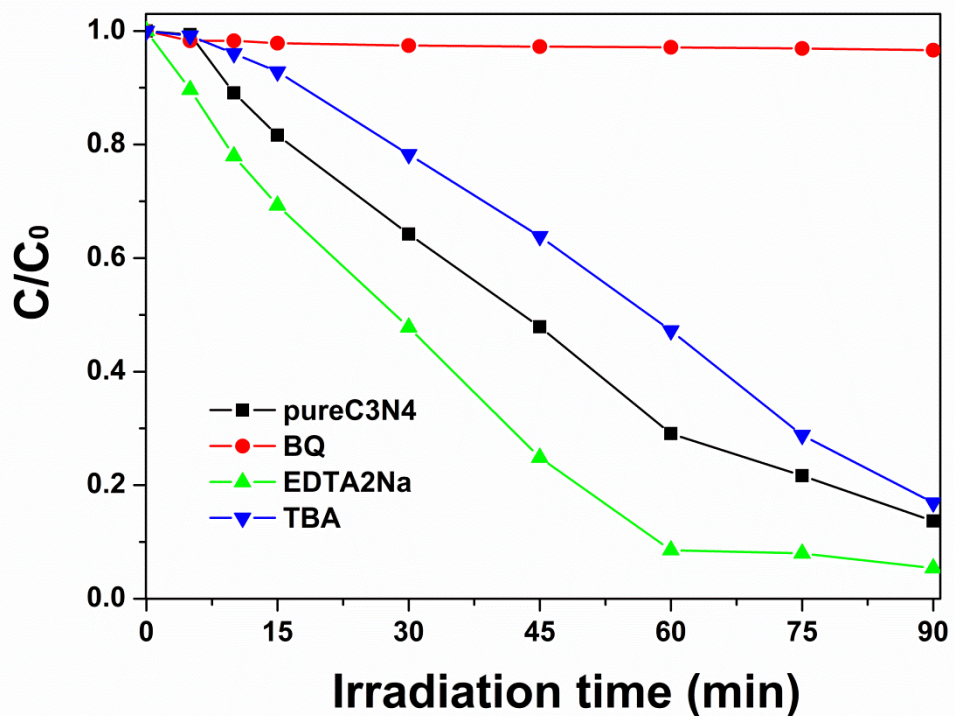
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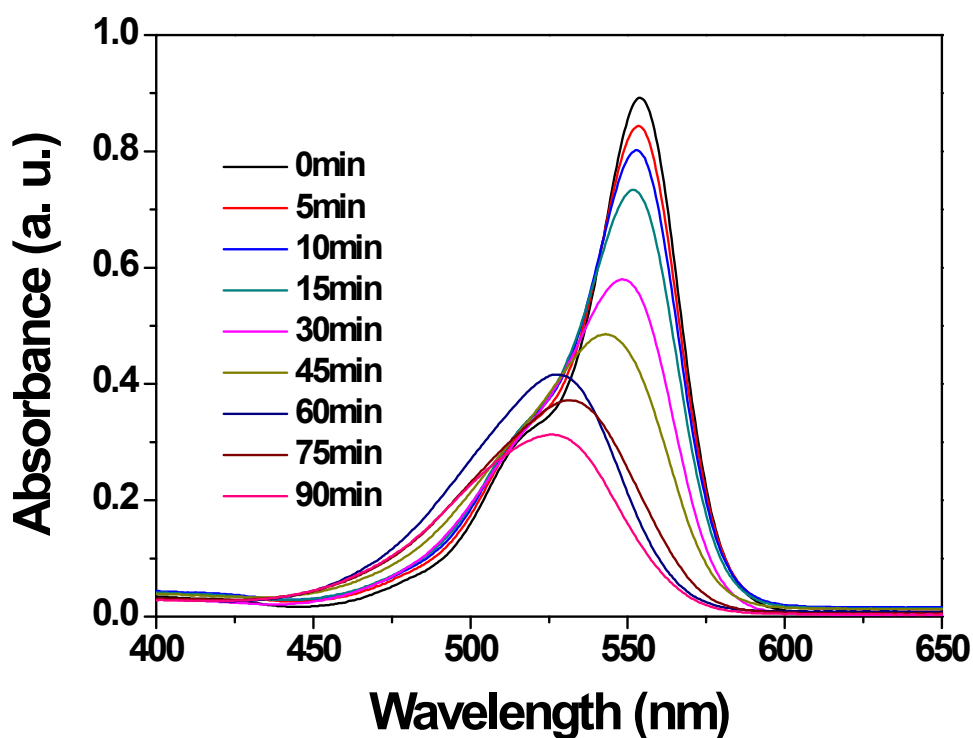


**Figure S1.** The XRD pattern of the as-prepared  $m\text{-Ag}_2\text{Mo}_2\text{O}_7$  and the standard XRD pattern of  $m\text{-Ag}_2\text{Mo}_2\text{O}_7$ .



**Figure S2.** Photocatalytic degradation of RhB over pure  $g\text{-C}_3\text{N}_4$  and without the addition of BQ, EDTA and TBA.

As shown in Figure S2, the superoxide radicals ( $\cdot\text{O}_2^-$ ) are the main active species in the photocatalytic degradation of RhB over the pure  $\text{g-C}_3\text{N}_4$  catalyst. EDTA2Na is a kind of hole-scavenger. When the EDTA2Na was added, more photo-generated holes were trapped and the separation efficiency of the electron-hole pairs was thus enhanced. More photo-induced electrons react with  $\text{O}_2$  and generate the active species of  $\cdot\text{O}_2^-$ . Therefore, the photocatalytic activity was enhanced.



**Figure S3.** UV-vis spectral changes of RhB over the photocatalyst of 6CNAMO.

As shown in Figure S3, an obvious decrease of the absorption was observed under the visible light irradiation on the aqueous RhB/6CNAMO suspension. Meanwhile, the spectral maximum shifted gradually toward the blue region, which can be attributed to the de-ethylation of the fully  $N,N,N',N'$ -tetraethylated rhodamine molecule in a step manner. The hypsochromic shift in the presence of 6CNAMO from 553nm to 526nm indicates the de-ethylation of tetraethylated rhodamine to  $N$ -ethylated rhodamine.