Supporting Information

A Simple and Efficient Strategy for Chemically Tailored g-C₃N₄ Photocatalyst

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Figure S1. TEM image of bulk g-C$_3$N$_4$.

Figure S2. Dispersion photos of tailored g-C$_3$N$_4$ with different ratio of NH$_3$/H$_2$O$_2$ in aqueous media indicate their ultra-small sizes, without detectable aggregation after standing for even more than two weeks.
**Figure S3.** Zeta potential of CNPSs dispersed in water and the well dispersed CNPSs were negatively charged with zeta potential of about -47.1 mV.

**Figure S4.** Zeta potential of CNQDs dispersed in water and the well dispersed CNQDs were negatively charged with zeta potential of about -52.1 mV.
Figure S5. Diffuse reflectance absorption spectra of bulk g-C$_3$N$_4$ and tailored g-C$_3$N$_4$

Figure S6 XRD pattern of tailored g-C$_3$N$_4$ by treatment of different NH$_3$:H$_2$O$_2$ volume ratio.
Figure S7 Scheme of (a) triazines and (b) heptazines based connection in g-C$_3$N$_4$.

Table S1. The elemental composition of bulk g-C$_3$N$_4$

<table>
<thead>
<tr>
<th>Sample</th>
<th>C (%)</th>
<th>H (%)</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>g-C$_3$N$_4$</td>
<td>30.69</td>
<td>2.49</td>
<td>54.89</td>
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