Supporting information

Boosting the photogenerated charge separation of g-C₃N₄ by constructing Ni@Ni₂P cocatalyst with core-shell structure

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Fig. S1. Comparison of photocatalytic hydrogen evolution rate of Ni$_2$P@Ni/g-C$_3$N$_4$ photocatalysts with different phosphating time, triethanolamine as sacrificial electron donor under 300 W Xe lamp irradiation.

Fig. S2. XRD patterns of Ni$_2$P@Ni/g-C$_3$N$_4$ photocatalysts with different phosphating time.
Fig. S3. The stability of photocatalytic H$_2$ performance of 50P-Ni under visible light irradiation ($\lambda > 400$ nm).

Fig. S4. Nitrogen gas sorption isotherms and pore size distribution of g-C$_3$N$_4$, Ni/g-C$_3$N$_4$ and Ni@Ni$_2$P/g-C$_3$N$_4$ photocatalysts

**Table S1** The BET specific surface area of g-C$_3$N$_4$, Ni/g-C$_3$N$_4$ and Ni@Ni$_2$P/g-C$_3$N$_4$ photocatalysts

<table>
<thead>
<tr>
<th>Samples</th>
<th>g-C$_3$N$_4$</th>
<th>0P-Ni</th>
<th>10P-Ni</th>
<th>20P-Ni</th>
<th>50P-Ni</th>
<th>75P-Ni</th>
</tr>
</thead>
<tbody>
<tr>
<td>BET surface area (m$^2$/g)</td>
<td>13.51</td>
<td>23.77</td>
<td>10.19</td>
<td>10.43</td>
<td>7.72</td>
<td>15.69</td>
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</tbody>
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