

## **Supporting Information**

# **Construction of Chemically Bonded Interface of Organic/Inorganic g-C<sub>3</sub>N<sub>4</sub>/LDH Heterojunction for Z-Schematic Photocatalytic H<sub>2</sub> Generation**

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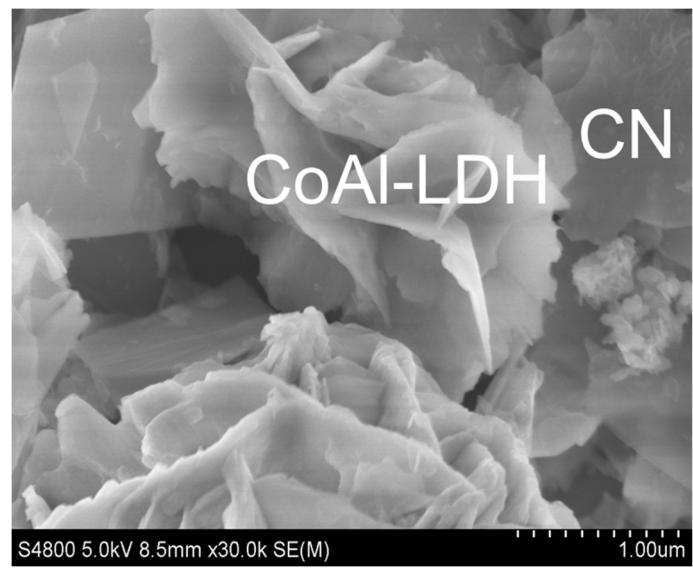
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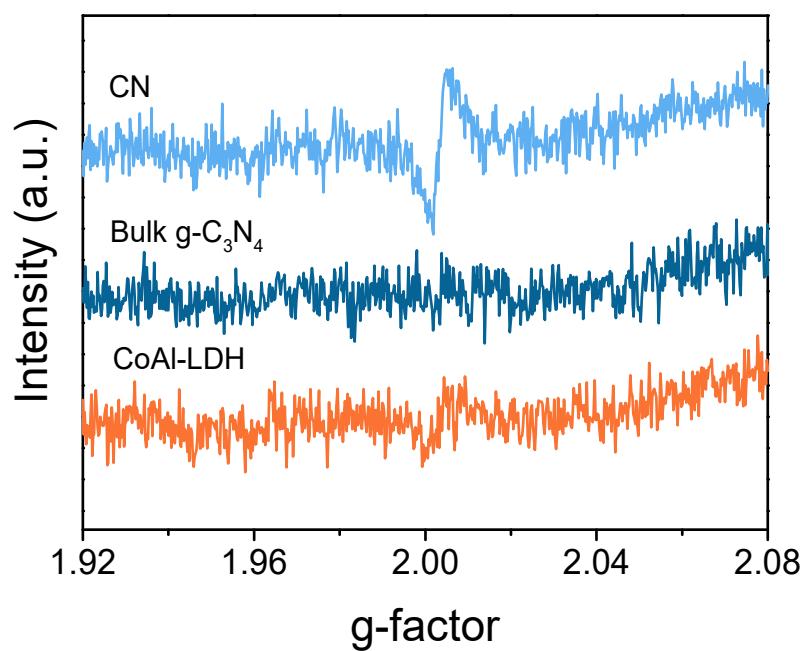
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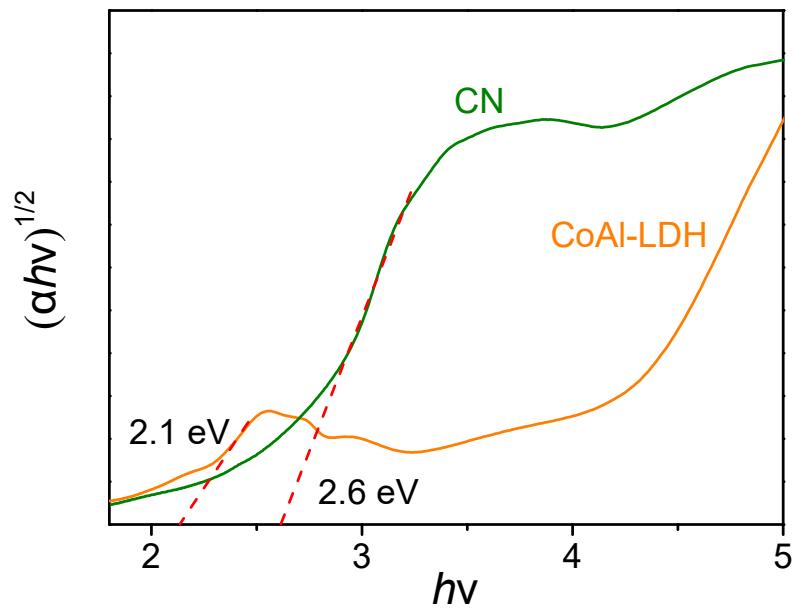
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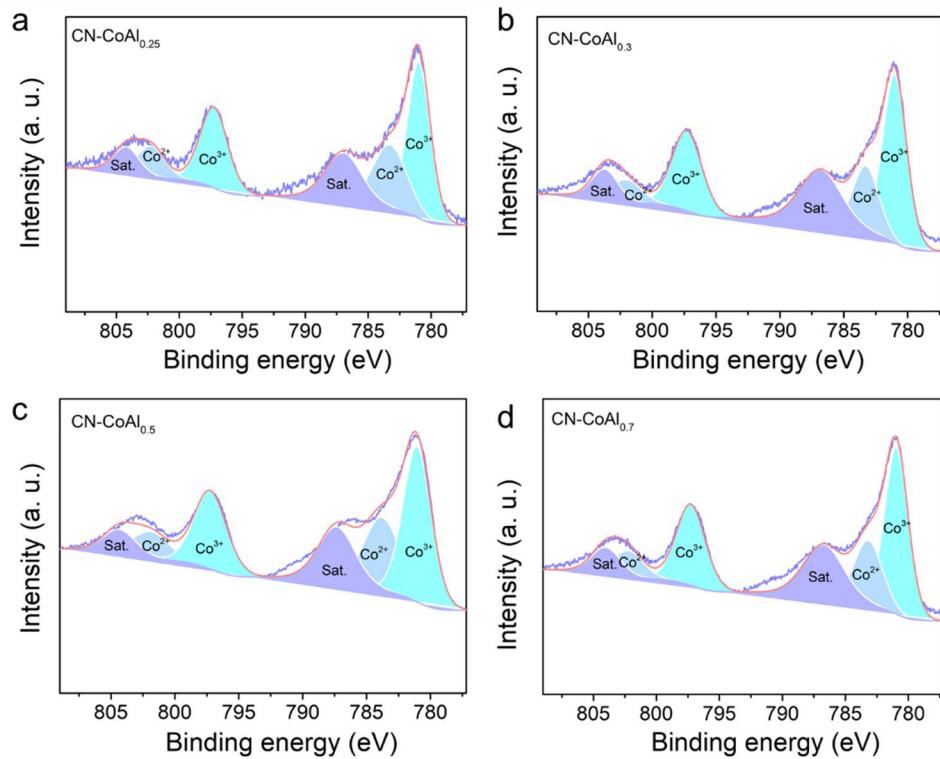
**Figure S1.** SEM image of the prepared CN-CoAl<sub>0.7</sub>.



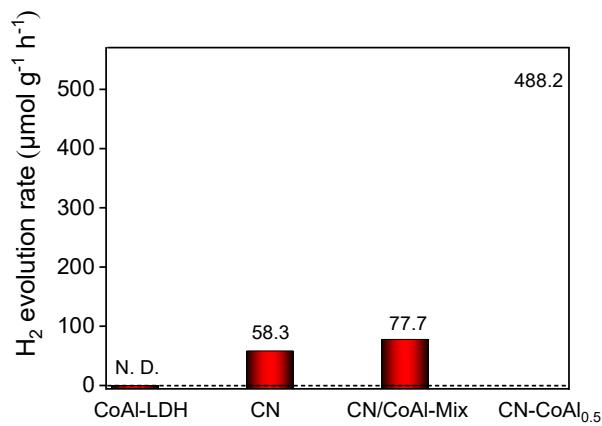
**Figure S2.** EPR spectra of bulk g-C<sub>3</sub>N<sub>4</sub>, CN and CoAl-LDH.



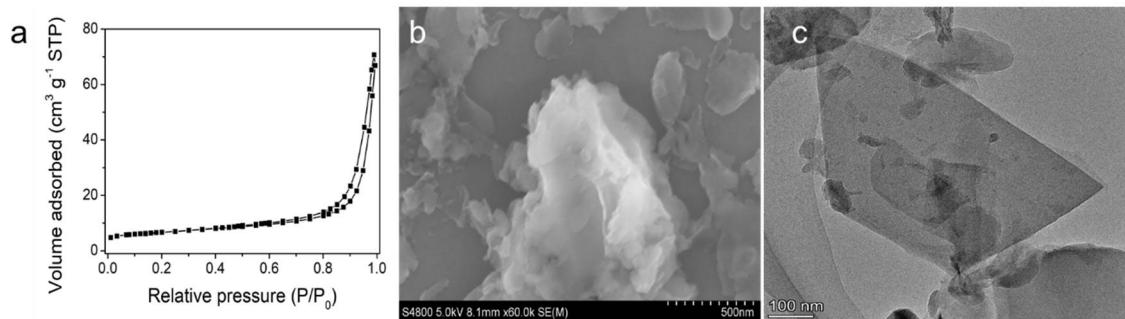
**Figure S3.** Tauc plots of CN and CoAl-LDH.



**Figure S4.** XPS spectra of Co in CN-CoAl<sub>x</sub> samples CN-CoAl<sub>0.25</sub> (a), CN-CoAl<sub>0.3</sub> (b), CN-CoAl<sub>0.5</sub> (c) and CN-CoAl<sub>0.7</sub> (d).



**Figure S5.** Photocatalytic  $H_2$  evolution rates of CoAl-LDH, CN, CN/CoAl-Mix and CN-CoAl<sub>0.5</sub>.



**Figure S6.** BET (a), SEM (b) and TEM (c) analyses of CN-CoAl<sub>0.5</sub> after 5 cycles of  $H_2$ -generation stability test.