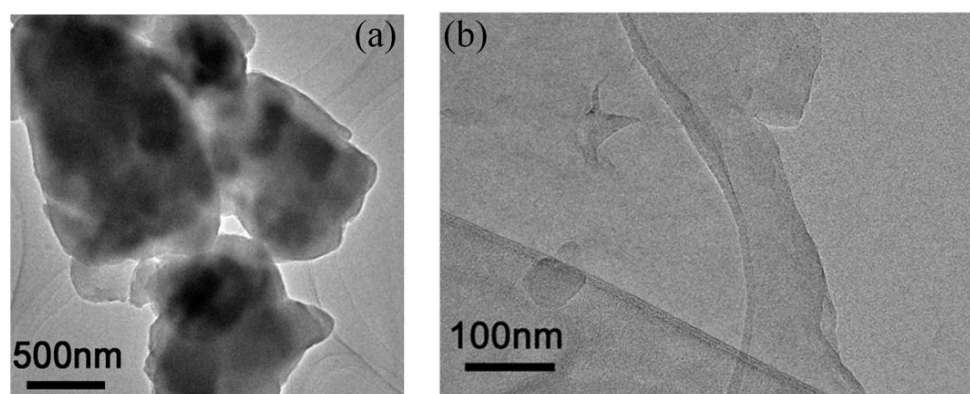


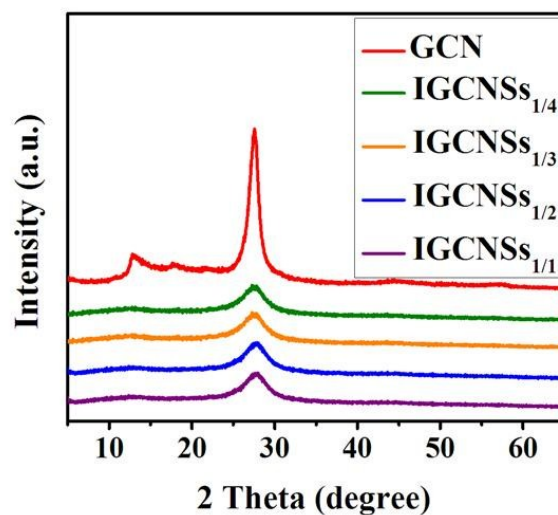
## Electronic Supplementary Information

### One-step Preparation of Iodine-doped Graphitic Carbon Nitride Nanosheets as Efficient Photocatalysts for Visible Light Water Splitting

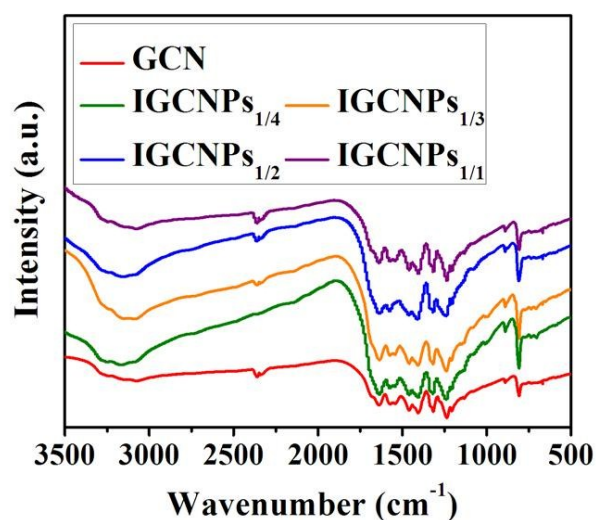
*Qing Han, Chuangang Hu, Fei Zhao, Zhipan Zhang\*, Nan Chen and Liangti Qu\**



**Fig. S1** TEM image of bulk GCN (a) and high-resolution TEM image of IGCNSs<sub>1/2</sub> (b). The scale bars are 500 nm for (a) and 100 nm for (b), respectively.



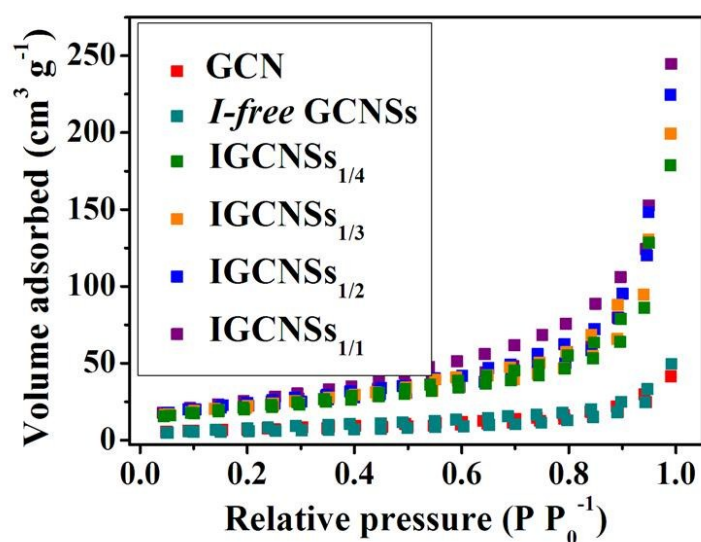
**Fig. S2** XRD patterns of the bulk GCN, IGCNSs<sub>1/4</sub>, IGCNSs<sub>1/3</sub>, IGCNSs<sub>1/2</sub> and IGCNSs<sub>1/1</sub>.



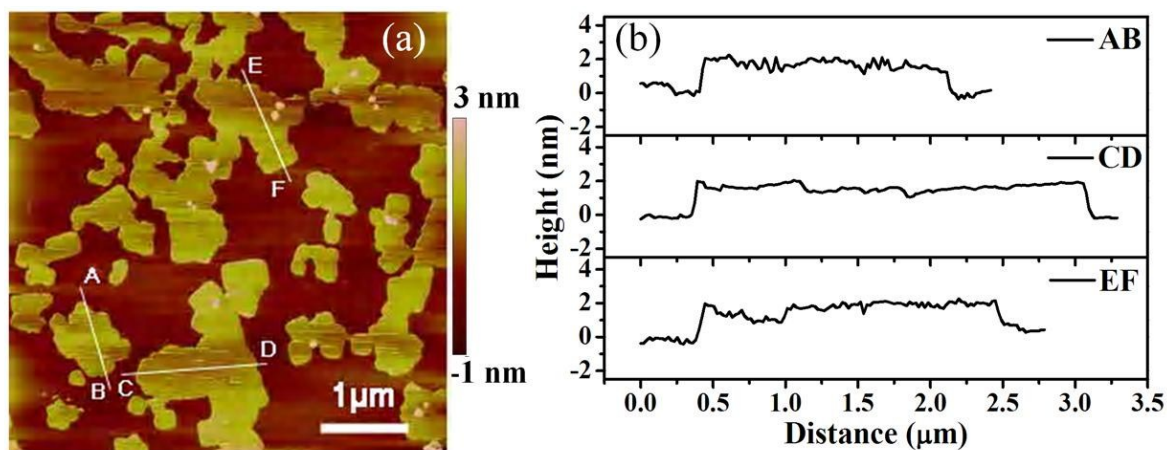
**Fig. S3** IR spectra of the bulk GCN, IGCNSs<sub>1/4</sub>, IGCNSs<sub>1/3</sub>, IGCNSs<sub>1/2</sub> and IGCNSs<sub>1/1</sub>.



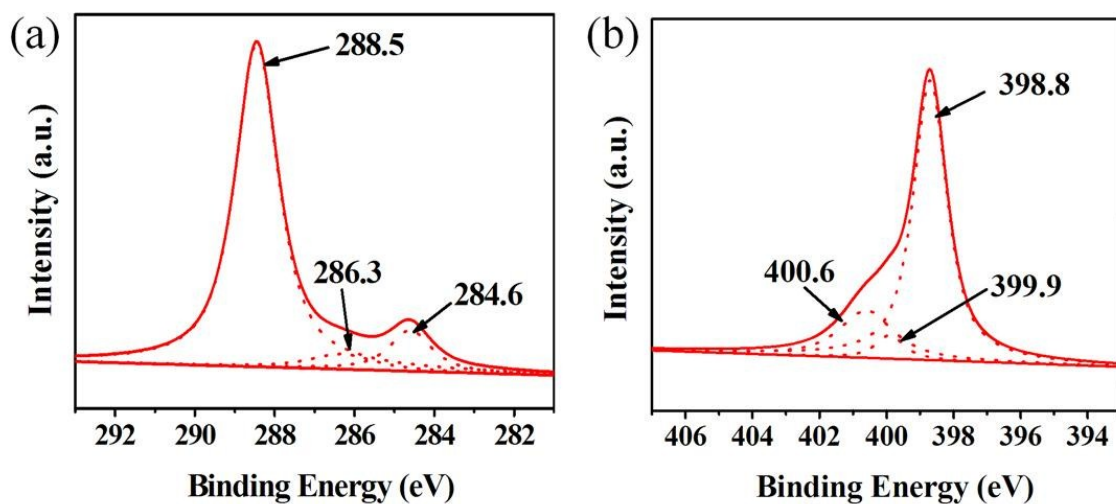
**Fig. S4** Photographs of bulk GCN (1), IGCNSs<sub>1/4</sub> (2), IGCNSs<sub>1/3</sub> (3), IGCNSs<sub>1/2</sub> (4) and IGCNSs<sub>1/1</sub> (5) dispersed solutions in water with concentrations of 0.1 mg mL<sup>-1</sup> after one month under ambient conditions.



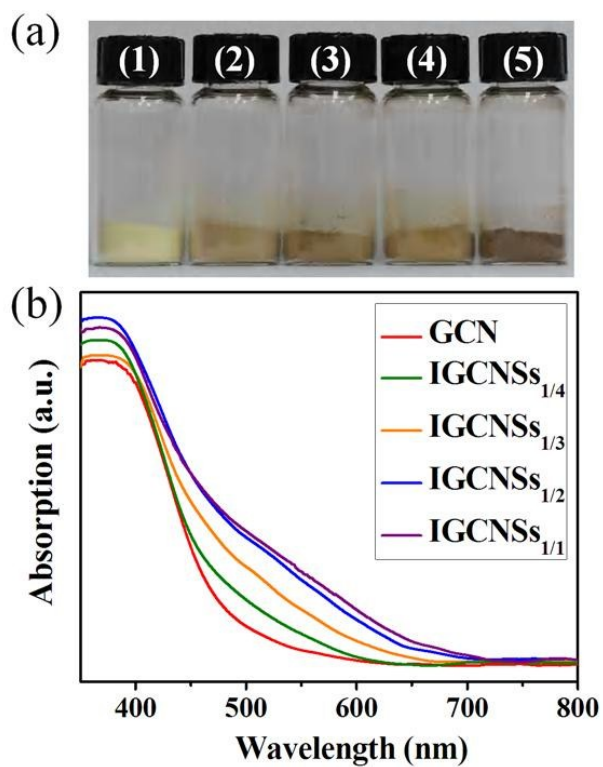
**Fig. S5** Nitrogen adsorption–desorption isotherms of the bulk GCN, *I*-free GCNSs, IGCNSs<sub>1/4</sub>, IGCNSs<sub>1/3</sub>, IGCNSs<sub>1/2</sub> and IGCNSs<sub>1/1</sub>.



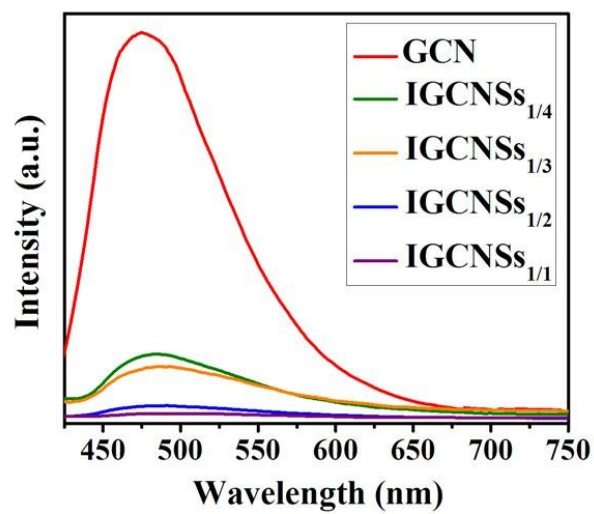
**Fig. S6** (a) AFM image of IGCNSs<sub>1/2</sub> on the Si substrate. (b) Height profile along the line in (a). The scale bar is 1 μm.



**Fig. S7** High-resolution XPS spectra of C 1s (a) and N 1s (b) for the bulk GCN.



**Fig. S8** (a) Color of bulk GCN (1), IGCNSs<sub>1/4</sub> (2), IGCNSs<sub>1/3</sub> (3), IGCNSs<sub>1/2</sub> (4) and IGCNSs<sub>1/1</sub> (5). (b) UV-Vis diffuse reflection spectra of the aforementioned samples.



**Fig. S9** PL spectra of bulk GCN, IGCNSs<sub>1/4</sub>, IGCNSs<sub>1/3</sub>, IGCNSs<sub>1/2</sub> and IGCNSs<sub>1/1</sub> with the excitation wavelength of 380 nm.