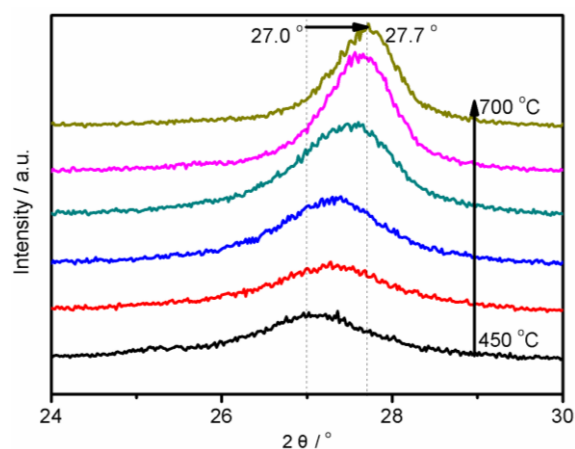


## Supporting Information

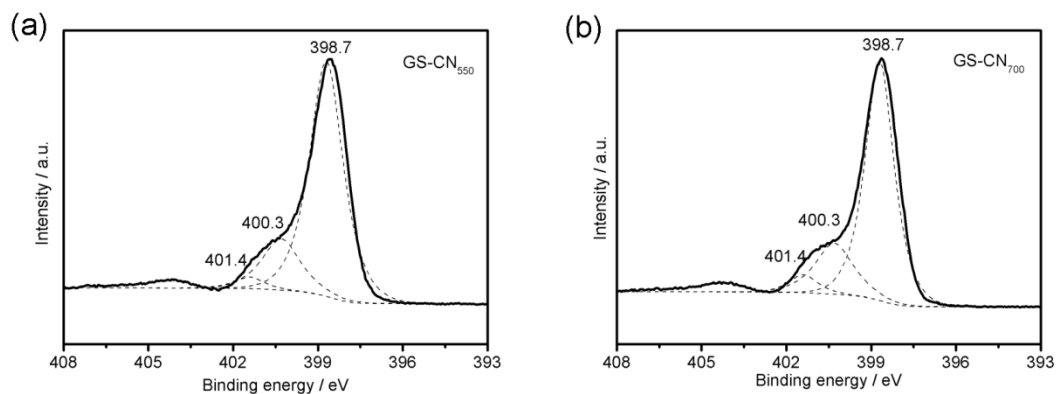
### Thermally-induced Desulfurization and Conversion of Guanidine Thiocyanate into Graphitic Carbon Nitride Catalysts for Hydrogen Photosynthesis

Baihua Long, Jinliang Lin and Xinchun Wang\*

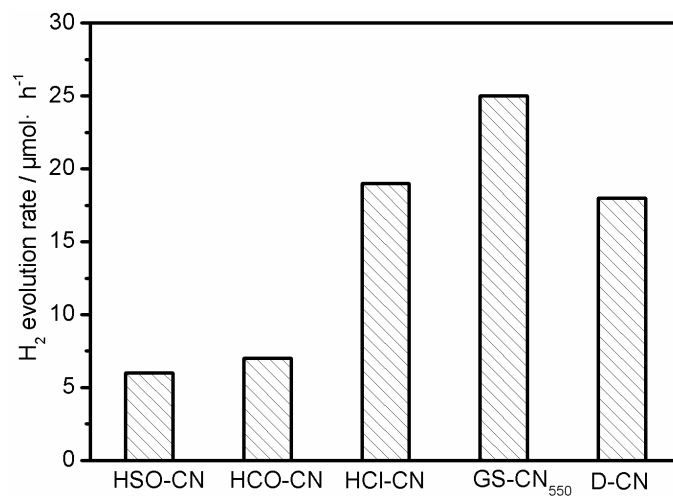
Research Institute of Photocatalysis Fujian Provincial Key Laboratory of Photocatalysis-State Key Laboratory Breeding Base and College of Chemistry and Chemical Engineering, Fuzhou University, Fuzhou 350002, P. R. China.  
Email:xcwang@fzu.edu.cn



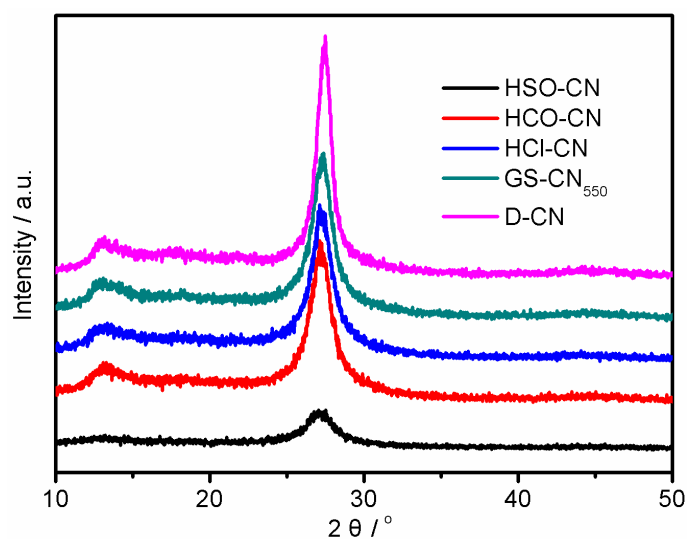
**Fig. S1** Enlarge view of XRD patterns in the range of 24-30 degree of GS-CN<sub>T</sub> obtained under different temperatures.



**Fig. S2** High-resolution N1s XPS spectra of (a) GS-CN<sub>550</sub> and (b) GS-CN<sub>700</sub> catalysts.



**Fig. S3** Rates of photocatalytic H<sub>2</sub> production over different catalysts.



**Fig. S4** XRD patterns of materials obtained from different guanidine precursors together with the D-CN catalyst for comparison.

**Table S1** Elemental analysis results of the catalysts of GS-CN<sub>550</sub> and GS-CN<sub>700</sub>.

Catalysts	C cont. [wt. %]	N cont. [wt. %]	H cont. [wt. %]	S cont. [wt. %]	C/N atomic
GS-CN <sub>550</sub>	34.86	61.02	1.794	0	0.67
GS-CN <sub>700</sub>	33.85	60.23	2.038	0	0.66