

Supporting Information for

Nitrogen-doped Carbon Nanospheres Modified Graphitic Carbon Nitride with Outstanding Photocatalytic Activity

Qiaoran Liu¹, Hao Tian², Zhenghua Dai³, Hongqi Sun⁴, Jian Liu², Zhimin Ao³, Shaobin Wang^{5,*}, Chen Han¹, Shaomin Liu^{1,*}

¹Department of Chemical Engineering, Curtin University, Perth, WA 6845, Australia

²State Key Laboratory of Catalysis, Dalian Institute of Chemical Physics, Chinese Academy of Sciences, Dalian 116023, People's Republic of China

³School of Environmental Science and Engineering, Guangdong University of Technology, Guangzhou 510006, People's Republic of China

⁴School of Engineering, Edith Cowan University, Joondalup, WA 6027, Australia

⁵School of Chemical Engineering, The University of Adelaide, Adelaide, SA 5005, Australia

*Corresponding authors. E-mail: Shaobin.wang@adelaide.edu.au (Shaobin Wang); Shaomin.Liu@curtin.edu.au (Shaomin Liu)

Supplementary Figures and Table

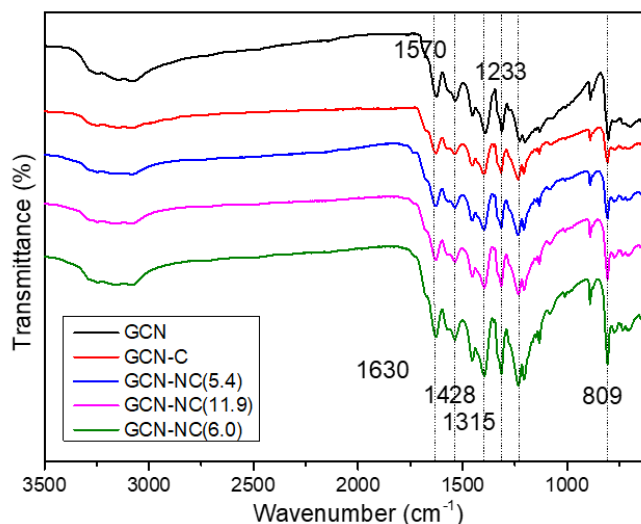


Fig. S1 FTIR spectra of all GCN-based photocatalysts

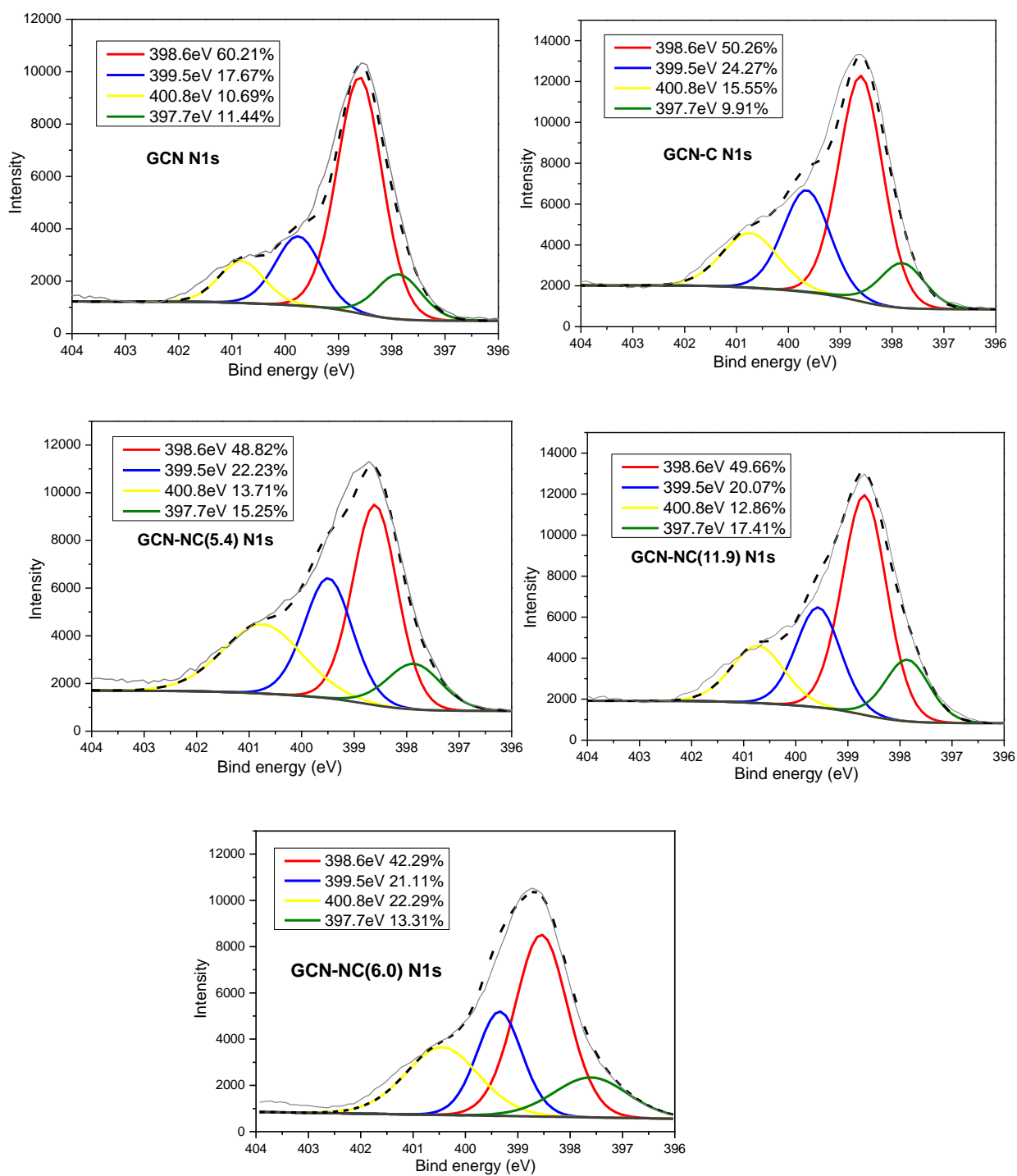
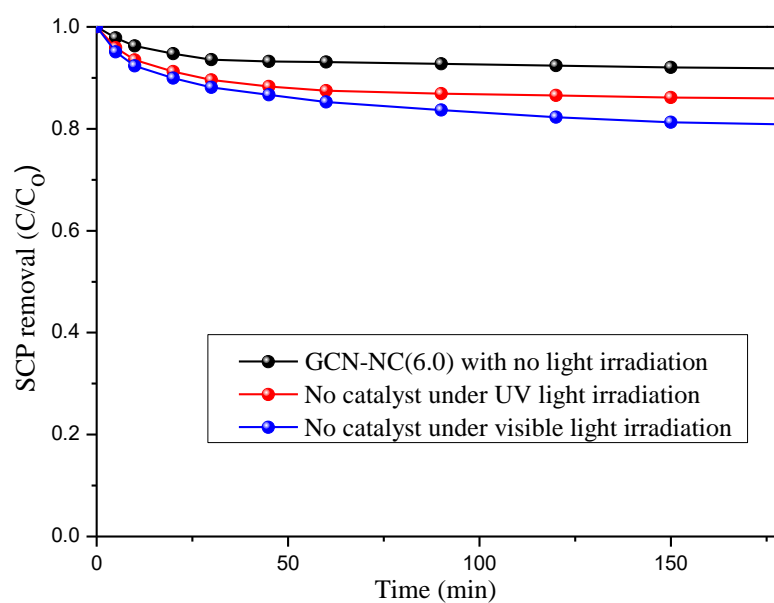
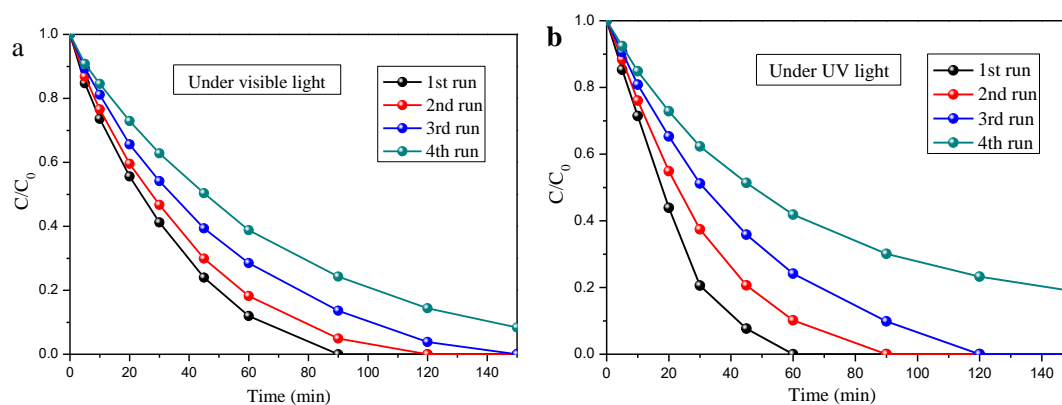


Fig. S2 XPS spectra of all GCN-based photocatalysts

**Fig. S3** photocatalysis setup**Fig. S4** Control experiments**Fig. S5** The stability evaluation of GCN-NC(6.0) under visible (a) and UV light (b)

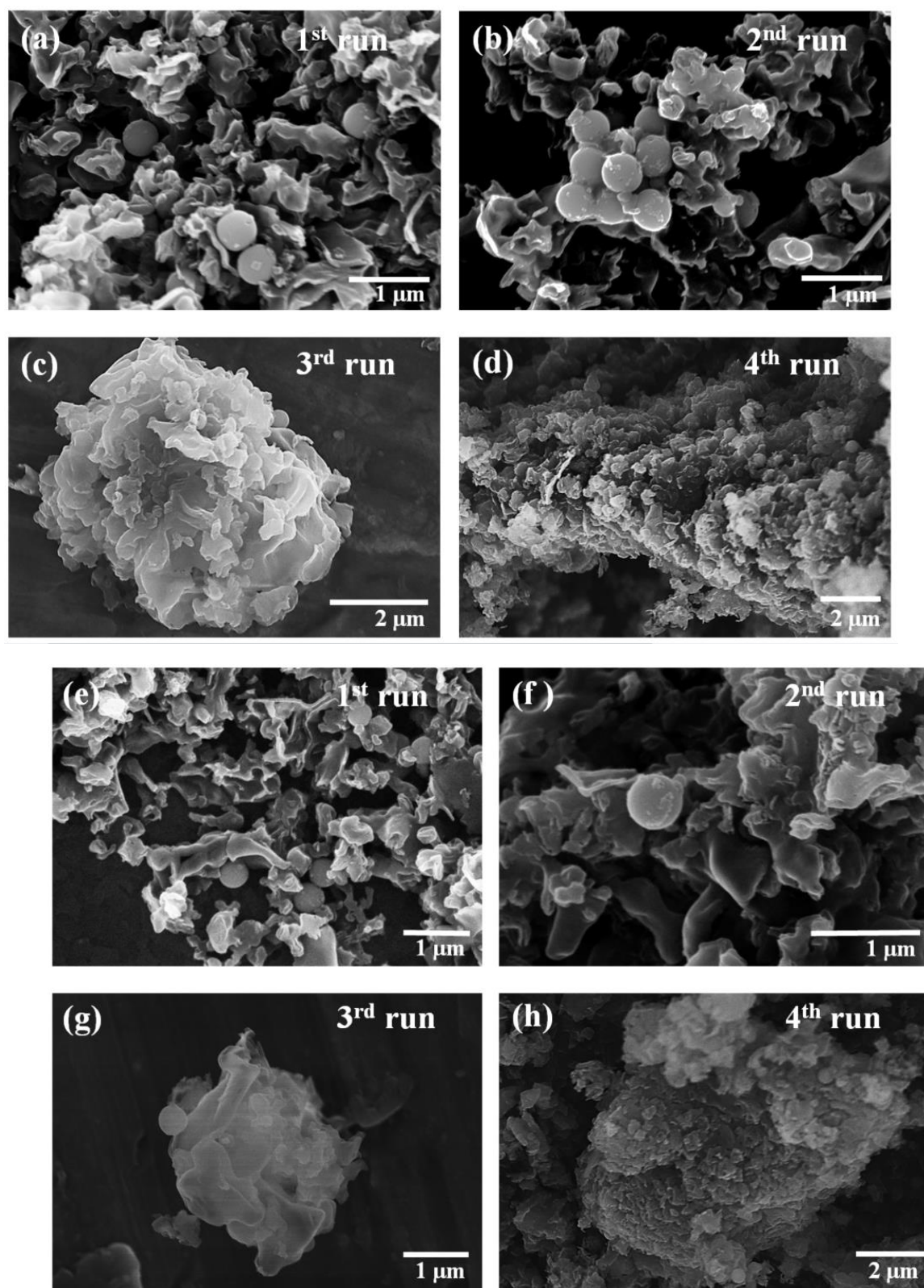


Fig. S6 SEM image of GCN-NC(6.0) after the multiple runs under visible (a-d) and UV (e-h) light

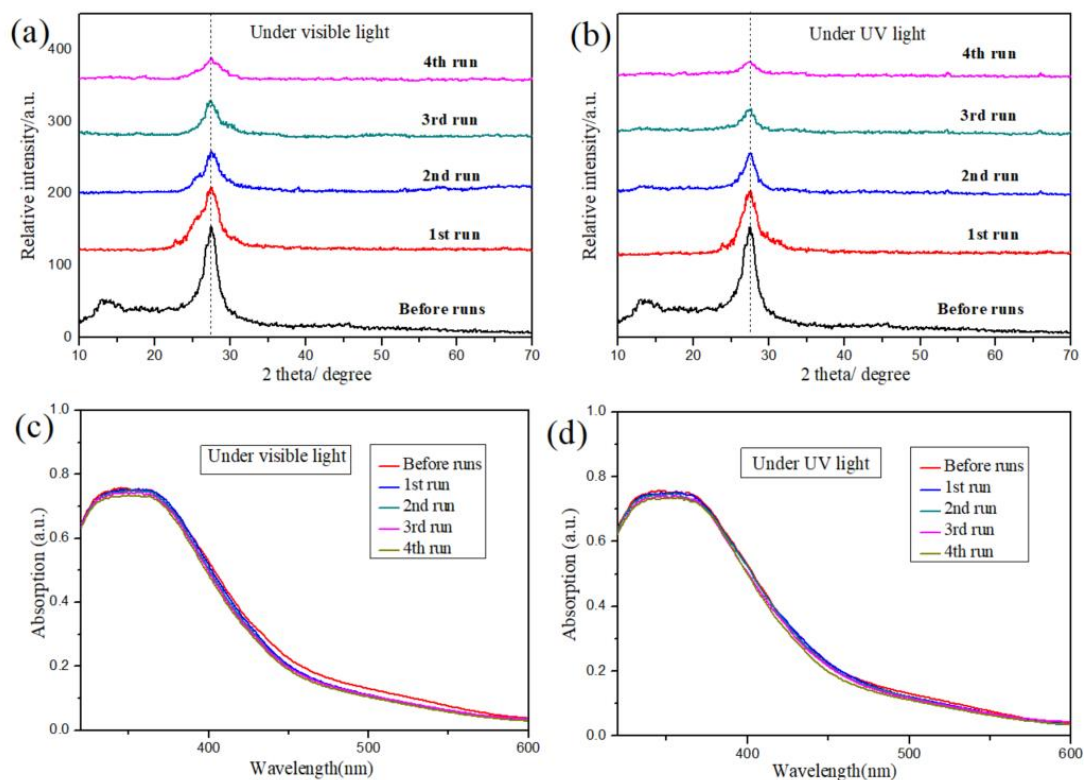


Fig. S7 XRD patterns (**a, b**) and UV-vis results (**c, d**) of GCN-NC(6.0) after the multiple runs under visible and UV light

Table S1 Kinetic parameters of SCP degradation on GCN-based photocatalysts

Irradiation	Catalyst	T (°C)	k	v	R^2 of k	E_a	R^2 of E_a
			(min^{-1})	(mg min^{-1})			
UV	GCN	25	0.0047	0.141	0.84	-	-
	GCN-C	25	0.0076	0.228	0.84	-	-
	GCN-NC(5.4),	25	0.0154	0.493	0.88	-	-
	GCN-NC(11.9)	25	0.0139	0.417	0.87	-	-
	GCN-NC(6.0)	25	0.0205	0.656	0.92	20.32	0.95
	GCN-NC(6.0)	35	0.0287	0.861	0.85	-	-
	GCN-NC(6.0)	45	0.0392	1.254	0.87	-	-
	GCN-NC(6.0)	55	0.0423	1.269	0.81	-	-
Visible	GCN	25	0.0042	0.134	0.96	-	-
	GCN-C	25	0.0061	0.183	0.94	-	-
	GCN-NC(5.4),	25	0.0077	0.231	0.92	-	-
	GCN-NC(11.9)	25	0.0078	0.234	0.90	-	-
	GCN-NC(6.0)	25	0.0139	0.417	0.98	-	-