Supporting Information

High-yield lactic acid-mediated route for g-C_3N_4 nanosheet photocatalyst with enhanced H_2-evolution performance

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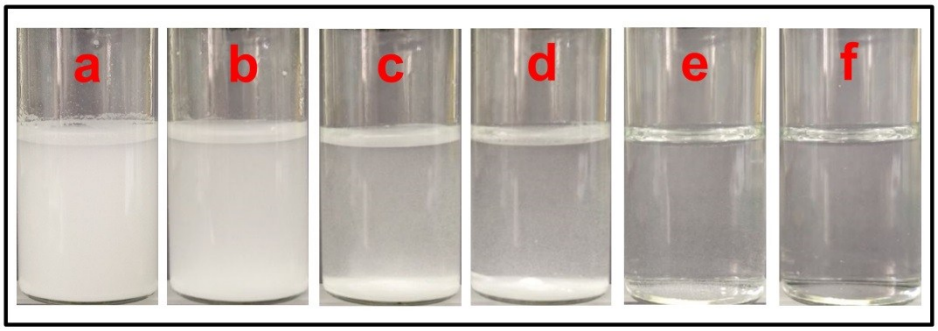

Fig. S1 The optical picture of 100 mg melamine power dispersing into 10 mL lactic acid solution containing different dosage of lactic acid for (a) 0 μL, (b) 10 μL, (c) 20 μL, (d) 30 μL, (e) 50 μL and (f) 80 μL.

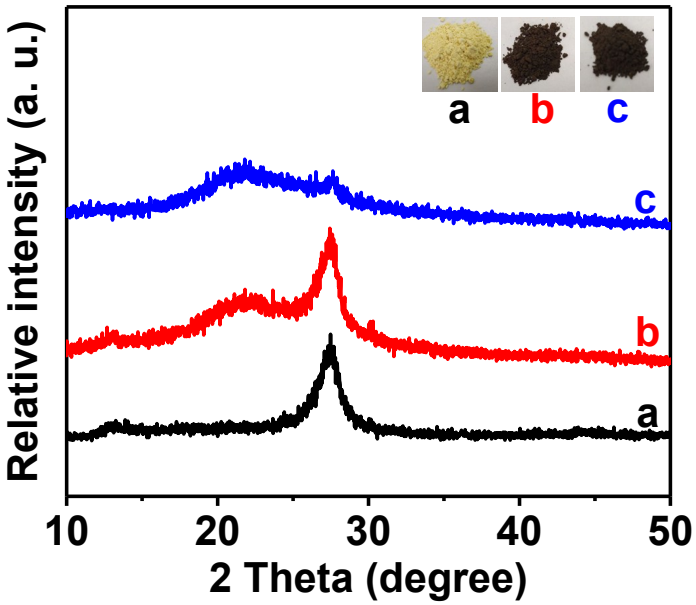

Fig. S2 XRD patterns and their corresponding photographs of various samples: (a) g-C_3N_4(700μL), (b) g-C_3N_4(800μL) and (c) g-C_3N_4(1000μL).

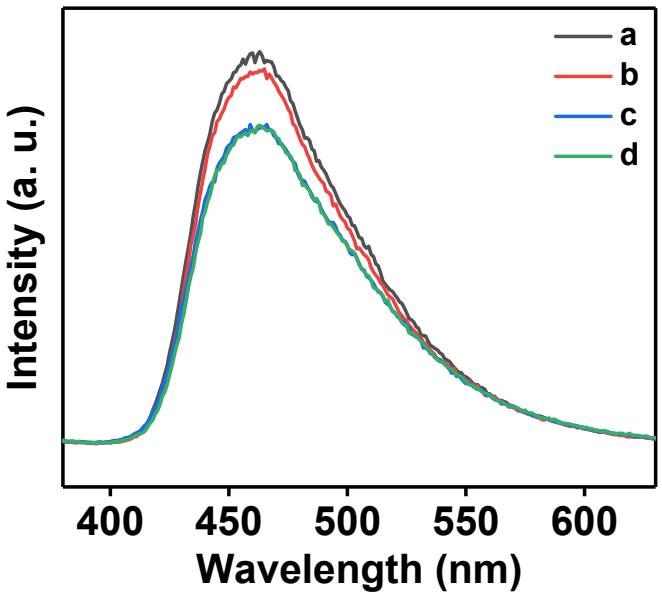

Fig. S3 The PL emission spectra of various samples: (a) bulk g-C_3N_4, (b) g-C_3N_4(50μL), (c) g-C_3N_4(500μL) and (d) g-C_3N_4(700μL).

Table S1. The masses of the bulk g-C_3N_4, g-C_3N_4(50μL), g-C_3N_4(500μL) and g-C_3N_4(700μL), together with those of MA and LA used for preparing them.

Samples	Precursors		Bulk g-C_3N_4 products (g)	Nanosheet products (g)	[a] Nanosheet yield (wt %)
	Melamine (g)	Lactic acid (μL)			
bulk g-C_3N_4	2.0	0	0.5796	0.0278	[b]1.39 %
g-C_3N_4(50μL)	2.0	50	~	0.6371	[c]31.86 %
g-C_3N_4(500μL)	2.0	500	~	0.7033	[c]35.16 %
g-C_3N_4(700μL)	2.0	700	~	0.5245	[c]26.23 %

[a]The yield is the transformation ratio from melamine precursor to g-C_3N_4 nanosheets.

[b]The yield is obtained from a well-known two-step calcination method (twice calcination at 550 ^oC for 4 h).

[c]The yield is obtained from the present lactic acid-mediated route (one-step calcination at 550 ^oC for 4 h).

Table S2. The specific surface area, pore volume and average pore size of various samples according to BET results.

Sample	S_{BET} (m^2 g^{-1})	Pore volume (cm^3 g^{-1})	Average pore size (nm)
(a) bulk g-C_3N_4	5.36	0.09	48.30
(b) g-C_3N_4(50μL)	22.32	0.10	31.49
(c) g-C_3N_4(500μL)	31.34	0.13	21.25
(d) g-C_3N_4(700μL)	14.49	0.11	30.52

Table S3. The element components of various samples according to XPS results.

Sample	C	N	O
(a) bulk g-C_3N_4	41.56	56.55	1.89
(b) g-C_3N_4(50μL)	42.32	54.75	2.93
(c) g-C_3N_4(500μL)	42.17	55.62	2.21
(d) g-C_3N_4(700μL)	42.96	54.14	2.90