

## SUPPORTING INFORMATION

Table S1 The different reactive conditions needed for the synthesis of mpg-C<sub>3</sub>N<sub>4</sub>/CNT

	Cyanamide aqueous solution (50%) /mL	CNT/g	Silica sol/mL	CNT(wt%)
mpg-C <sub>3</sub> N <sub>4</sub> /CNT-A	10	0.10	10	3.4
mpg-C <sub>3</sub> N <sub>4</sub> /CNT-B	5	0.10	5	6.8
mpg-C <sub>3</sub> N <sub>4</sub> /CNT-C	3	0.10	3	10

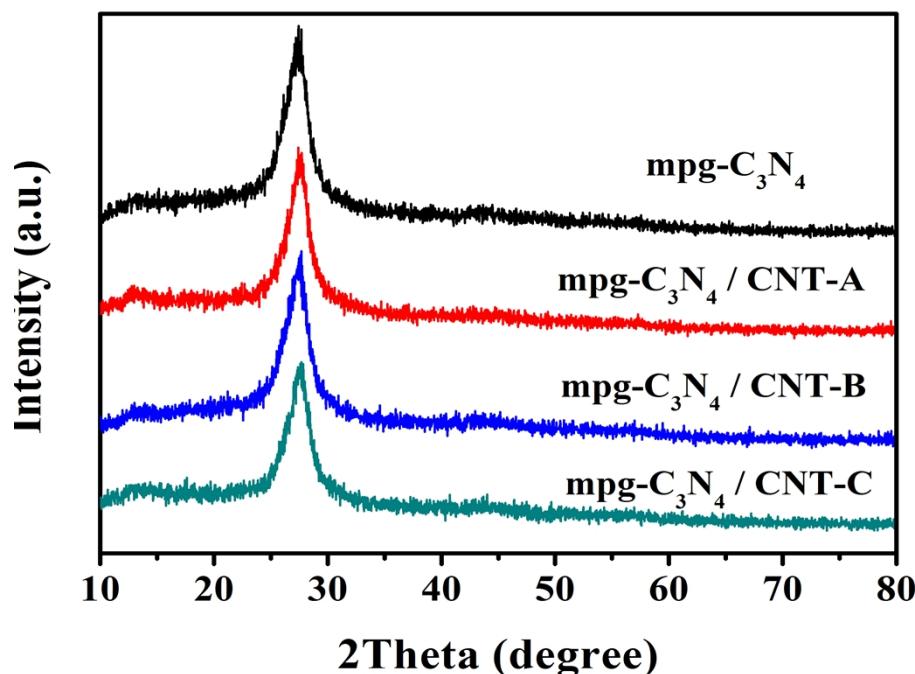


Figure S1 XRD patterns of the as-prepared composite samples

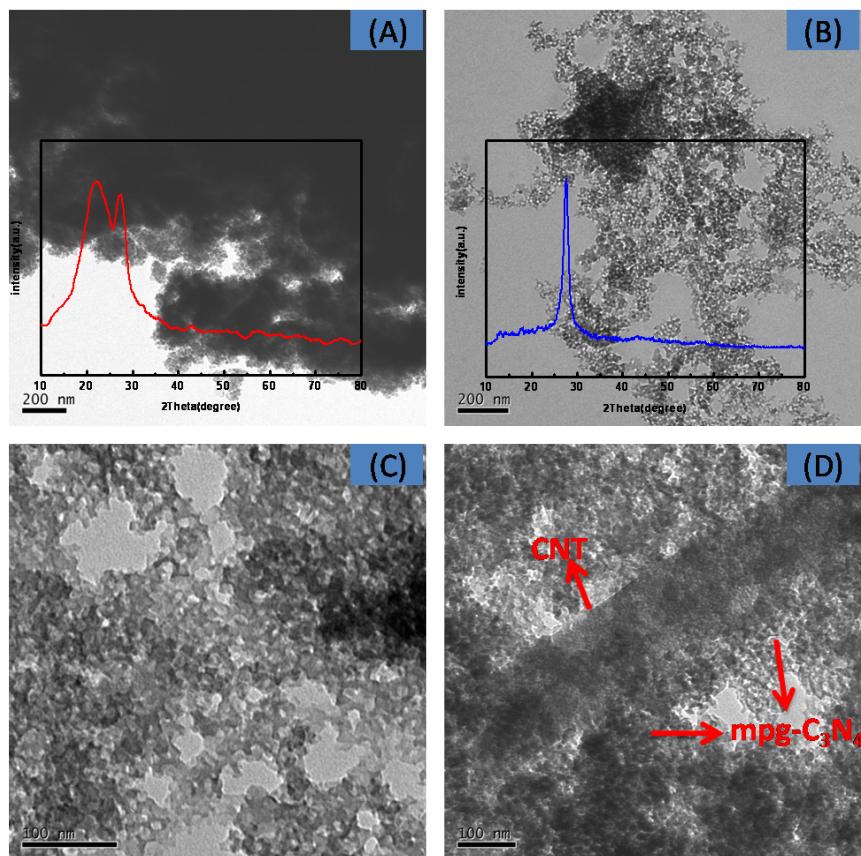


Figure S2 TEM images: (A) mpg-C<sub>3</sub>N<sub>4</sub>/SiO<sub>2</sub>, (B) mpg-C<sub>3</sub>N<sub>4</sub> and inset the XRD patterns of both two materials, (C) enlarged view of mpg-C<sub>3</sub>N<sub>4</sub>, (d) mpg-C<sub>3</sub>N<sub>4</sub>/CNT

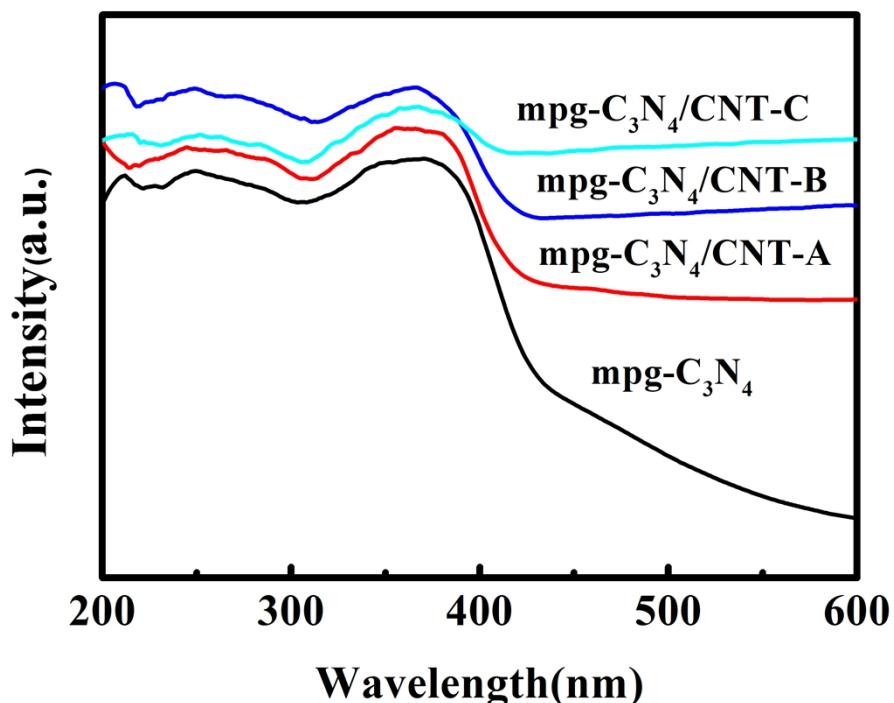


Figure S3 UV-vis absorption spectra of the as-prepared samples

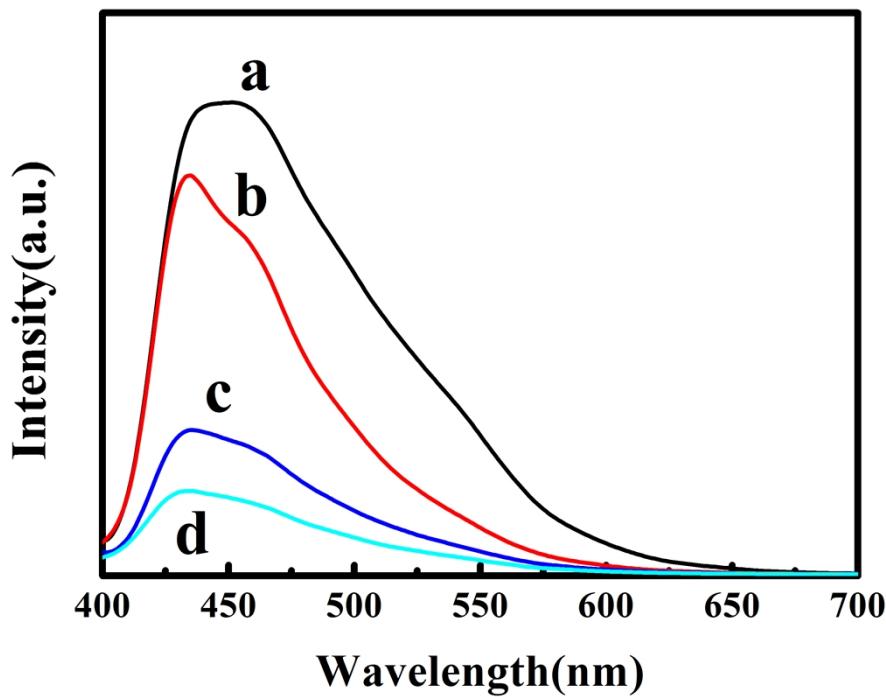


Figure S4 PL spectra of (a) mpg-C<sub>3</sub>N<sub>4</sub>, (b) mpg-C<sub>3</sub>N<sub>4</sub>/CNT-A, (c) mpg-C<sub>3</sub>N<sub>4</sub>/CNT-B, (d) mpg-C<sub>3</sub>N<sub>4</sub>/CNT-C

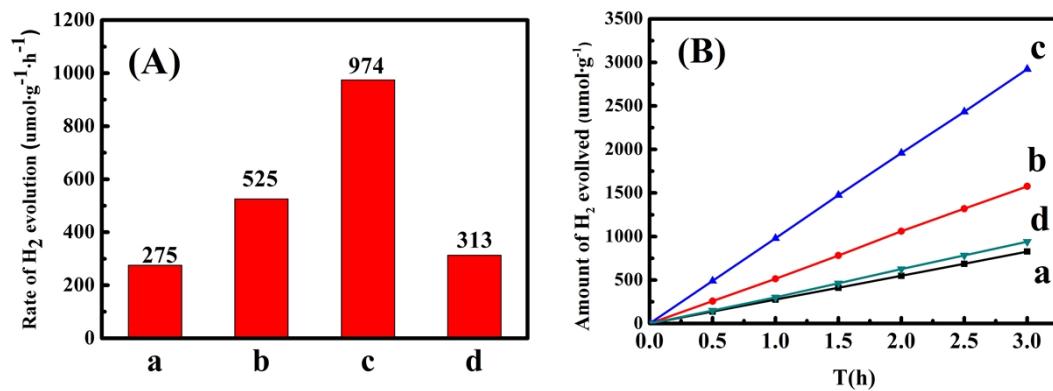


Figure S5 (A) The average rate of H<sub>2</sub> evolution and (B) time courses of photocatalytic H<sub>2</sub> evolution over the photocatalysts with depositing 3.0 wt% Pt: (a) mpg-C<sub>3</sub>N<sub>4</sub>, (b) mpg-C<sub>3</sub>N<sub>4</sub>/CNT-A, (c) mpg-C<sub>3</sub>N<sub>4</sub>/CNT-B, (d) mpg-C<sub>3</sub>N<sub>4</sub>/CNT-C