Supplementary information for

Design a p-n heterojunction in 0D/3D MoS_2/g-C_3N_4 composite for boosting the efficient separation of photogenerated carriers with enhanced visible-light-driven H_2 evolution

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Figures S1-S4

Table S1

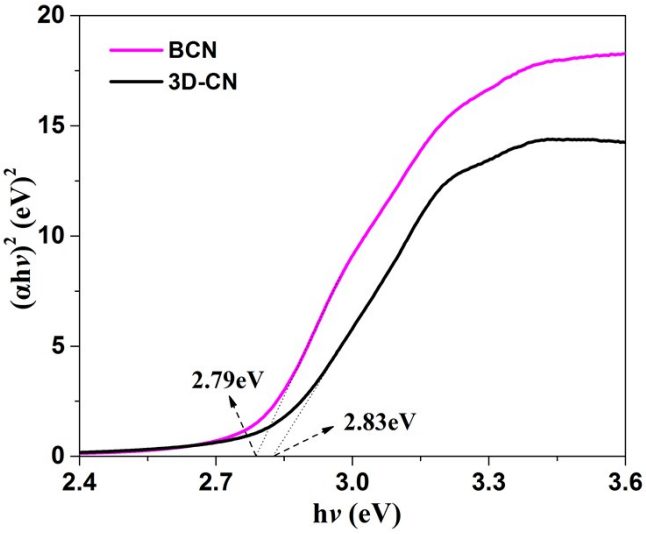

Fig. S1 The optical bandgap of 3D-CN and BCN.

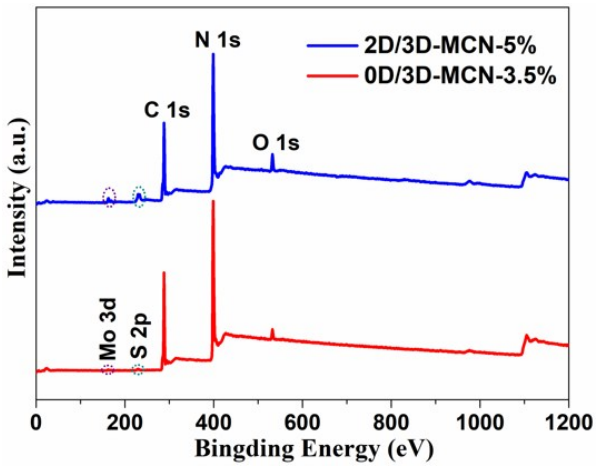

Fig. S2 The XPS total spectra of 0D/3D-MCN-3.5% and 2D/3D-MCN-5%.

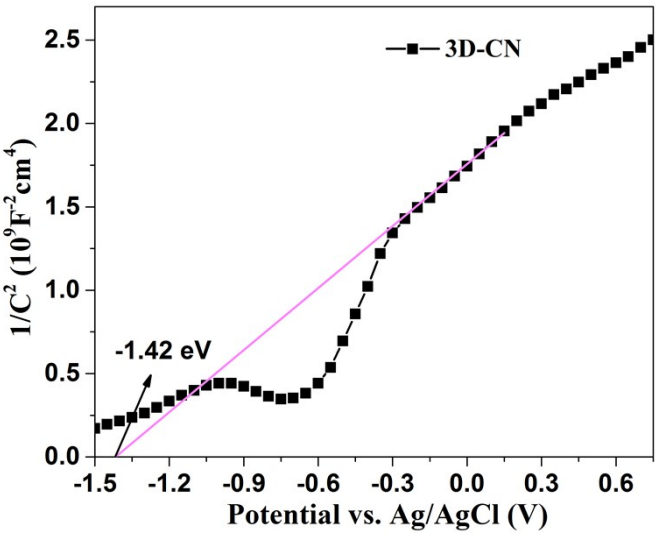

Fig. S3 The Mott-Schottky curve of 3D-CN.

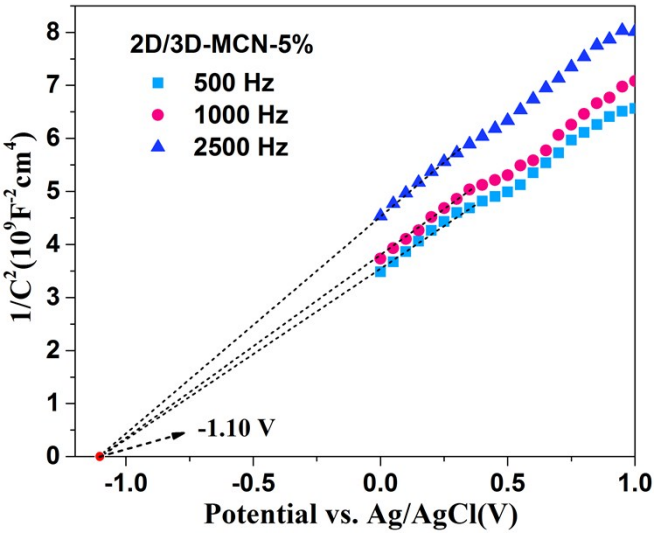

Fig. S4 The Mott-Schottky curves of 2D/3D-MCN-5%.

Table S1 The photocatalytic H_2 production performance of the g-C_3N_4-based photocatalysts reported in recent years and 0D/3D-MCN-3.5%.

Photocatalysts	Light source	Reaction conditions	H_2 evolution rate	Ref.
(0D-2D) MoS_2/g-C_3N_4	300W Xe lamp, λ > 420 nm	2wt% Pt, methanol (25 vol%)	222.9 μmol.h^{-1}.g^{-1} (50mg)	[1]
(2D-2D) MoS_2/g-C_3N_4	300W Xe lamp, λ > 400 nm	methyl alcohol (10 vol%)	385.04 μmol.h^{-1}.g^{-1} (50mg)	[2]
(3D-2D) MoS_2/g-C_3N_4	300W Xe lamp, λ > 420 nm	2wt% Pt, Methanol (25vol%)	533.99 μmol.h^{-1}.g^{-1} (50mg)	[3]
(0D-2D) MoS_2/g-C_3N_4	300W Xe lamp, λ > 400 nm	Lactic acid (20 vol%)	660 μmol.h^{-1}.g^{-1} (50mg)	[4]
(0D-2D)MoS_2/N dope-g-C_3N_4	300W Xe lamp, λ > 420 nm	TEOA (10 vol%)	212.41 μmol.h^{-1}.g^{-1} (50mg)	[5]
(0D-2D) MoS_2/g-C_3N_4	300W Xe lamp, λ > 400 nm	TEOA (10 vol%)	252 μmol.h^{-1}.g^{-1} (10mg)	[6]
NiS_2/g-C_3N_4	300W Xe lamp, λ > 420 nm	TEOA (10 vol%)	715.83 μmol.h^{-1}.g^{-1} (50mg)	[7]
Co_3O_4/g-C_3N_4/Pt	300W Xe lamp, λ > 300 nm	TEOA (10 vol%)	610μmol.h^{-1}.g^{-1} (0.02g)	[8]
(0D-3D) MoS_2/g-C_3N_4	300W Xe lamp, λ > 400 nm	Lactic acid (10 vol%)	817.1 μmol.h^{-1}.g^{-1} (50mg)	This work

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