Enhanced photocatalytic performance over PANI /NH_2-MIL-101(Fe) with tight interfacial contact

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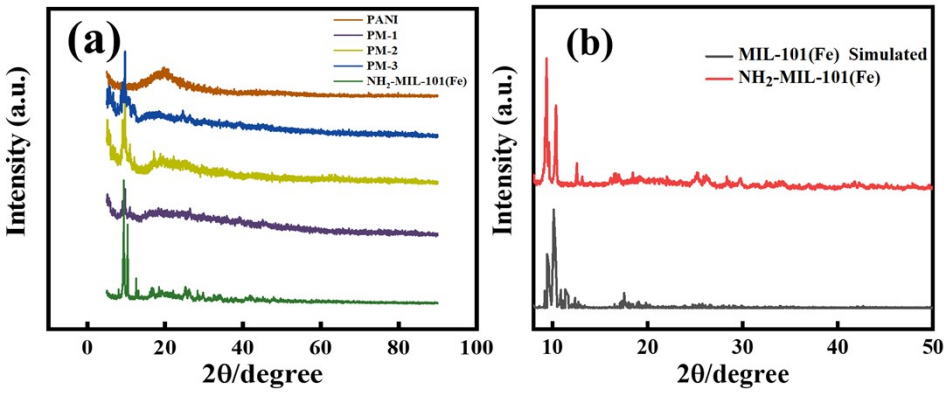

Fig.S1 (a)XRD patterns of all samples, (b) Comparison of NH_2-MIL-101(Fe) and its standard spectrum

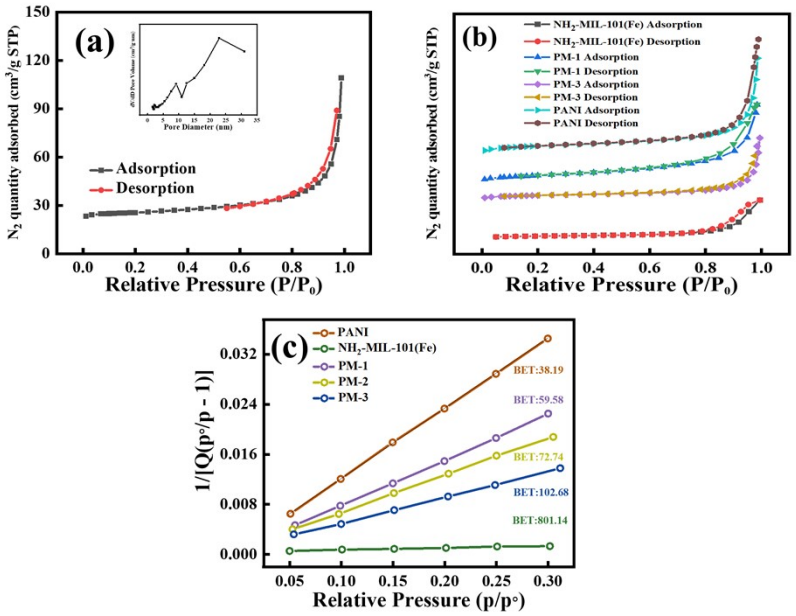

Fig.S2 (a) N_2 adsorption isotherms of the PM-2; the pore size distribution graph is given in the inset, (b) N_2 adsorption isotherms of the other remaining materials, (c) BET for all samples.

The average pore sizes of PANI, PM-1, PM-3, and NH_2-MIL-101(Fe) are 36.96, 23.05, 15.37 4.31 nm, respectively

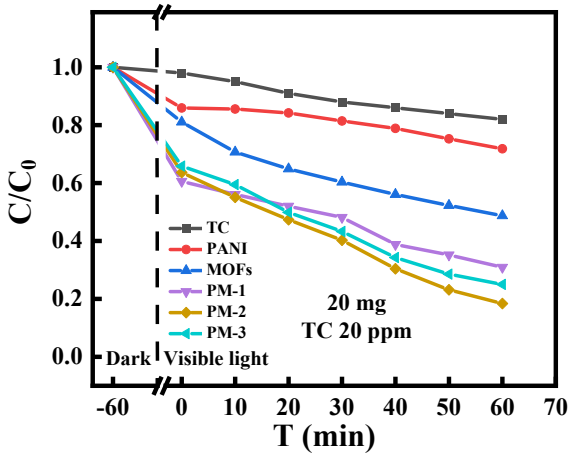

Fig.S3 The photocatalytic efficiencies of all materials under visible light.

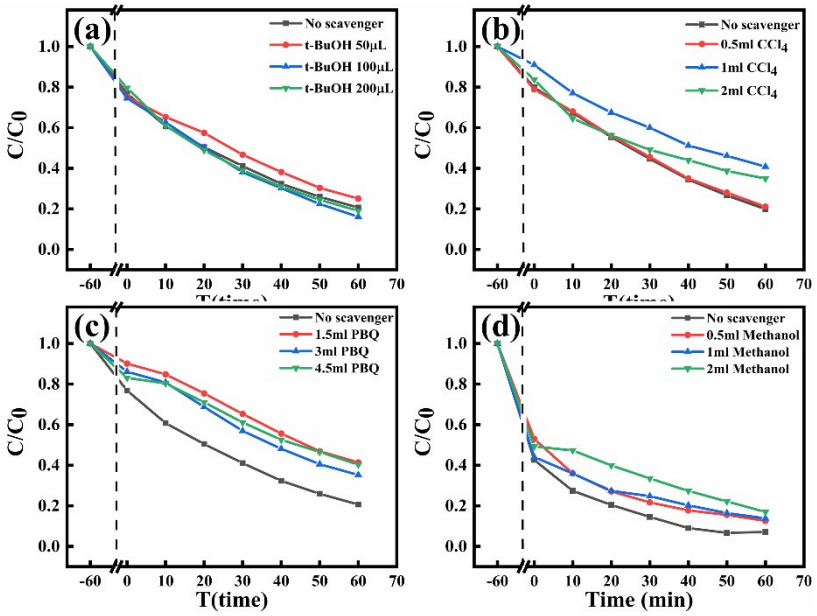

Fig.S4 The radical trapping test for the PM-2.

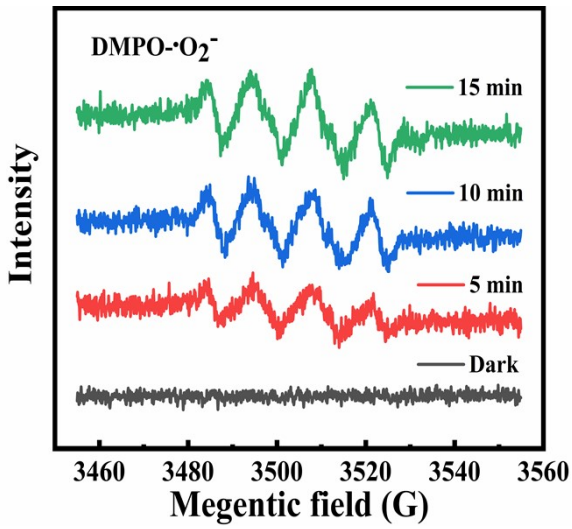

Fig.S5 The ESR spectrum of PM-2 for DMPO–•O_2^-.

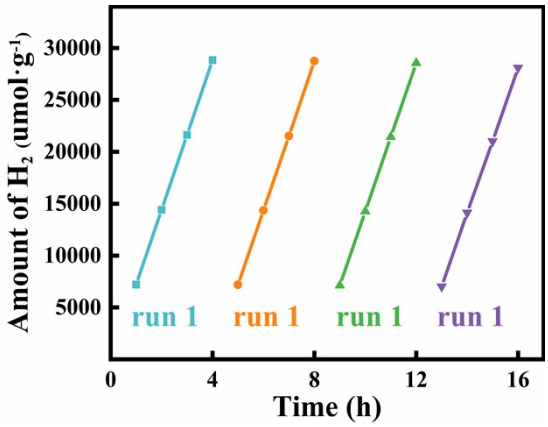

Fig.S6 Stability test of PM-2 for photocatalytic H_2 production activity.

Table S1 Comparison of TC degradation over PM-2 and other photocatalysts.

Catalyst / mg	***V (mL) / C_0 (mg·L^{-1})***	***Light source***	***Time (min)***	***Result (%)***	***TOF***	***Ref.***
PM-2/20	50/20	Sun light	60	90%	75	This work
PANI/PDI/25	50/20	Visible light	120	70%	23.3	[1]
PANI/$Bi_4O_5Br_2$/20	50/20	Visible light	20	75.3%	188.3	[2]

PANI/$AgFeO_2$/30	50/20	Visible light	60	91.8%	51	3
RP/MIL-101(Fe)/50	50/100	Sun light	60	90.1%	150.2	4
In_2S_3/MIL-100(Fe)/30	10/ 100	Visible light	90	88%	32.6	5
In_2S_3@MIL-125(Ti)/30	46/100	Visible light	60	63.3%	48.3	6

TOF is calculated according to an equation: $TOF = \frac{C_0 \times V_{TC} \times \text{Degradation rate}}{m_{\text{catalyst}} \times t}$

Table S2 Comparison of the photocatalytic H_2 evolution rates over different photocatalysts.

Photocatalysts	***Irrigation***	***Sacrificial agents***	***Activity μmol·g^{-1}h^{-1}***	***Ref***
PM-2	Visible light	TEOA	7040.2	This work
g-C_3N_4/PANI	Sun light	TEOA	163.2	7
Cu/BN@PANI	Sun light	lactic acid	3121	8
UiO-66-PANI-Co_3O_4	Visible light	TEOA	710	9
NH_2-MIL-125(Ti)/B-CTF-1	Visible light	TEOA	360	10
MIL-101-CH_2@1	Visible light	TEOA	1500	11
Au@CdS/MIL-101	Visible light	Na_2S Na_2SO_3	25000	12

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