

Up-conversion effect boosted photocatalytic CO₂ reduction activity of Z-scheme CPDs/BiOBr heterojunction

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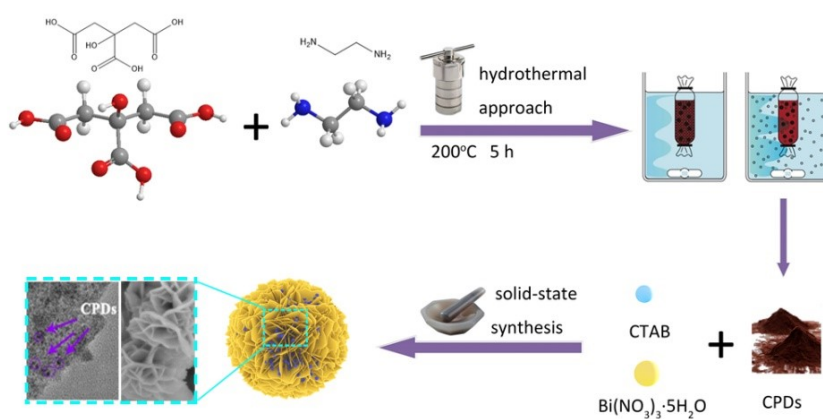


Fig. S1 Schematic illustration of the synthetic process of CPDs/BiOBr

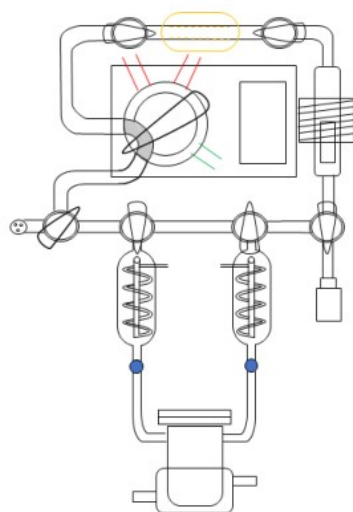


Fig. S2 Schematic diagram of Labsolar-6A in photocatalytic CO₂ reduction

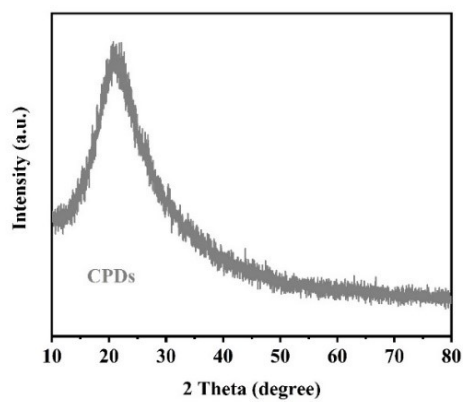


Fig. S3 XRD pattern of CPDs

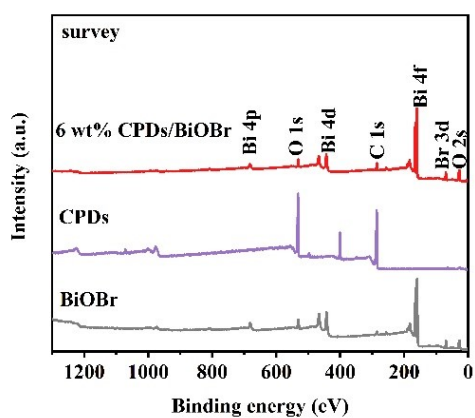


Fig. S4 XPS spectra of BiOBr, CPDs and 6 wt% CPDs/BiOBr

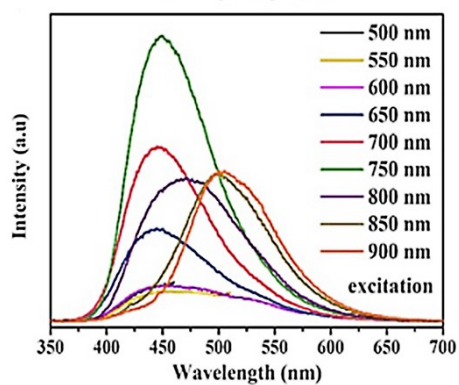


Fig. S5 Up-converted PL spectra of CPDs

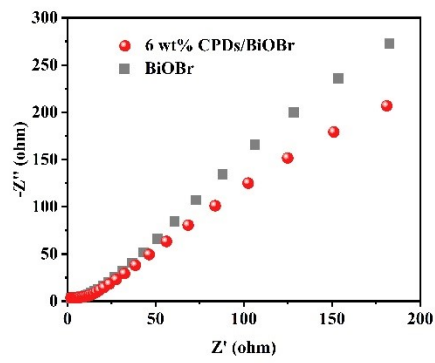


Fig. S6 EIS spectra of BiOBr and 6 wt% CPDs/BiOBr

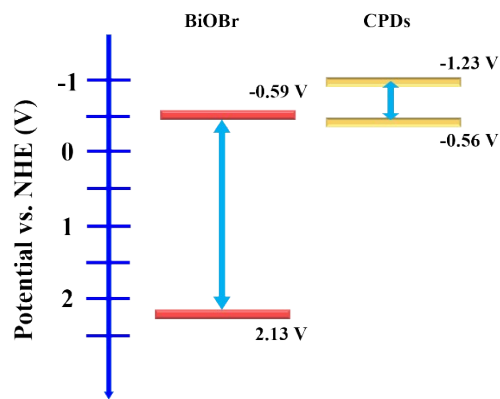


Fig. S7 Band gap structure of CPDs and BiOBr

Table S1 Bismuth oxybromide composite photocatalysts for CO₂
reduction

Photocatalysts	Light sources	Reaction conditions	Main products	Evolution rate ($\mu\text{mol}\cdot\text{g}^{-1}\cdot\text{h}^{-1}$)	Ref.
CPDs/BiOBr	300 W Xe-lamp	Gas-solid reaction	CO	144.6	This work
AgBr/BiOBr	300 W Xe-lamp	Liquid-solid reaction	CO	12.43	[1]
BiOBr/CdS	300W Xe-lamp	Liquid-solid reaction	CO	4.53	[2]
BiOBr/Zn(OH) ₂	300 W Xe-lamp	Liquid-solid reaction	CO	5.4	[3]
BiOBr/Bi ₂ WO ₆	300 W Xe-lamp	Gas-solid reaction	CO	55.17	[4]
OV-BiOBr	300 W Xe-lamp	Liquid-solid reaction	CO	2.03	[5]
Bi-CTS/BiOBr	300 W Xe-lamp	Liquid-solid reaction	CO	50.13	[6]
BiOBr/HNb ₃ O ₈	300 W Xe-lamp	Gas-solid reaction	CO	32.92	[7]
BiOBr/ACSs	300 W Xe-lamp	Liquid-solid reaction	CO	23.74	[8]
BiOBr/Bi ₂ S ₃	300 W Xe-lamp	Liquid-solid reaction	CO/CH ₄	100.8/8.5	[9]
BiOBr/CoAl-LDH	300 W Xe-lamp	Liquid-solid reaction	CO/CH ₄	4.096/4.174	[10]
BiOBr/NiO	300 W Xe-lamp	Gas-solid reaction	CO/CH ₄	12.8/6.6	[11]

Supplementary references

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