Supporting Information

Constructing crystalline-amorphous hydrated niobium pentoxide homojunction for superior photocatalytic CO_2 reduction into CH_4 with high selectivity

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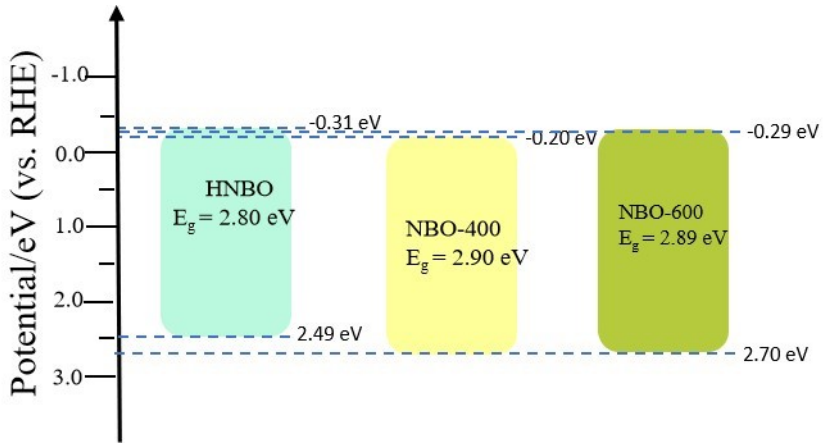

Fig. S1 Band structure of HNBO, NBO-400, and NBO-600.

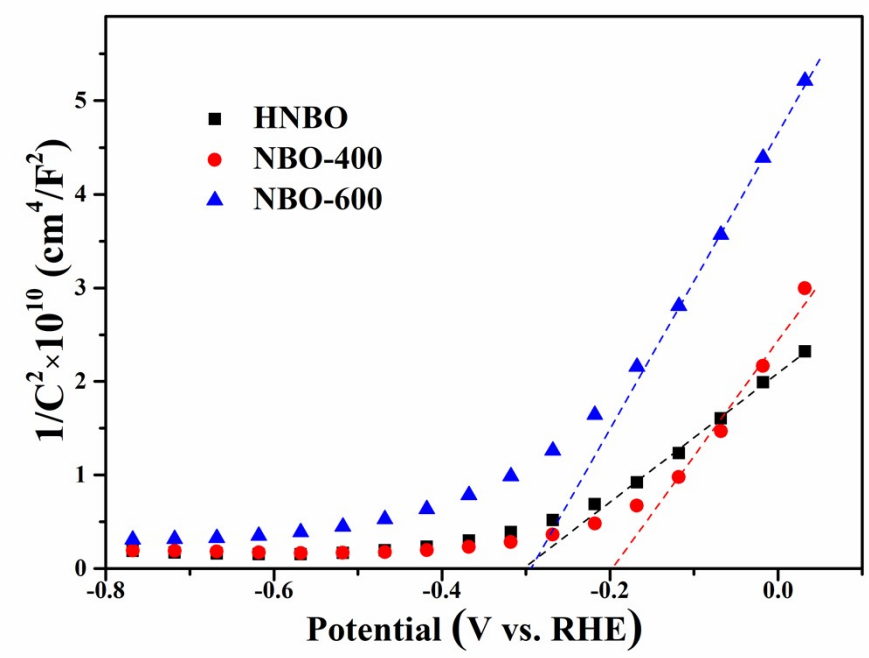

Fig. S2 Mott-Schottky plots of HNBO, NBO-400, and NBO-600

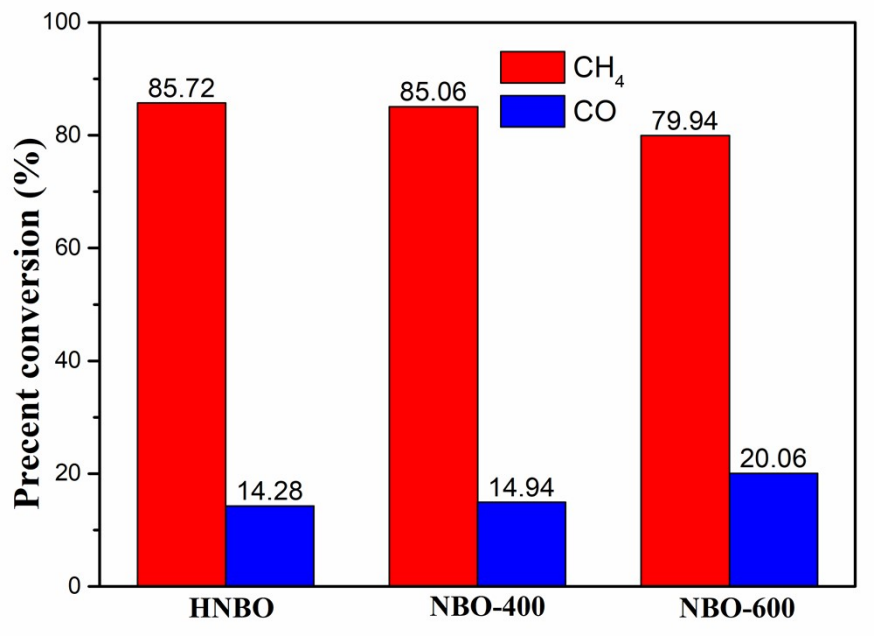

Fig. S2 CH_4 and CO selectivity comparison over HNBO, NBO-400, and NBO-600.

Table S1 Comparison of CO_2 photoreduction activity and selectivity for CH_4 over HNBO with other representative works reported in the literature.

Photocatalytic Materials	Light Source	Reaction condition	Production rate of CH_4	Selectivity of CH_4	Ref.
HBNO	300 W Xe lamp	Gas-solid, H_2O	31.39 μmol/g/h	85.7%	This work
$Bi_4O_5Br_2$/AgBr	300 W Xe lamp	Gas-solid, H_2O	1.8 μmol/g/h	21.9%	[1]
O-doped g-C_3N_4/N-doped Nb_2O_5	300 W Xe lamp	Gas-solid, H_2O	68.11 μmol/g/h	21.1%	[2]
NiO_x/Nb_2O_5	UV light	Gas-solid, H_2O	138.9 μmol/g/h	40.9%	[3]
g-C_3N_4/Pt/(TiO_2@ carbon)	Simulated sunlight	Gas-solid, H_2O	6.56 μmol/g/h	81.7%	[4]
MoO_2/g-C_3N_4	300 W Xe lamp	Gas-solid, H_2O	0.145 μmol/g/h	20.3%	[5]
CuO/Nb_2O_5	UV light	Liquid-solid, H_2O	2 μmol/g/h	68.6%	[6]
Black Nb_2O_{5-x}	300 W Xe lamp	Liquid-solid, H_2O	19.5 μmol/g/h	64.8%	[7]

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