Electronic Supplementary Information

Enhancing formaldehyde oxidation on Ir catalysts by hydrogenated TiO_2 supports

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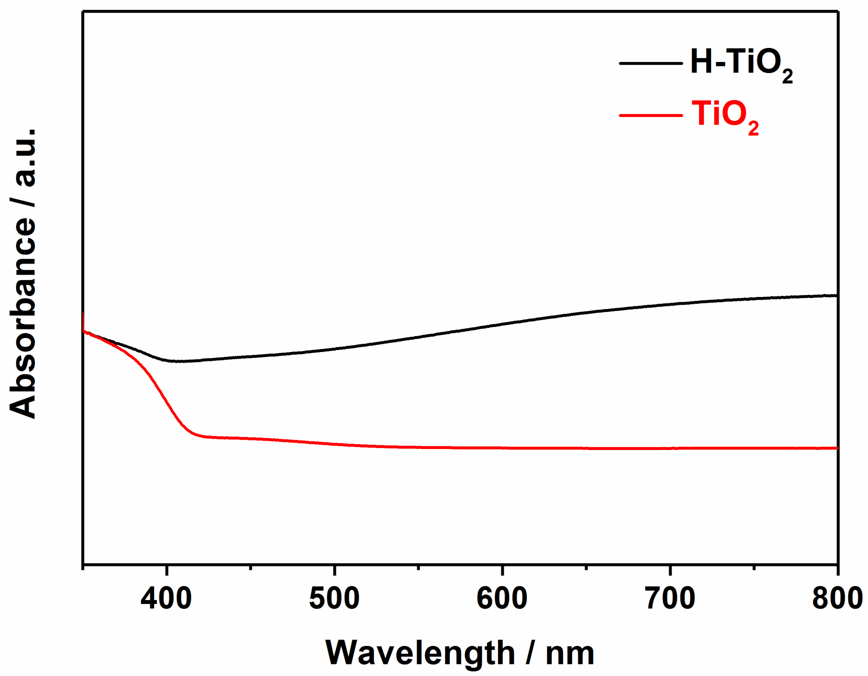

Fig. S1 UV-vis DRS of H-TiO_2 and TiO_2.

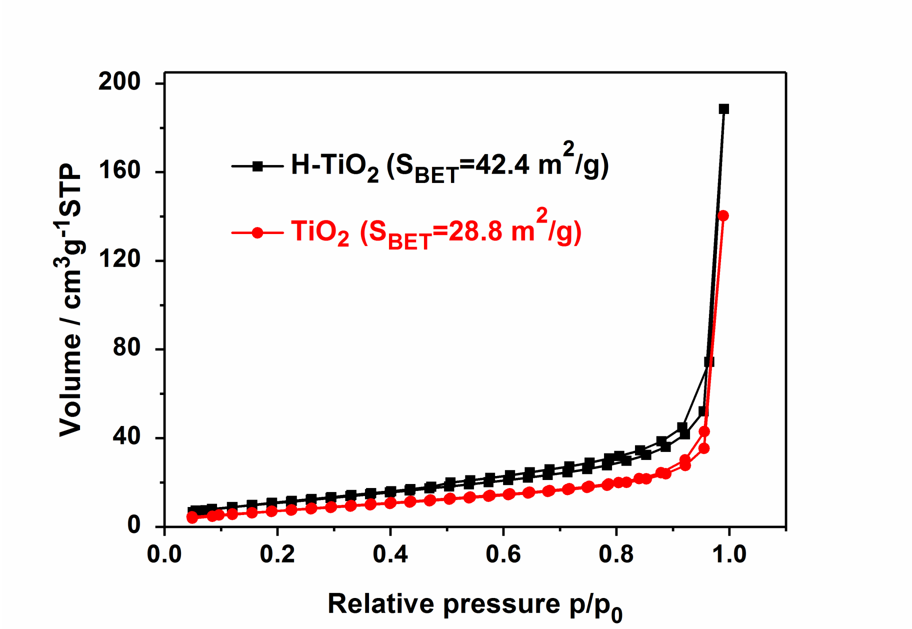

Fig. S2 N_2 sorption isothermals of H-TiO_2 and TiO_2.

Table S1. The amount of SiO_2 in H-TiO_2 and TiO_2 determined by XRF measurement.

	SiO_2 (wt%)	TiO_2 (wt%)
H-TiO_2	4.1	92.6
TiO_2	13.8	85.0

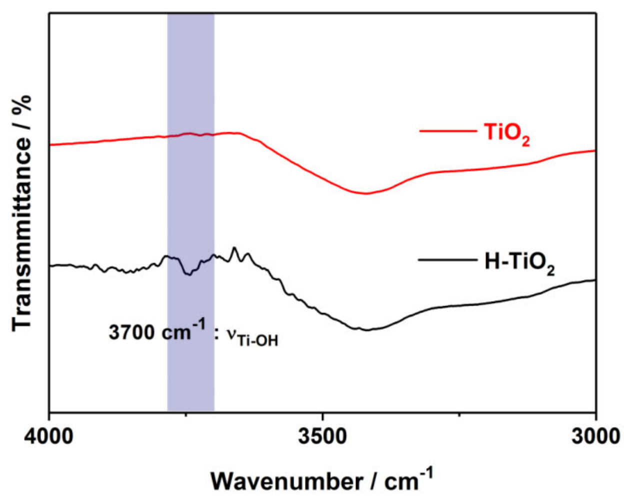

Fig. S3 FT-IR of H-TiO_2 and TiO_2 from 4000 to 3000 cm^{-1}.

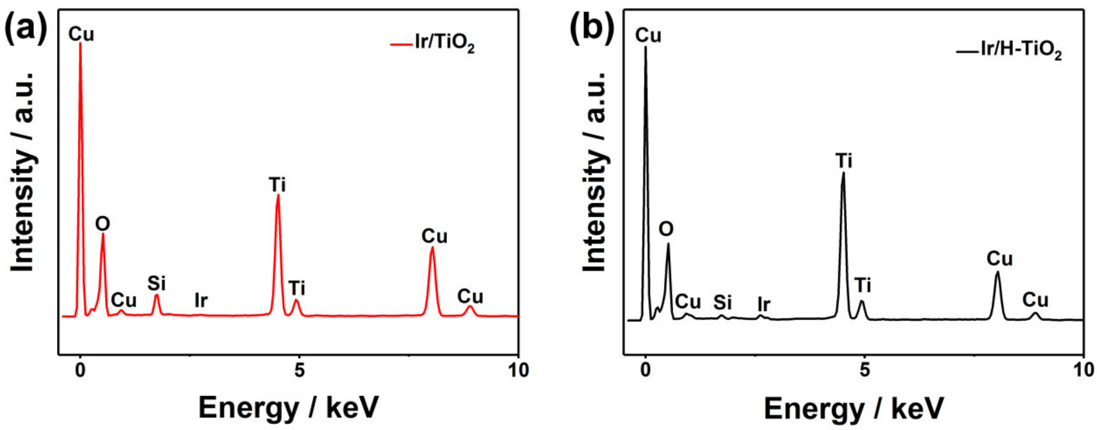

Fig. S4 EDS profiles of (a) 0.9%Ir/TiO_2 and (b) 0.7%Ir/H-TiO_2.

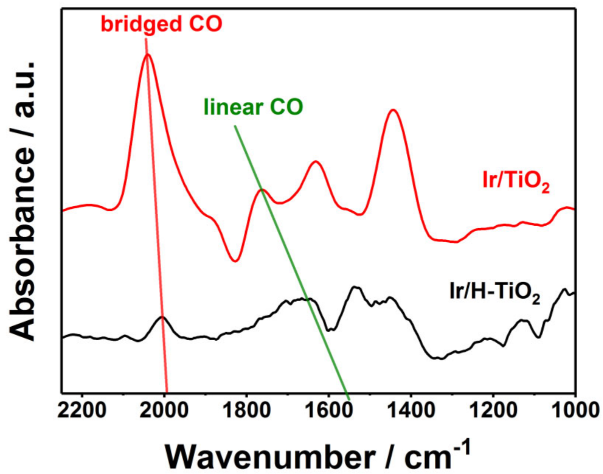

Fig. S5 CO-DRIFTS of 0.7%Ir/H-TiO_2 and 0.9%Ir/TiO_2.

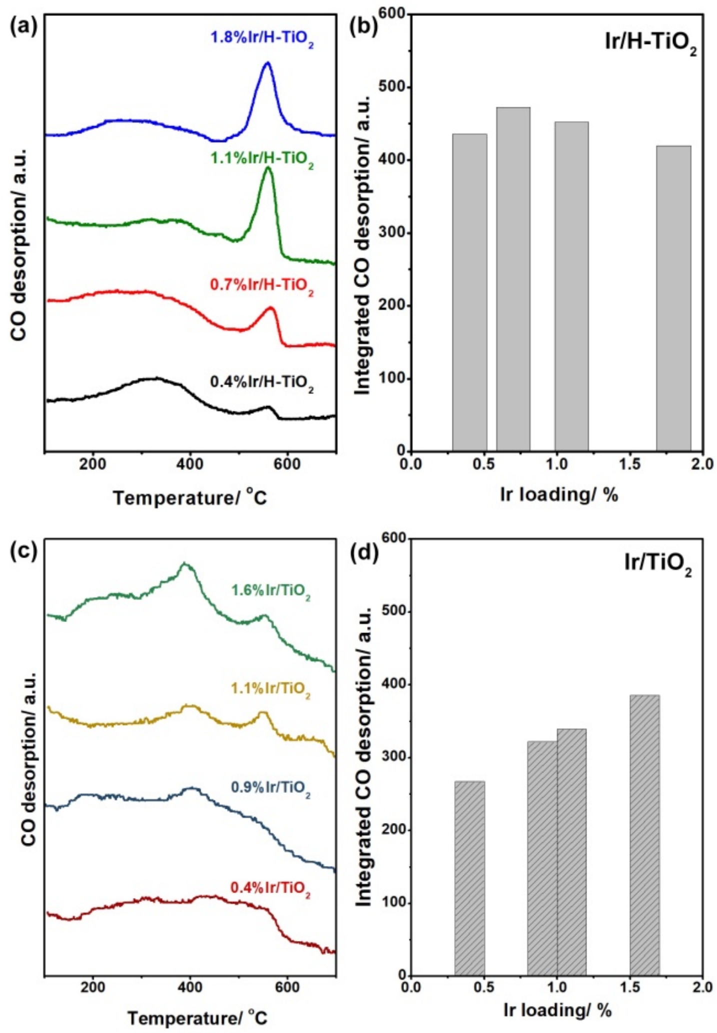

Fig. S6 CO-TPD profiles and the corresponding quantitative CO desorption from (a,b) Ir/H-TiO_2 and (c,d) Ir/TiO_2.

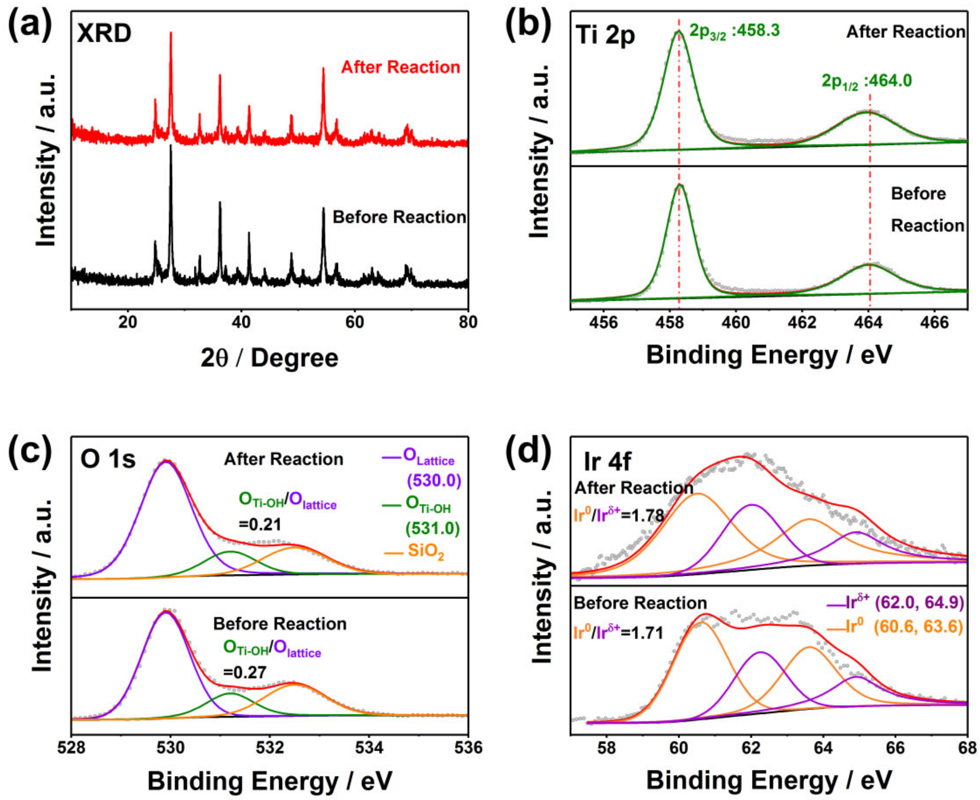

Fig. S7 (a) XRD pattern, and (b) Ti 2p, (c) O 1s, and (d) Ir 4f XPS profiles on 0.7%Ir/H-TiO_2 before and after reaction.

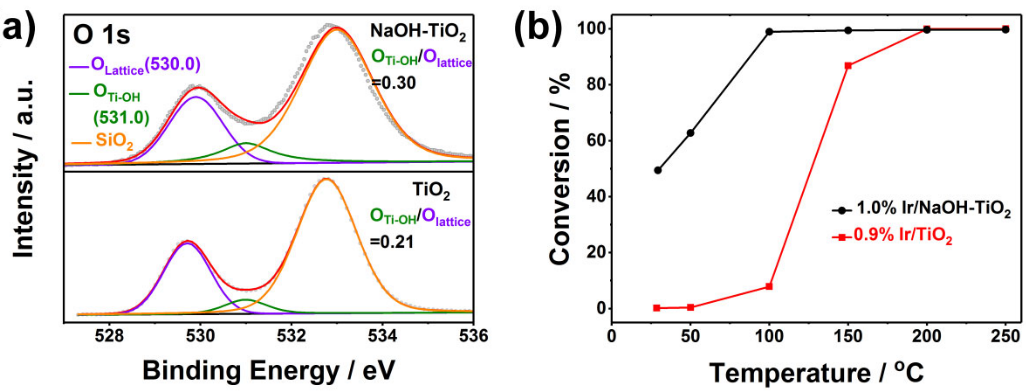

Fig. S8 (a) O 1s XPS profile NaOH-modified TiO_2 and bare TiO_2, and (b) catalytic HCHO oxidation on Ir supported by NaOH-modified TiO_2 and bare TiO_2.

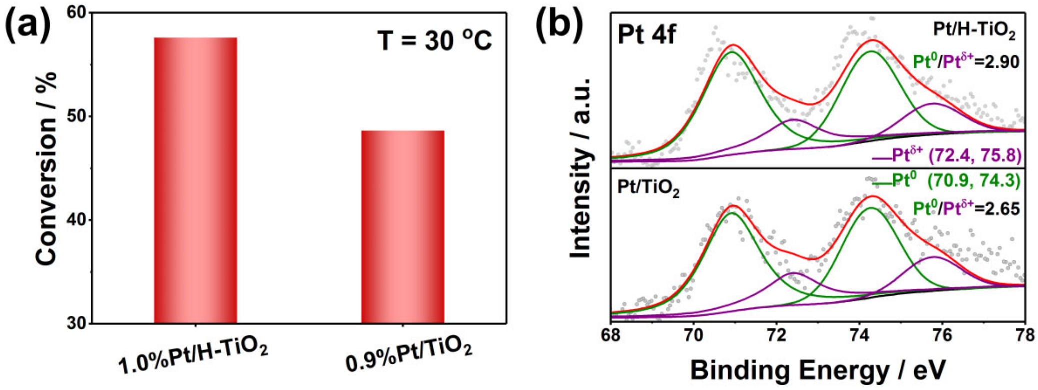

Fig. S9 (a) Performance of HCHO oxidation at 30 °C, and (b) Pt 4f XPS profiles of 1.0%Pt/H-TiO_2 and 0.9%Pt/TiO_2.