Supplementary information

The influence of H_2O and SO_2 on the mechanism of CO Oxidation over Low Noble Metal Loading Catalysts

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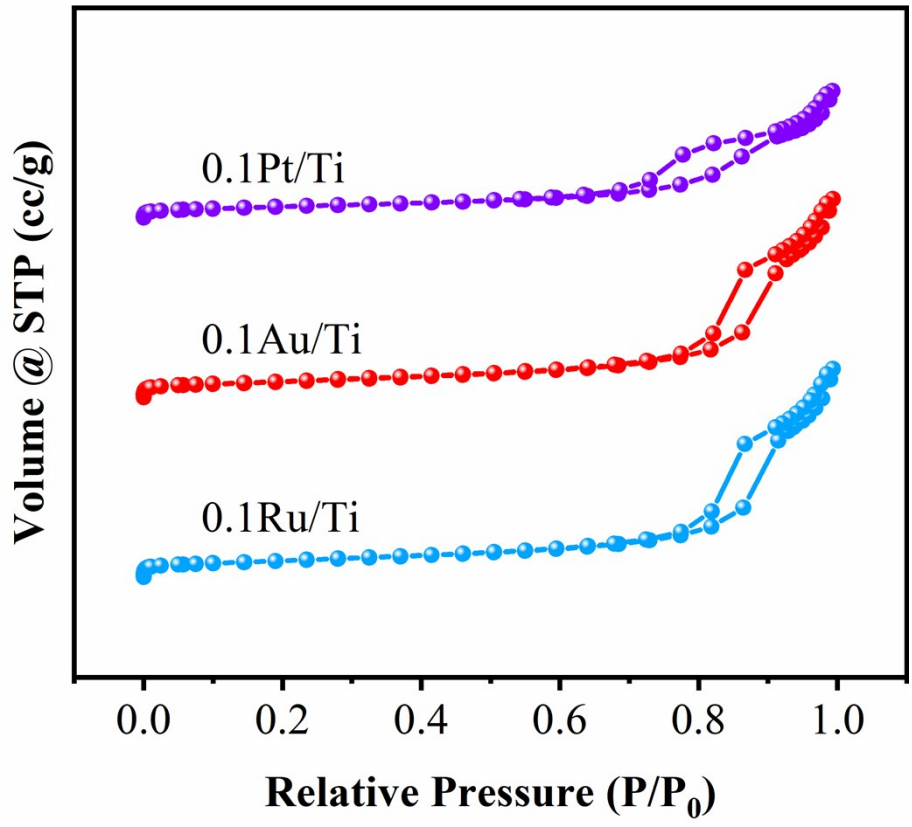

Fig. S1. N_2 isothermal adsorption-desorption curve of the 0.1Ru/Ti, 0.1Au/Ti and 0.1Pt/Ti.

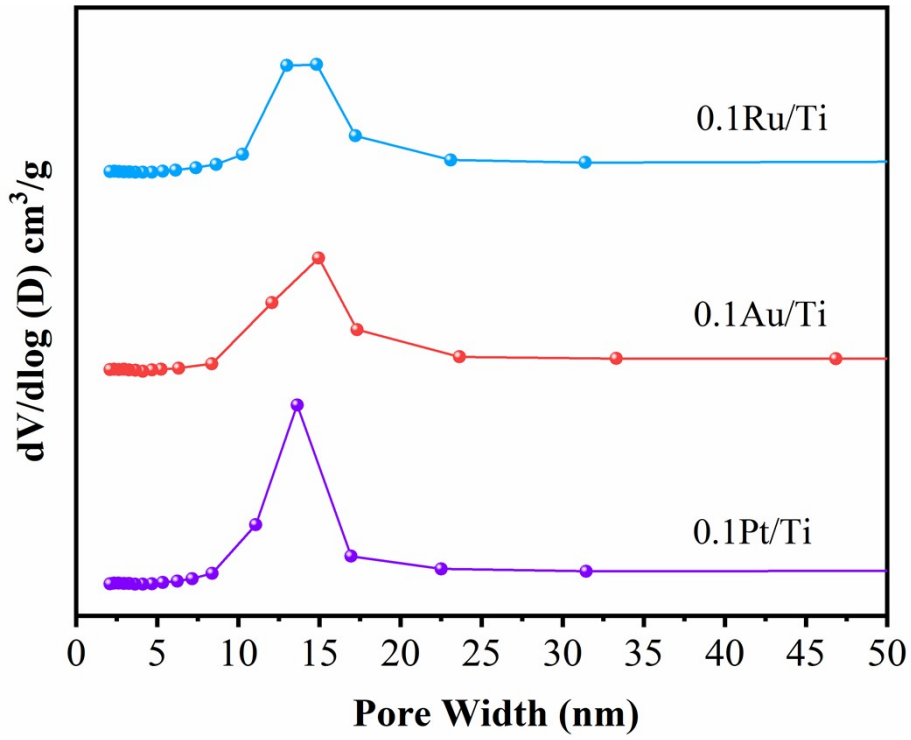

Fig. S2. Pore size distribution of the 0.1Ru/Ti, 0.1Au/Ti and 0.1Pt/Ti catalysts.

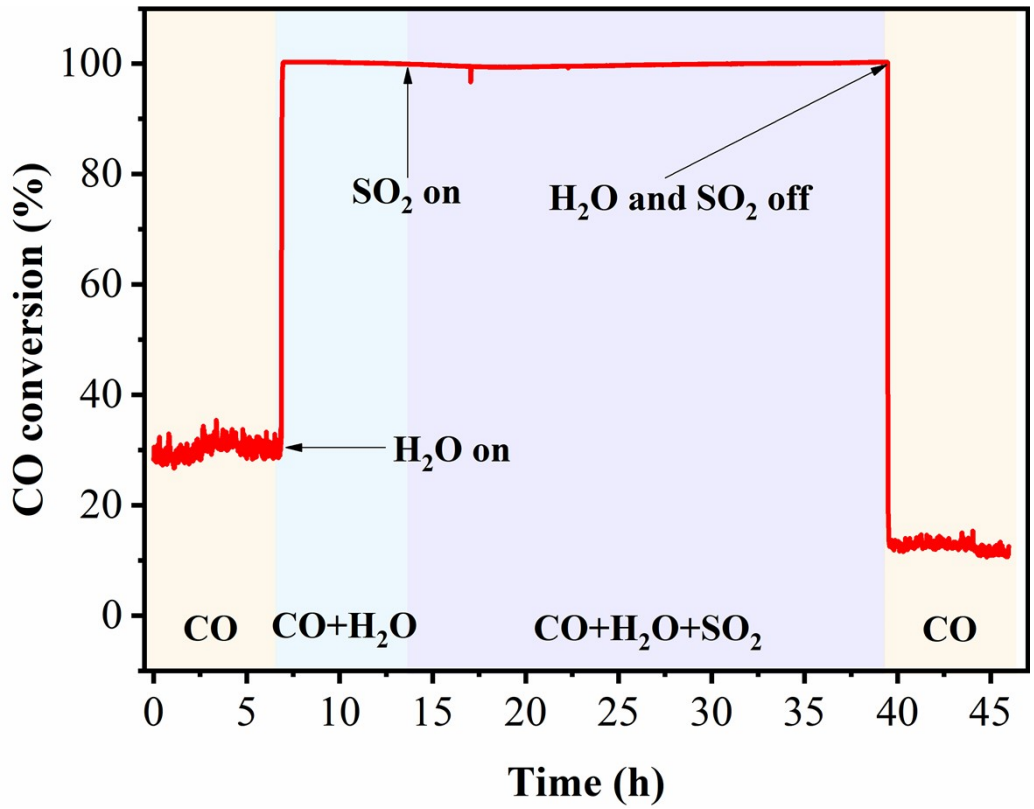

Fig. S3. Influence of H_2O and SO_2 on the Stability of CO Oxidation over 0.1Pt/Ti at 250 °C; Reaction conditions: 200 mg catalyst, 1 vol % CO, 16 vol % O_2, 10 vol % H_2O (when used), 50 ppm SO_2 (when used), WHSV = 60,000 $mL \cdot g_{cat}^{-1} \cdot h^{-1}$.

Table S1. Analysis result of different element content in catalysts using ICP-OES.

	0.1Pt/Ti (Pt)	**0.1Au/Ti (Au)**	**0.1Ru/Ti (Ru)**
Theoretical value	0.100 wt.%	0.100 wt.%	0.100 wt.%
Measured Value	0.082 wt.%	0.100 wt.%	0.085 wt.%

Table S2. BET specific surface area, pore volume and pore diameter of catalysts.

Catalysts	S_{BET} (m^2/g)	V_{pore} ($cm^3 \cdot g^{-1}$)	D_{pore} (nm)
0.1Pt/Ti	51.0	0.2	15.2
0.1Au/Ti	42.1	0.2	16.2
0.1Ru/Ti	44.9	0.2	15.9

Table S3. Proportion of different oxygen species on 0.1Pt/Ti, 0.1Au/Ti and 0.1Ru/Ti.

Catalysts	$O_{latt}/(O_{latt}+O_{ads})$	$O_{ads}/(O_{latt}+O_{ads})$
0.1Pt/Ti	84.2%	15.8%
0.1Au/Ti	85.7%	14.3%
0.1Ru/Ti	87.0%	13.0%