

**New insights into the influence mechanism of H₂O and SO₂ on Pt-W/Ti catalysts
for CO oxidation**

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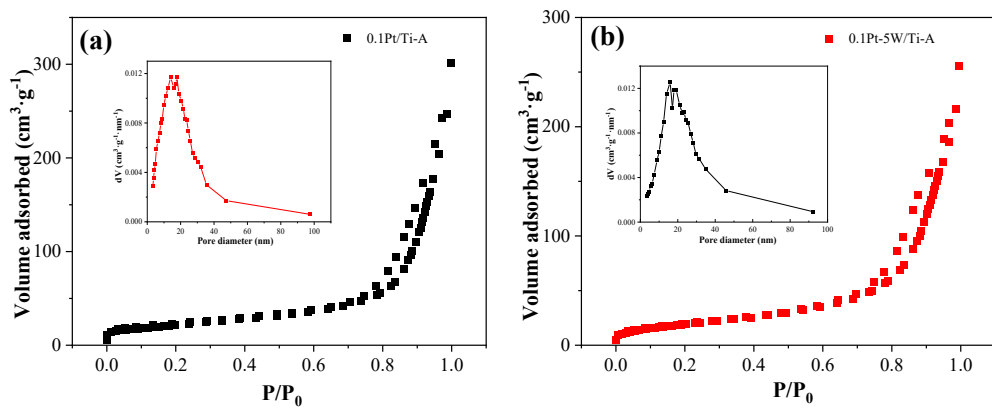


Fig. S1 N_2 adsorption/desorption isotherms of 0.1Pt/Ti-A and 0.1Pt-5W/Ti-A catalyst.

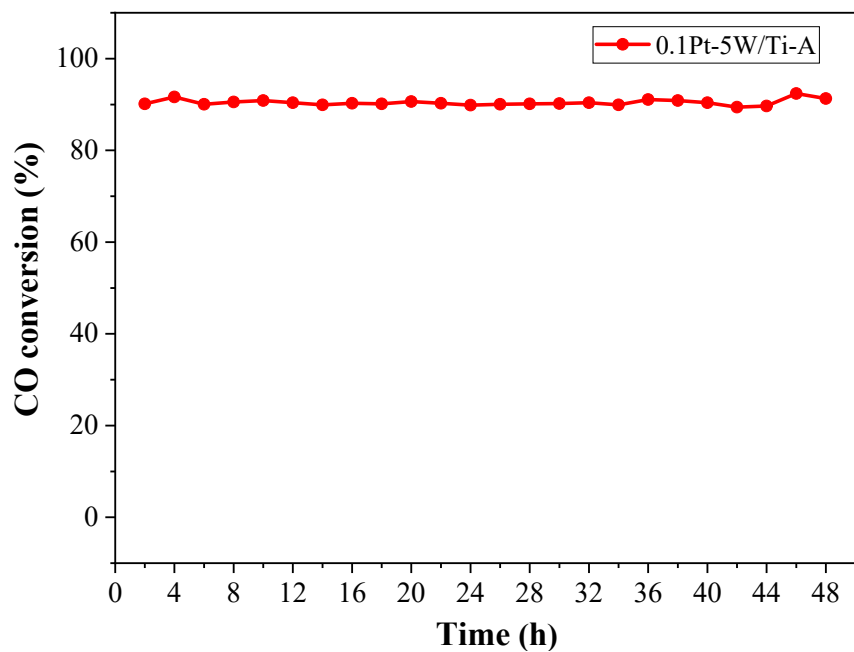


Fig. S2 The stability tests of 0.1Pt-5W/Ti-A, reaction conditions: 1% CO, 16% O₂, 200ppm NO, 10% H₂O, 50 ppm SO₂, N₂ as balance gas, and space velocity is 90000 mL·g⁻¹·h⁻¹ at 220 °C.

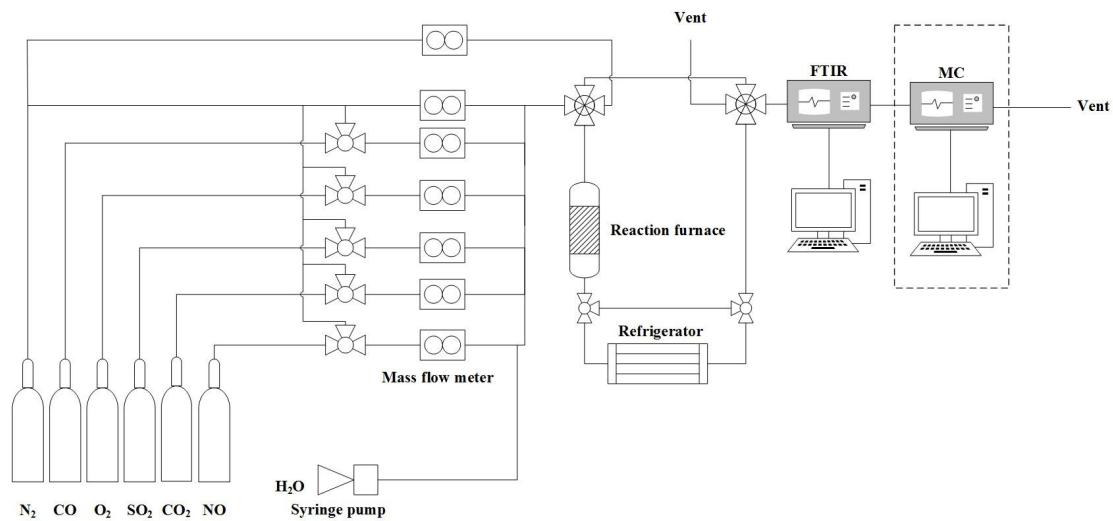


Fig. S3 Experimental platform for the catalytic oxidation of CO.

Table S1 BET specific surface area, pore volume and pore diameter of samples.

Sample	S_{BET} ($\text{m}^2 \cdot \text{g}^{-1}$)	V_{pore} ($\text{cm}^3 \cdot \text{g}^{-1}$)	D_{pore} (nm)
0.1Pt/Ti-A	69.43	0.292	13.8
0.1Pt-5W/Ti-A	65.29	0.285	13.5

Table S2 The relative oxygen species amounts (at. %) of the samples.

Sample	Binding Energy (eV)			$O_{\text{hydr}}/(O_{\text{hydr}}+O_{\text{latc}}+O_{\text{w}})$
	O_{latc}	O_{hydr}	O_{w}	
0.1Pt/Ti-A	530.4	532.0		21.07
0.1Pt-5W/Ti-A	530.2	531.8	530.0	7.75

Table S3 Details of S 2p peak deconvolution.

Sample	Binding Energy (eV)		Atomic %
	S 2p _{3/2}	S 2p _{1/2}	
0.1Pt-5W/Ti-A-6	168.9	170.2	2.15
0.1Pt-5W/Ti-A-24	168.5	170.1	2.04