

Supplementary Materials: Effect of Surface Copper Species on NO + CO Reaction over $x\text{CuO-Ce}_{0.9}\text{Zr}_{0.1}\text{O}_2$ Catalysts: in Situ DRIFTS Studies

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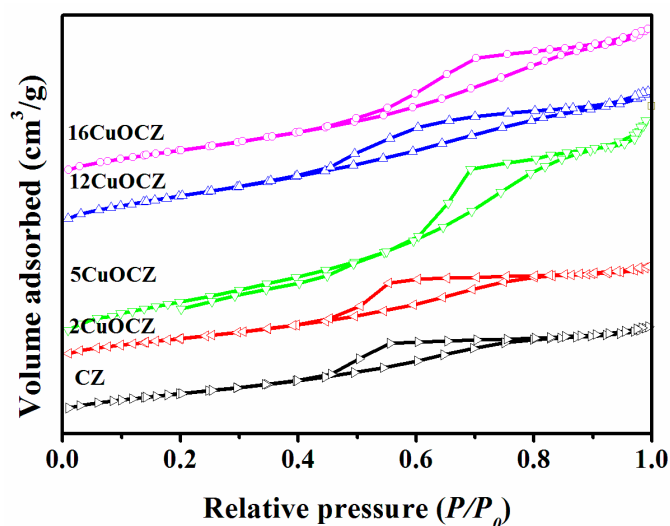


Figure S1. N_2 adsorption-desorption isotherms curves of CZ and $x\text{CuOCZ}$ catalysts.

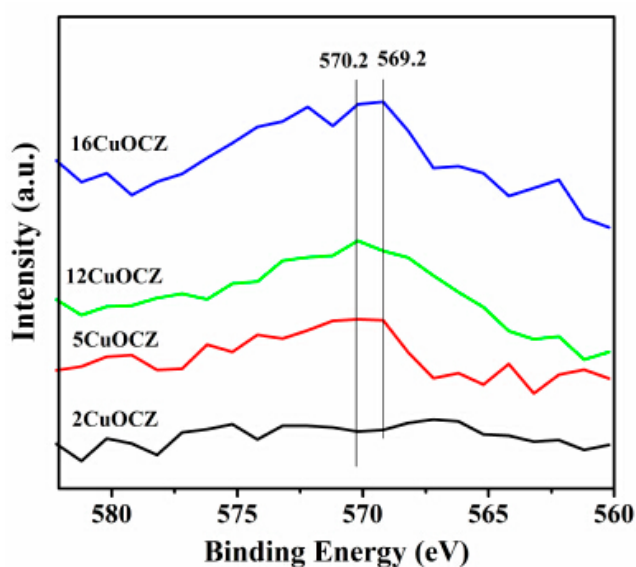


Figure S2. Cu-LMM Auger spectra of $x\text{CuOCZ}$.

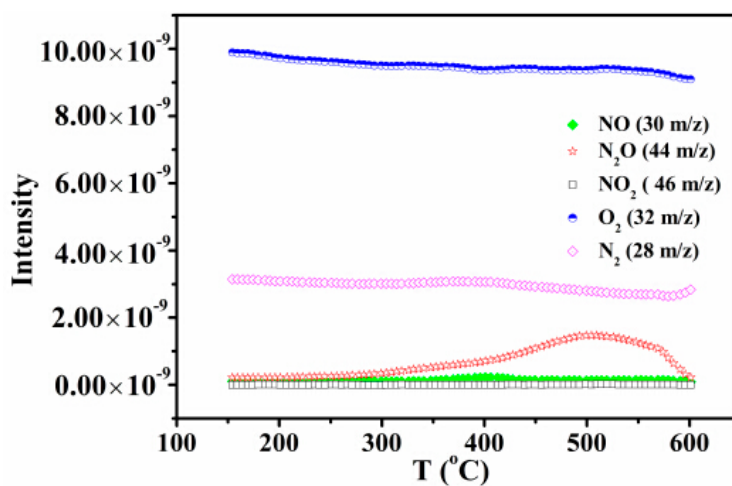


Figure S3. NO-TPD of CZ.

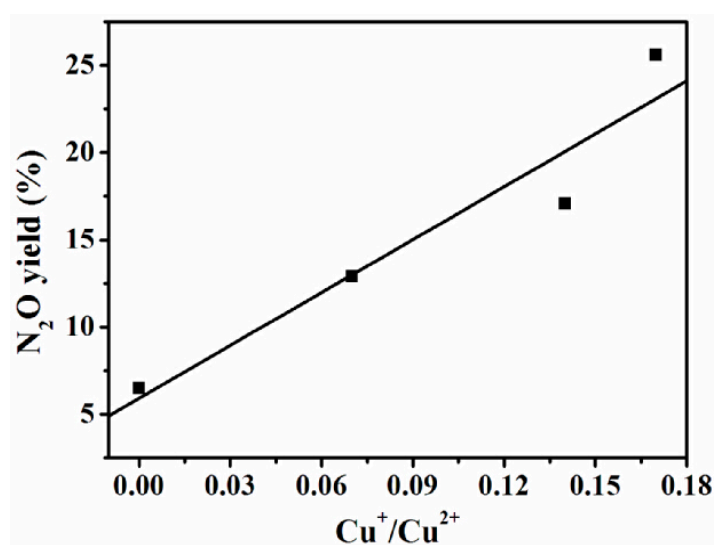
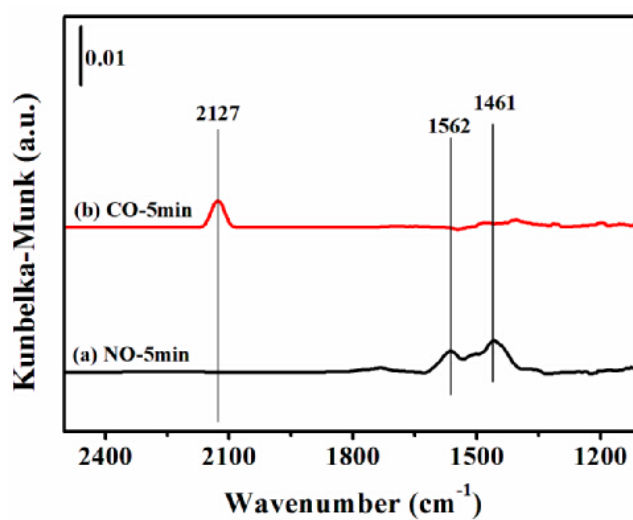
Figure S4. Relationship between N_2O yield at 150 °C and $\text{Cu}^+/\text{Cu}^{2+}$ ratio from XPS.Figure S5. DRIFTS spectra of adsorbates produced from the flow of (a) 0.5 vol % NO/N_2 for 5 min and (b) 0.5 vol % CO/N_2 for 5 min over CZ at 150 °C.

Table S1. Tested conditions for various catalysts for the NO + CO reaction.

Catalyst	Mass (mg)	Reaction Gas Concentration	Flow (mL·min ⁻¹)	GHSV ^a (mL·h ⁻¹ ·mL ⁻¹)	Temperature (°C)	NO Conversion (%)	N ₂ Yield (%)	N ₂ O Yield (%)	Reference
Cu/Ce _{0.75} Zr _{0.25} O ₂	100	1% CO/He + 1% NO/He	60	50,000	200	36	33	3	[1]
					250	88	88	-	
					300	99	99	-	
1.65Cu-CZ	50	5% NO, 10% CO, 85% He	-	12,000	200	78	30	-	[20]
					250	93	84	-	
					300	100	100	-	
Cu/MgO-CeO ₂	160	5000 ppm NO, 6000 ppm CO	70	16,000	200	96	85	-	[14]
					250	100	100	-	
					300	100	100	-	
12CuOCZ	100	1% CO/He + 1% NO/He	50	50,000	200	42	17	27	This work
					250	82	80	2	
					300	100	100	-	

^a Gas Hour Space Velocity.