

Electronic Supporting Information

Morphology-Dependent Oxygen Vacancies and Synergistic Effects of Ni/CeO₂ Catalysts for N₂O Decomposition

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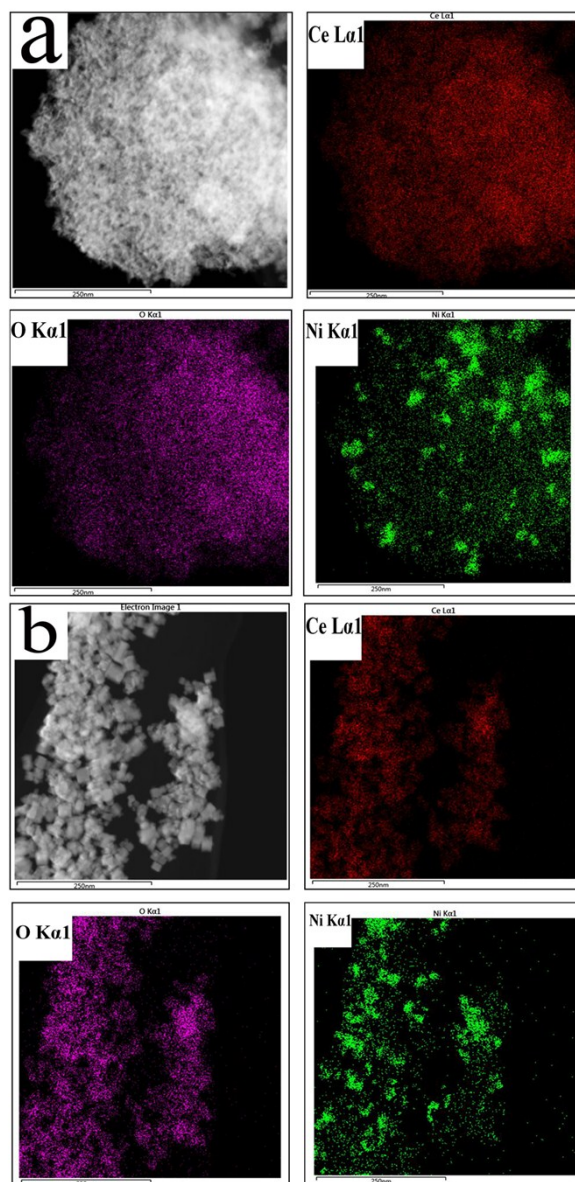


Fig. S1 STEM-EDS elemental mapping of nickel-ceria catalysts: (a) 8 % Ni /CeO₂-NR, and (b) 8 % Ni/CeO₂-NC.

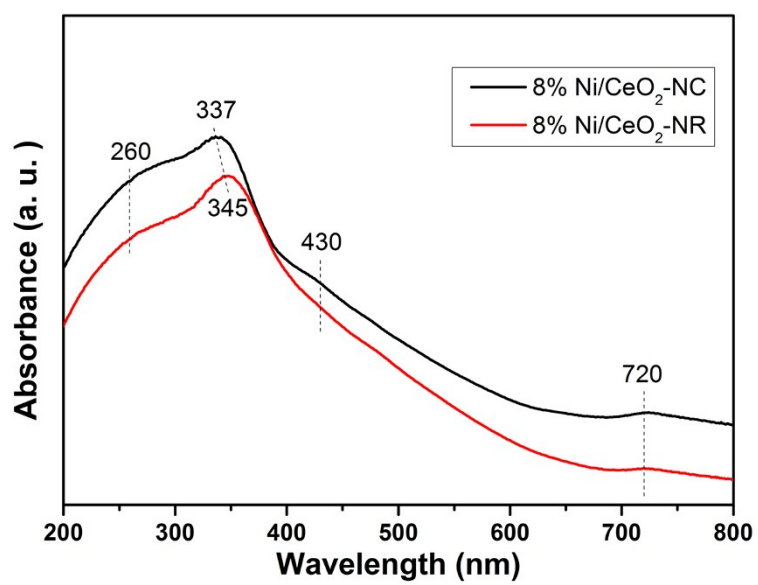


Fig. S2 DRS-UV-Vis spectra of 8 % Ni /CeO₂-NR and 8 % Ni/CeO₂-NC.

Table S1 Ratio of H₂-TPR peak area and turnover frequency (TOF) of samples.

Samples	^a / + δ	δ^a / + δ	TOF ^b (s ⁻¹)	
			Ni-O-Ce ^c	NiO ^c
CeO ₂ -NR	—	—	—	—
2 % Ni /CeO ₂ -NR	0.46	0.54	2.94×10 ⁻²	3.41×10 ⁻²
4 % Ni /CeO ₂ -NR	0.54	0.46	4.62×10 ⁻²	3.92×10 ⁻²
6 % Ni /CeO ₂ -NR	0.64	0.36	7.22×10 ⁻²	4.05×10 ⁻²
8 % Ni /CeO ₂ -NR	0.74	0.26	18.02×10 ⁻²	6.04×10 ⁻²
10 % Ni /CeO ₂ -NR	0.75	0.25	11.39×10 ⁻²	3.88×10 ⁻²
CeO ₂ -NC	—	—	—	—
2 % Ni/CeO ₂ -NC	0.71	0.29	22.80×10 ⁻²	9.31×10 ⁻²
4 % Ni/CeO ₂ -NC	0.73	0.27	25.50×10 ⁻²	9.44×10 ⁻²
6 % Ni/CeO ₂ -NC	0.74	0.26	26.70×10 ⁻²	9.48×10 ⁻²
8 % Ni/CeO ₂ -NC	0.78	0.22	39.70×10 ⁻²	10.99×10 ⁻²
10 % Ni/CeO ₂ -NC	0.80	0.20	38.62×10 ⁻²	9.26×10 ⁻²

^a Values determined by H₂-TPR peak area.^b The TOF value was calculated at 325°C.^c The amount of active sites of Ni-O-Ce and NiO were calculated based on H₂-TPR.