



Catalysis Science & Technology

ARTICLE

Supplementary Information For

Role of Lattice Oxygen on CO Oxidation Over Ce^{18}O_2 -Based Catalyst Revealed Under Operando Conditions.

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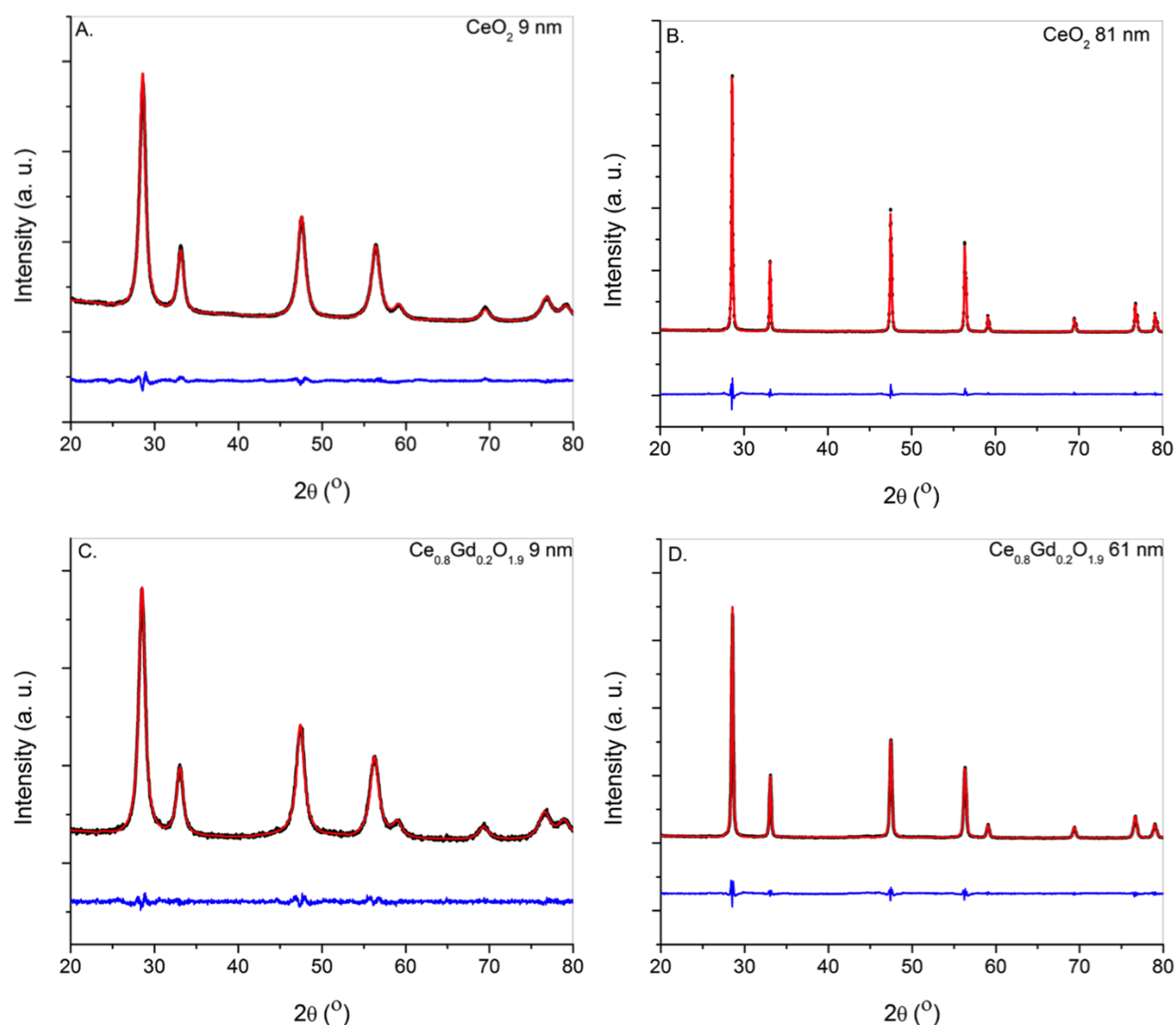


Figure S 1 Structural characterization obtained from X-Ray diffraction (Cu K α 1,2 radiation). Structural characterization of: A. NCEO, B. BCEO, C. NCGO and D. BCEO. Rietveld Refinement (using FullProf software) of the patterns has been included in the figure. The black solid lines and overlying red patterns indicate the observed and calculated intensities. The difference between the observed and calculated profiles is plotted at the bottom in blue; Refinement parameters in the table below:

Sample	lattice parameter (Å)	crystalline size [nm]	R_{Bragg}	R_{f}	χ^2	space group
BCEO	$a = 5.409$	81	0.798	0.563	5.15	Fm-3m
BCGO	$a = 5.417$	61	1.85	0.933	4.57	Fm-3m
NCEO	$a = 5.410$	9	0.830	0.614	2.71	Fm-3m
NCGO	$a = 5.422$	9	0.687	0.413	1.62	Fm-3m

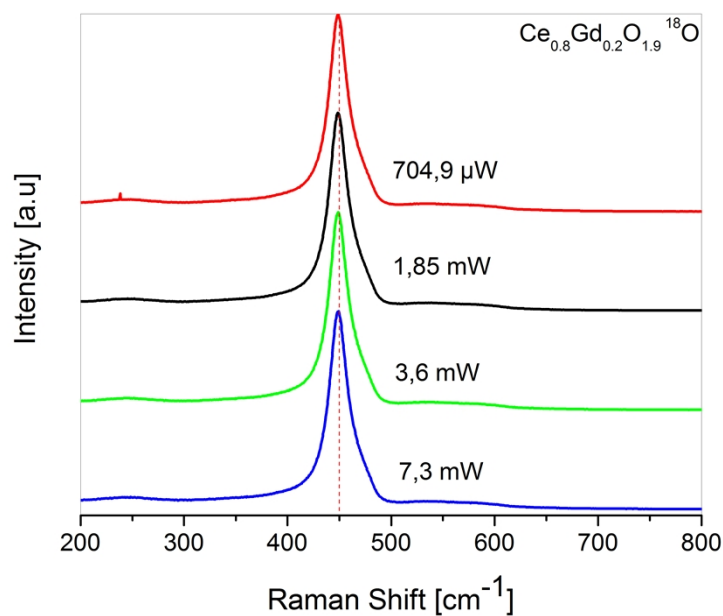


Figure S 2 Effect of the laser source power on the NCGO ^{18}O .

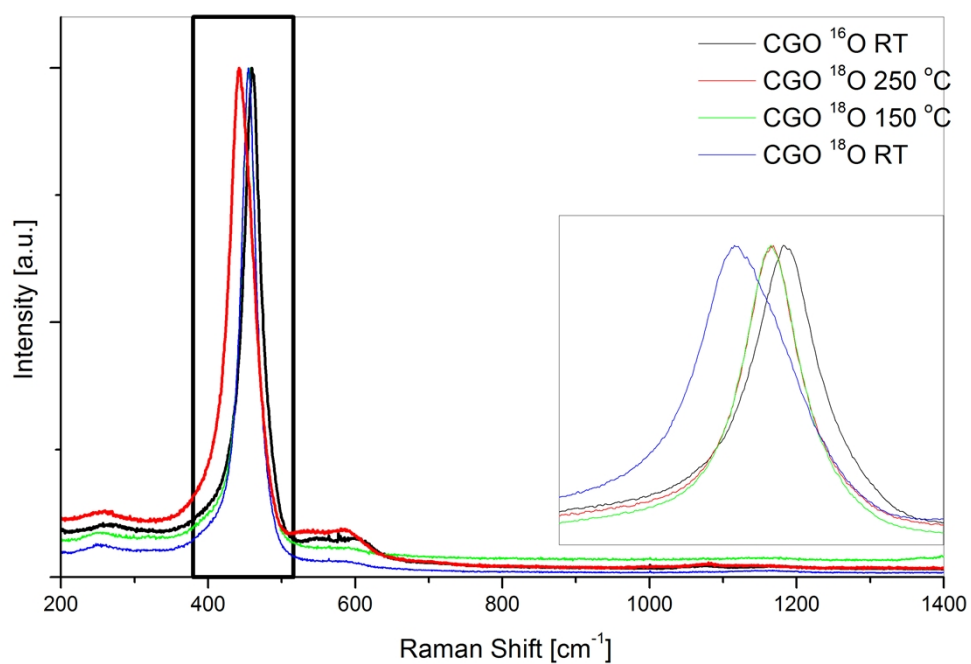


Figure S 3 Raman Spectra taken a RT on the NCGO ^{16}O , NCGO ^{18}O and Ex-Situ preheated NCGO ^{18}O at 250 $^{\circ}\text{C}$

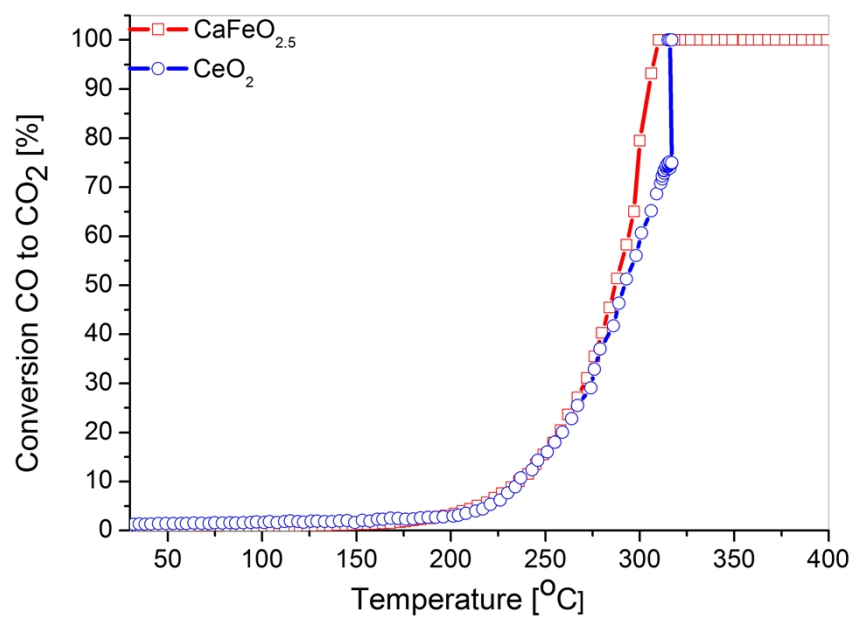


Figure S 4 CO oxidation over CeO₂ (blue line) and CaFeO_{2.5} (red line).

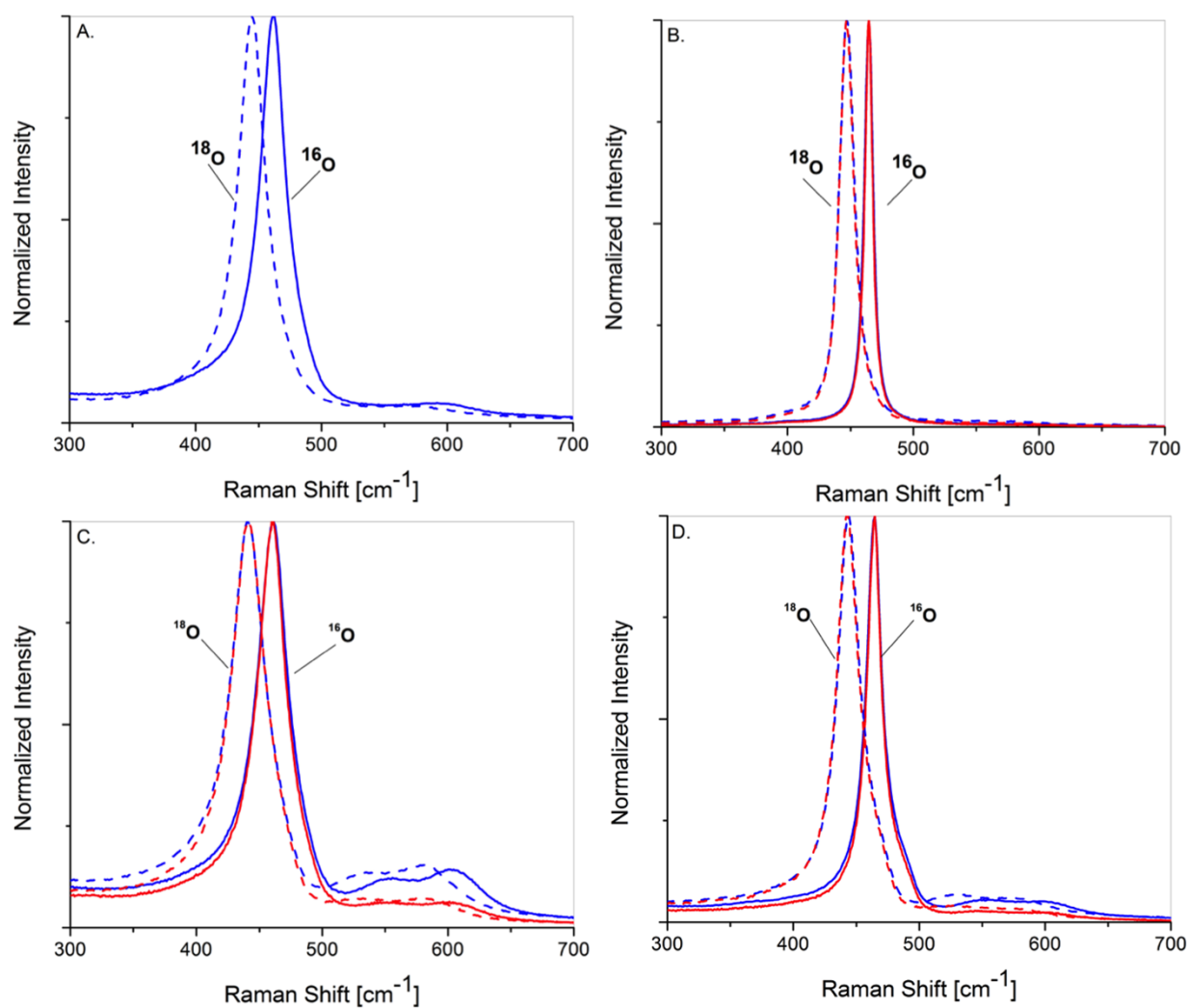


Figure S 5 Normalized Raman Spectra of: A. NCE ^{18}O ; B. BCE ^{18}O ; C. NCG ^{18}O ; D. BCG ^{18}O . Red lines stand for HeNe laser source, whereas blue lines indicate D473 laser source. Solid lines mark samples containing ^{16}O and dashed lines mark samples containing ^{18}O .