

## **Structural features and catalytic performance in CO preferential oxidation of CuO-CeO<sub>2</sub> supported on multi-walled carbon nanotubes**

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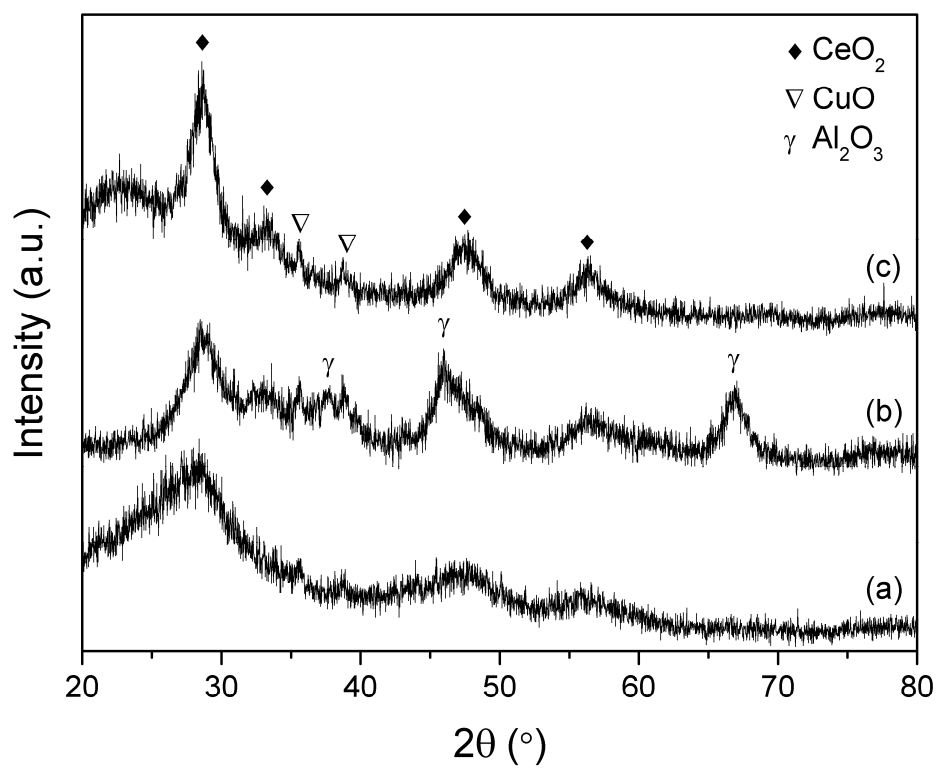
**Table S1** Structure characteristics for CuO-CeO<sub>2</sub> catalysts supported on different materials

Catalyst	Cu/Ce <sup>a</sup>	Cu/Ce <sup>b</sup>	Cu/Ce <sup>c</sup>	<i>d</i> <sub>CeO<sub>2</sub></sub> (nm)	Ce <sup>3+</sup> /Ce <sub>total</sub>
CuO-CeO <sub>2</sub> (5/5)/AC	1.00	1.03	2.62	3.1	0.29
CuO-CeO <sub>2</sub> (5/5)/Al <sub>2</sub> O <sub>3</sub>	1.00	0.97	0.91	3.5	0.40
CuO-CeO <sub>2</sub> (5/5)/SiO <sub>2</sub>	1.00	0.95	0.86	4.1	0.24

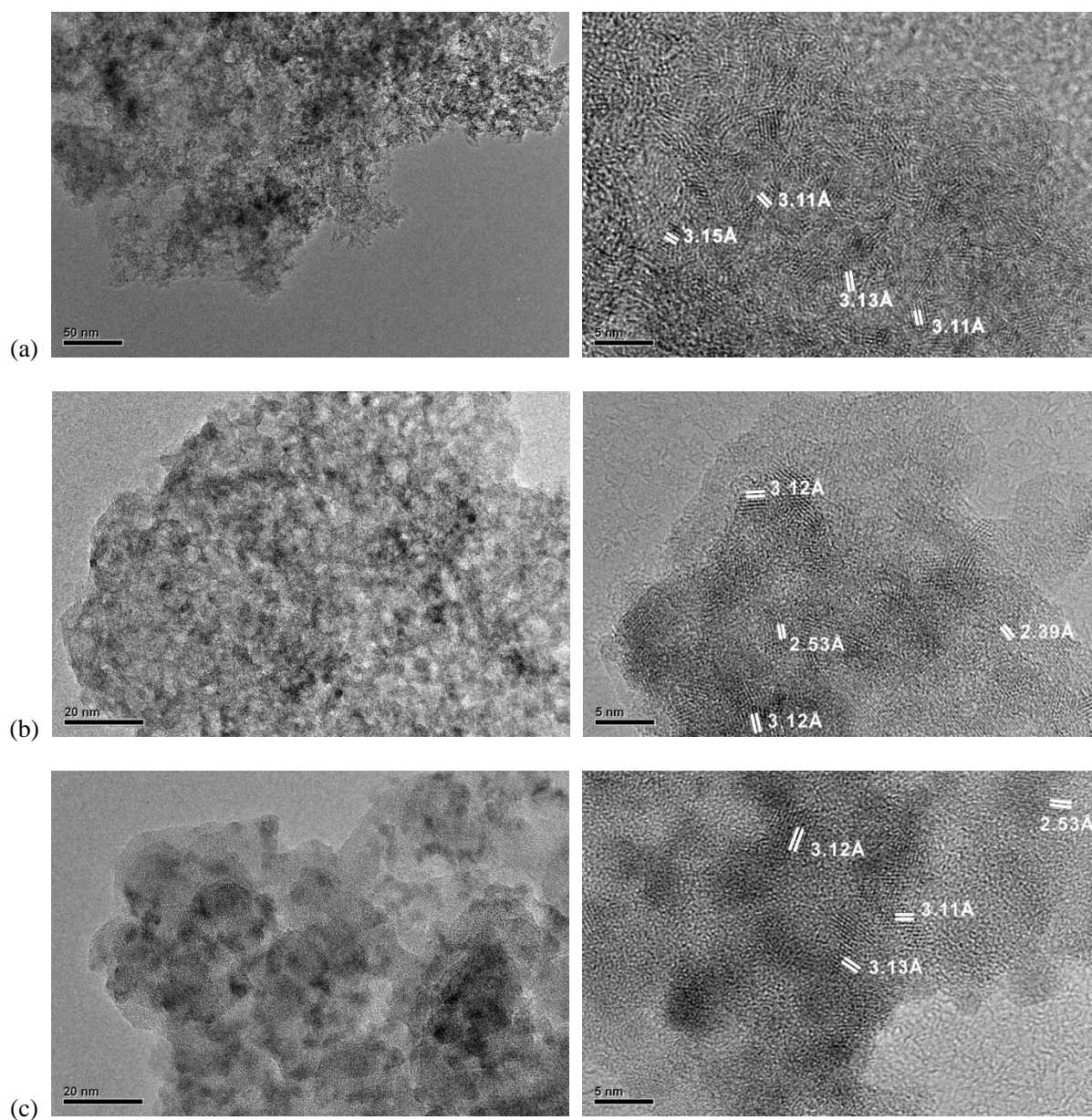
<sup>a</sup> Cu/Ce ratio according to the nominal composition.

<sup>b</sup> Cu/Ce ratio determined by ICP-AES.

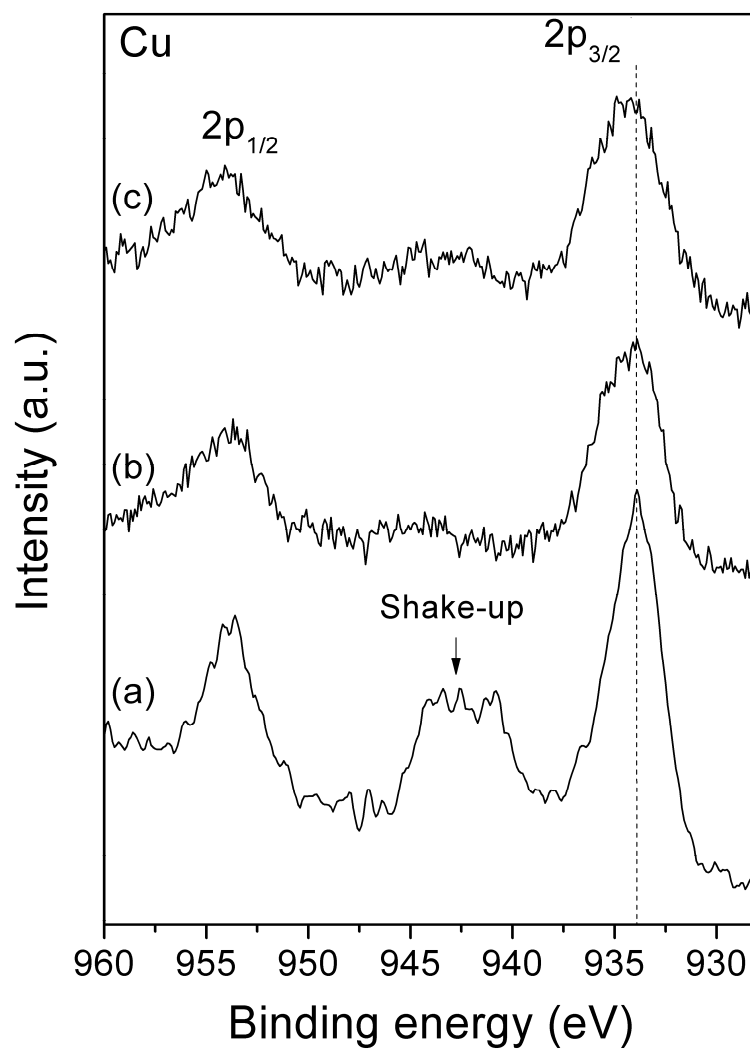
<sup>c</sup> Cu/Ce ratio determined by XPS.



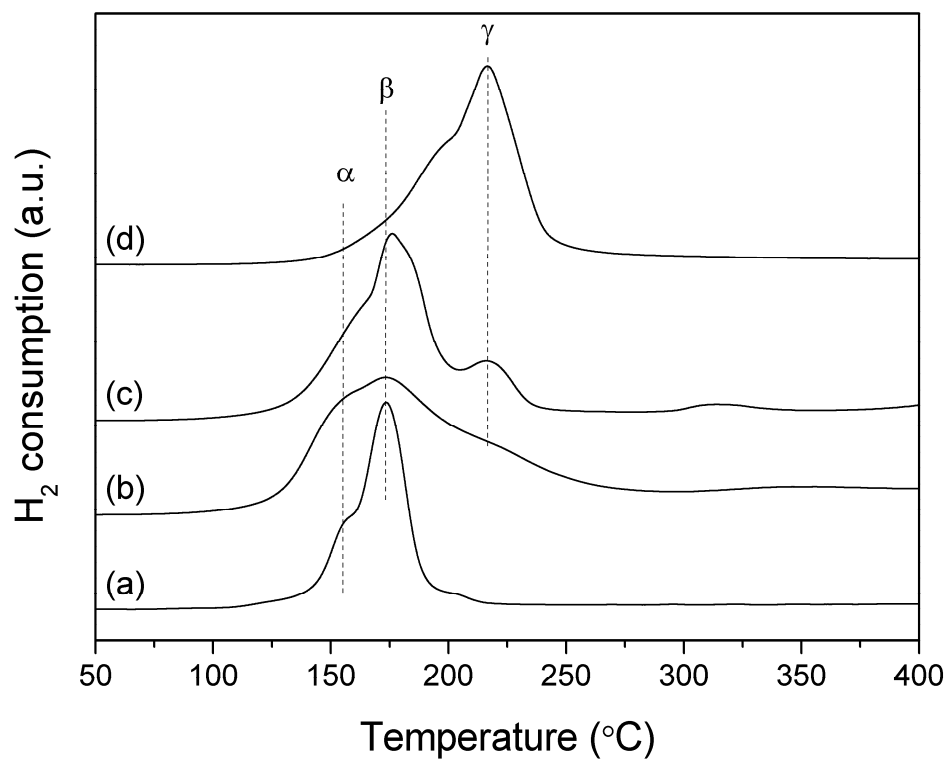
**Fig. S1.** XRD patterns of  $\text{CuO-CeO}_2$  catalysts supported on different materials: (a)  $\text{CuO-CeO}_2(5/5)/\text{AC}$ , (b)  $\text{CuO-CeO}_2(5/5)/\text{Al}_2\text{O}_3$ , (c)  $\text{CuO-CeO}_2(5/5)/\text{SiO}_2$ .



**Fig. S2.** TEM (left) and HRTEM (right) images of CuO-CeO<sub>2</sub> catalysts supported on different materials: (a) CuO-CeO<sub>2</sub>(5/5)/AC, (b) CuO-CeO<sub>2</sub>(5/5)/Al<sub>2</sub>O<sub>3</sub>, (c) CuO-CeO<sub>2</sub>(5/5)/SiO<sub>2</sub>.



**Fig. S3.** Cu 2p core level spectra of CuO-CeO<sub>2</sub> catalysts supported on different materials: (a) CuO-CeO<sub>2</sub>(5/5)/AC, (b) CuO-CeO<sub>2</sub>(5/5)/SiO<sub>2</sub>, (c) CuO-CeO<sub>2</sub>(5/5)/Al<sub>2</sub>O<sub>3</sub>.



**Fig. S4.** H<sub>2</sub>-TPR profiles of CuO-CeO<sub>2</sub> catalysts supported on different materials: (a) CuO-CeO<sub>2</sub>(5/5)/CNT, (b) CuO-CeO<sub>2</sub>(5/5)/AC, (c) CuO-CeO<sub>2</sub>(5/5)/SiO<sub>2</sub> and (d) CuO-CeO<sub>2</sub>(5/5)/Al<sub>2</sub>O<sub>3</sub>.