

## **Cu/CeO<sub>2</sub> catalysts for reverse water gas shift reactions: the effect of preparation method**

Jieru Wang<sup>1, 2, 3, 4</sup>; Chaoxian Wang<sup>1, 2, 3, 4</sup>; Yongqiang Feng<sup>1, 2, 3, 4</sup>; Fang Li<sup>1, 2, 3, 4</sup>;

Wanting Su<sup>1, 2, 3, 4</sup>; Yuanyuan Fang<sup>1, 2, 3, 4</sup>; Binran Zhao<sup>1, 2, 3, 4, \*</sup>

<sup>1</sup>School of Chemical Engineering, Northwest University, Xi'an 710069, China;

<sup>2</sup>International Scientific and Technological Cooperation Base of the Ministry of Science and Technology (MOST) for Clean Utilization of Hydrocarbon Resources, Xi'an 710069, China;

<sup>3</sup>Chemical Engineering Research Center of the Ministry of Education (MOE) for Advanced Use Technology of Shanbei Energy, Xi'an 710069, China;

<sup>4</sup>Shaanxi Research Center of Engineering Technology for Clean Coal Conversion, Xi'an 710069, China;

**Correspondence Authors:** zhaobr3636@126.com (B. R. Zhao);

**Table S1** BET parameters of Cu/CeO<sub>2</sub> and crystal surface ratio.

**Figure S1** XRD patterns of Cu/CeO<sub>2</sub>-mc, Cu/CeO<sub>2</sub>-mcc-1, Cu/CeO<sub>2</sub>-mcc-2 and CeO<sub>2</sub>-C support.

**Figure S2** Line scan of (a) Cu/CeO<sub>2</sub>-mc and (b) Cu/CeO<sub>2</sub>-mcc (green for Ce, purple for Cu, red for line scan position).

**Figure S3** CO<sub>2</sub> conversion and CO selectivity over Cu/CeO<sub>2</sub>-mc, Cu/CeO<sub>2</sub>-mcc and Cu/CeO<sub>2</sub>-c versus temperature.

**Figure S4** TEM images of Cu/CeO<sub>2</sub>-c (a) 50 nm and (b) 10 nm.

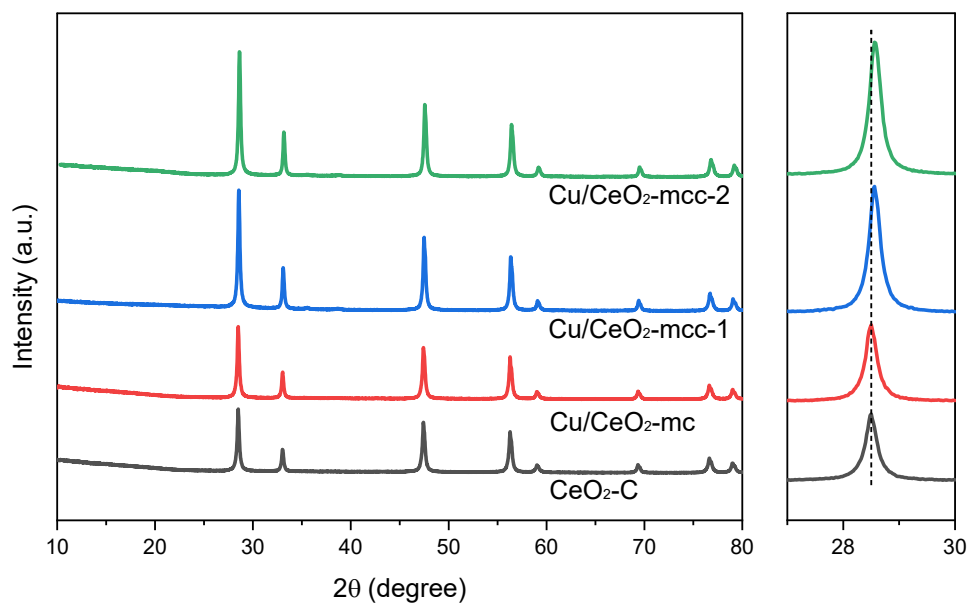
**Figure S5** (a) Micro-combustion process image and (b) infrared thermography image.

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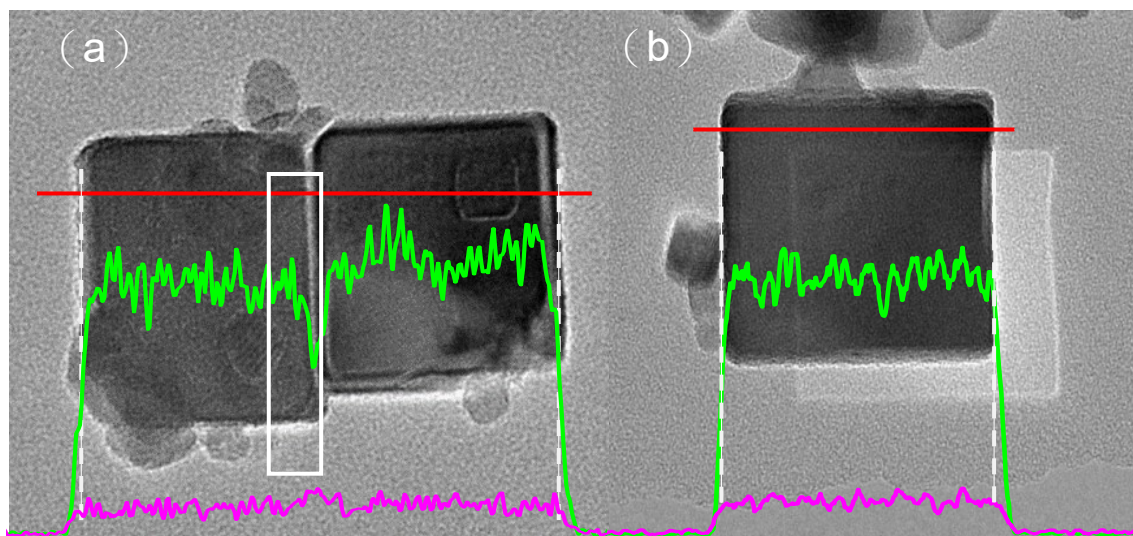
Catalysts	S <sub>BET</sub> (m <sup>2</sup> /g) <sup>a</sup>	V <sub>p</sub> (cm <sup>3</sup> /g) <sup>a</sup>	D <sub>p</sub> (nm) <sup>a</sup>	I <sub>(111)</sub> /I <sub>(100)</sub> <sup>b</sup>
Cu/CeO <sub>2</sub> -mc	28.8	0.1	16.0	2.6
Cu/CeO <sub>2</sub> -mcc	28.8	0.1	16.1	2.3
CeO <sub>2</sub>	29.0	0.1	18.5	

a Determined by N<sub>2</sub> adsorption.

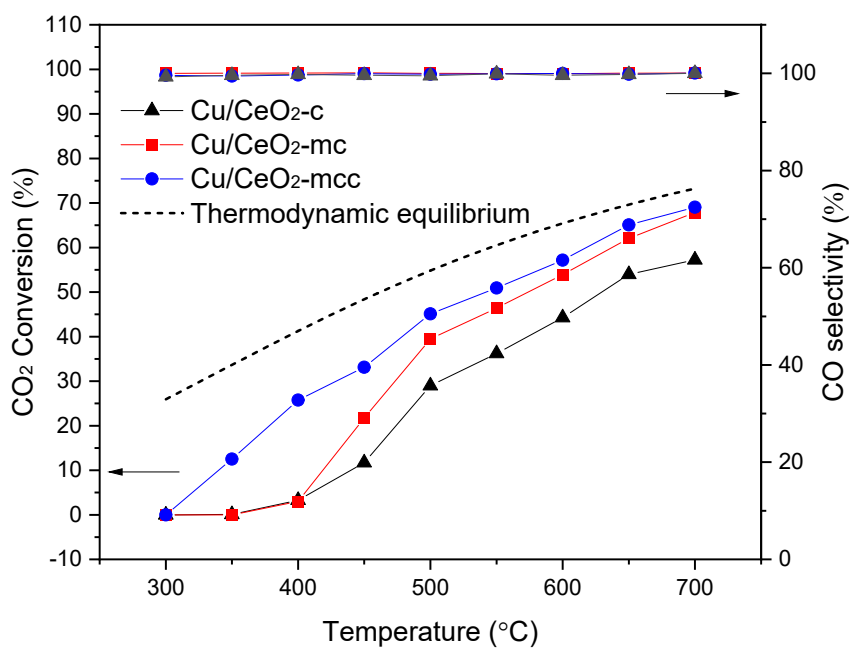
b Determined by XRD.



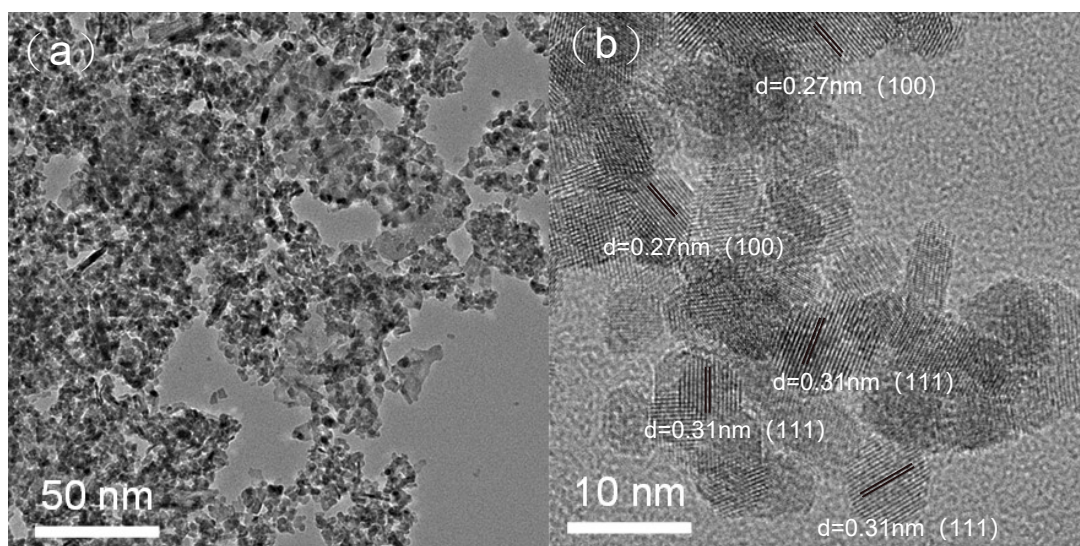
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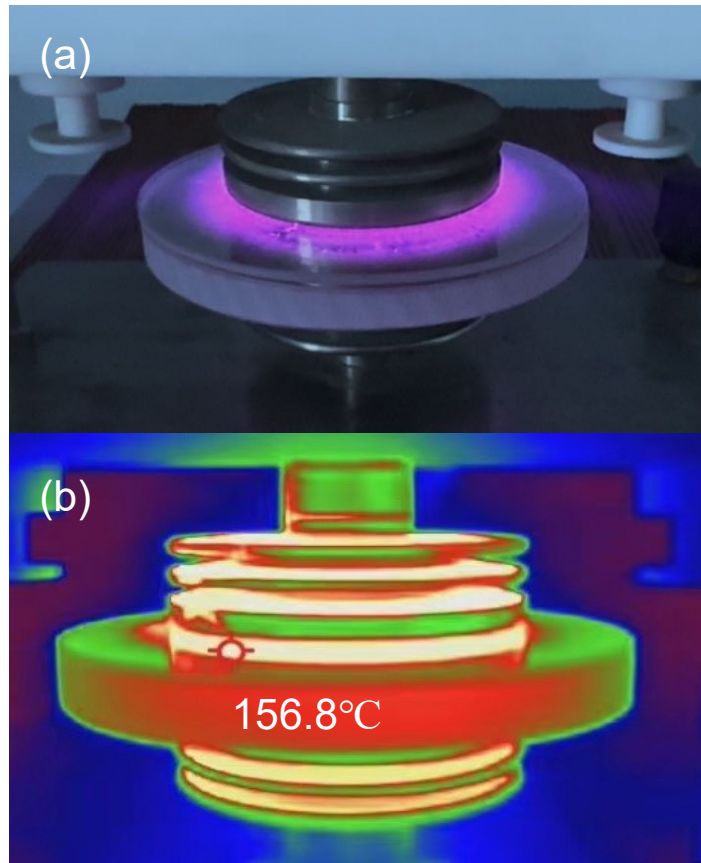
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