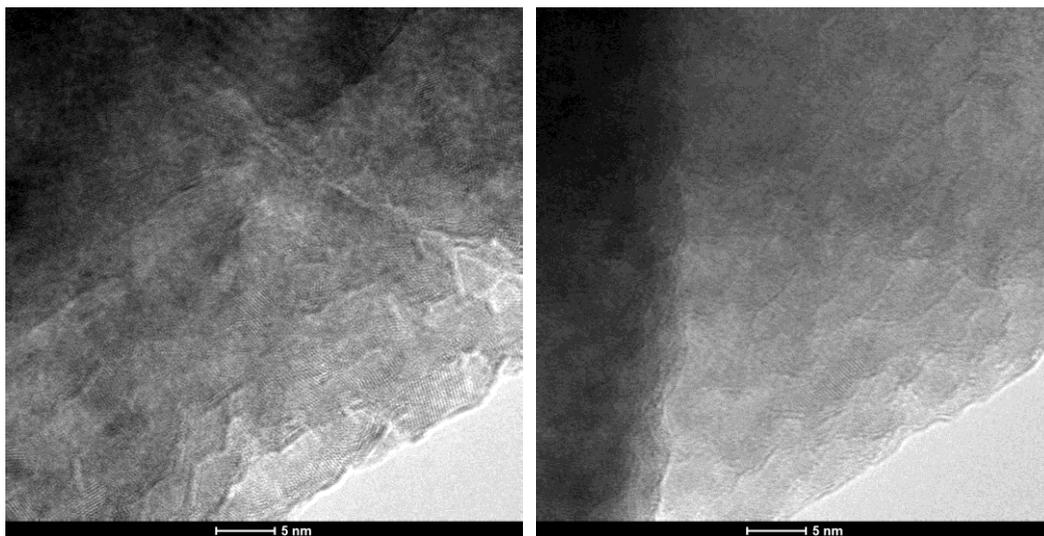


# Effect of growth temperature and time on morphology and gas-sensitivity of $\text{Cu}_2\text{O}$ microstructures

*Ling Wu\**, *Lun Zhang\**, *Zhipeng Xun*, *Guili Yu*, *Liwei Shi*

College of Sciences, China University of Mining and Technology, Xuzhou City, 221116, P. R. China.

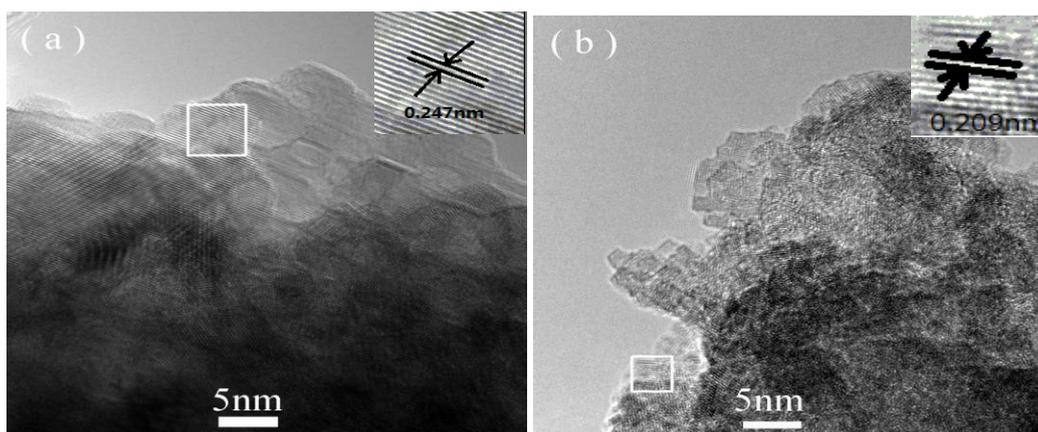


**Fig. S1** HRTEM images of  $\text{Cu}_2\text{O}$  octahedral particle obtained at 20 °C. The surface of octahedral particle was not smooth, which has been piled up by approximately 5 nm ultrafine particles like fish scales.

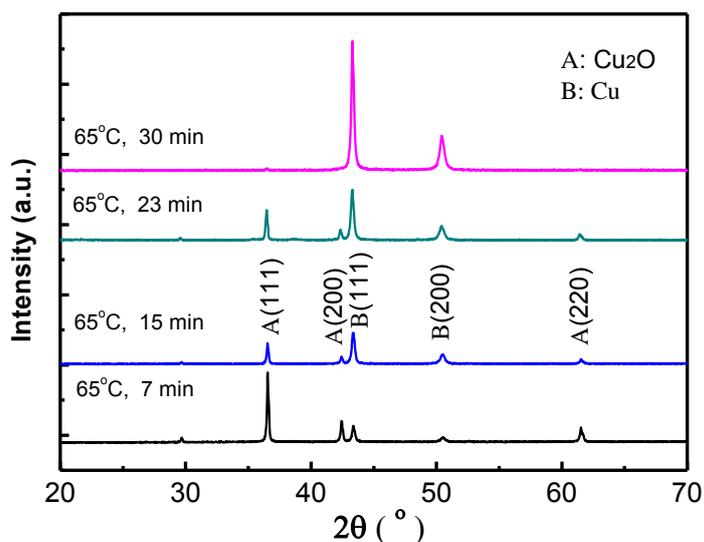
---

\* [wlw@cumt@163.com](mailto:wlw@cumt@163.com)

\* [zhanglun05@163.com](mailto:zhanglun05@163.com)



**Fig. S2** HRTEM images of  $\text{Cu}_2\text{O}/\text{Cu}$  composites obtained at  $65^\circ\text{C}$  for 15 min, the inserts corresponding to the white marked regions. (a) The lattice fringes have interplanar spacing of 0.247 nm, which is in agreement with the cubic  $\text{Cu}_2\text{O}$  (111) planes; (b) The lattice fringes have interplanar spacing of 0.209 nm, which is in agreement with the cubic Cu (111) planes.



**Fig. S3** XRD patterns of samples synthesized for various time at  $65^\circ\text{C}$ .

As expected, the content of Cu in the  $\text{Cu}_2\text{O}/\text{Cu}$  composite increased with increasing the reaction time to produce a range of composite with controllable composition.