Supporting information for

Synthesis of Porous Cu_2O/CuO Cages using Cu-based Metal-Organic-Framework as Templates and their Gas-sensing Properties

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Table S1. Comparison of the gas sensing performances of Cu_2O, CuO or Cu_2O/CuO based sensors.

Materials	*Morphology*	*Surface area* ($m^2 \cdot g$)	*Operation Temperature* (°C)	*Sensitivity* (for detected gas)	*Ref.*
Cu_2O	Polyhedral cages	–	*210*	*8.53 (50 ppm ethanol)*	*[42]*
	Hierarchical microspheres	–	–	*8.2 (100 ppm ethanol)*	*[43]*
	Solid nanocubes	–	*200*	*1.6 (100 ppm ethanol)*	*[44]*
	Porous spheres	–	*210*	*Cu_2O > CuO*	*[39]*
CuO	*Cloudlike nanoparticles*	–	*300*	*4.6 (100 ppm CO)*	*[45]*
	Hierarchical porous boxes	*18.2*	*400*	*1.8 (100 ppm ethanol)*	*[35]*
	nanosheets	15.0	*260*	*2.4 (100 ppm ethanol)*	*[38]*
	urchin-like	*26*	*200*	*5.8 (100 ppm H_2)*	*[46]*
Cu_2O/CuO	*Porous spheres*	*67*	*95*	*6.2 (1 ppm H_2S)*	*[34]*
	Porous cubes	*28*	*150*	2.0 (*500 ppm ethanol)*	*[37]*
	Porous microframes	–	*240*	*1.5 (100 ppm CO)*	*[40]*

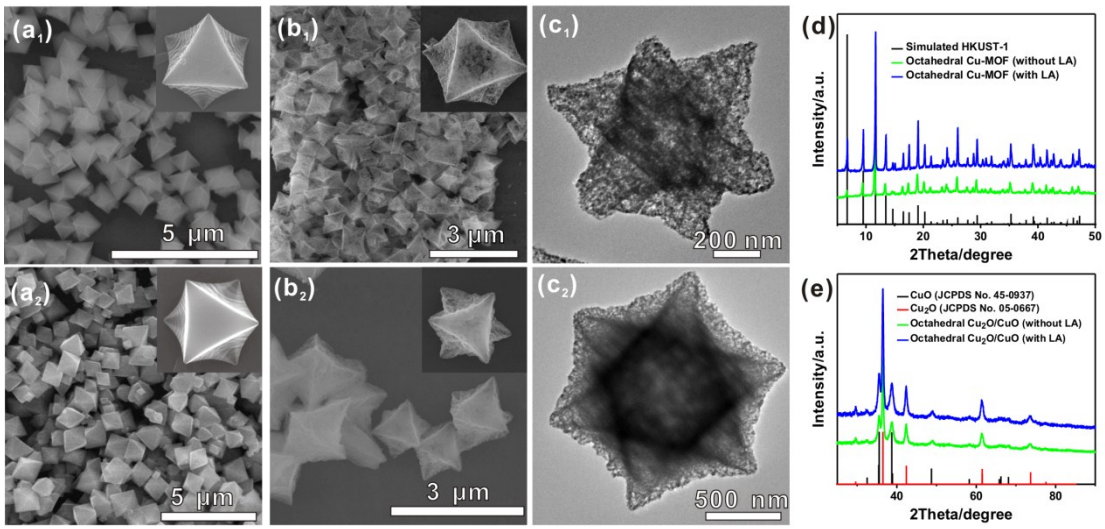

Fig. S1 (a_1, a_2) SEM images of the octahedral HKUST-1 precursors synthesized by the methods (1) without LA and (2) with LA. (b_1, b_2) SEM images and (c_1, c_2) TEM images of the octahedra Cu_2O/CuO cages converted from two precursors above. XRD patterns of (d) the octahedral HKUST-1 precursors synthesized by the two methods and (e) their decomposed products.

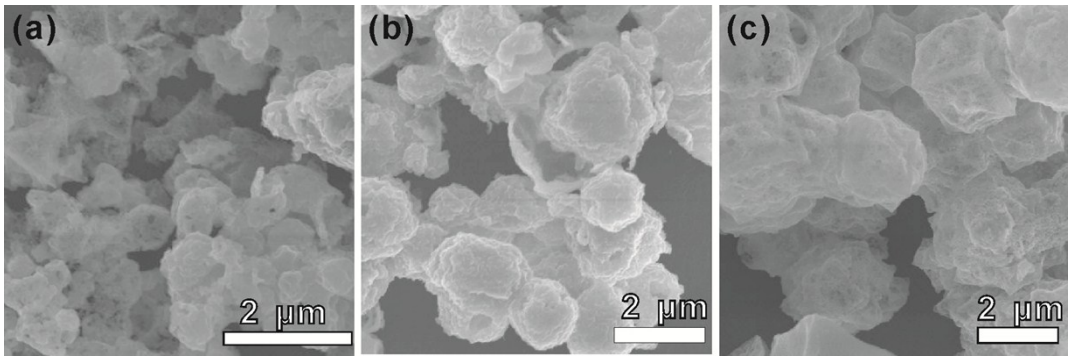

Fig. S2 SEM images of the products after calcination at 350 °C with (a) octahedral, (b) truncated octahedral, and (c) cubic precursors.