Electronic Supplementary Material (ESI) for Journal of Materials Chemistry A.

Supporting Information:

Cu_2O nanorods modified by reduced graphene oxide for NH_3 sensing at room temperature

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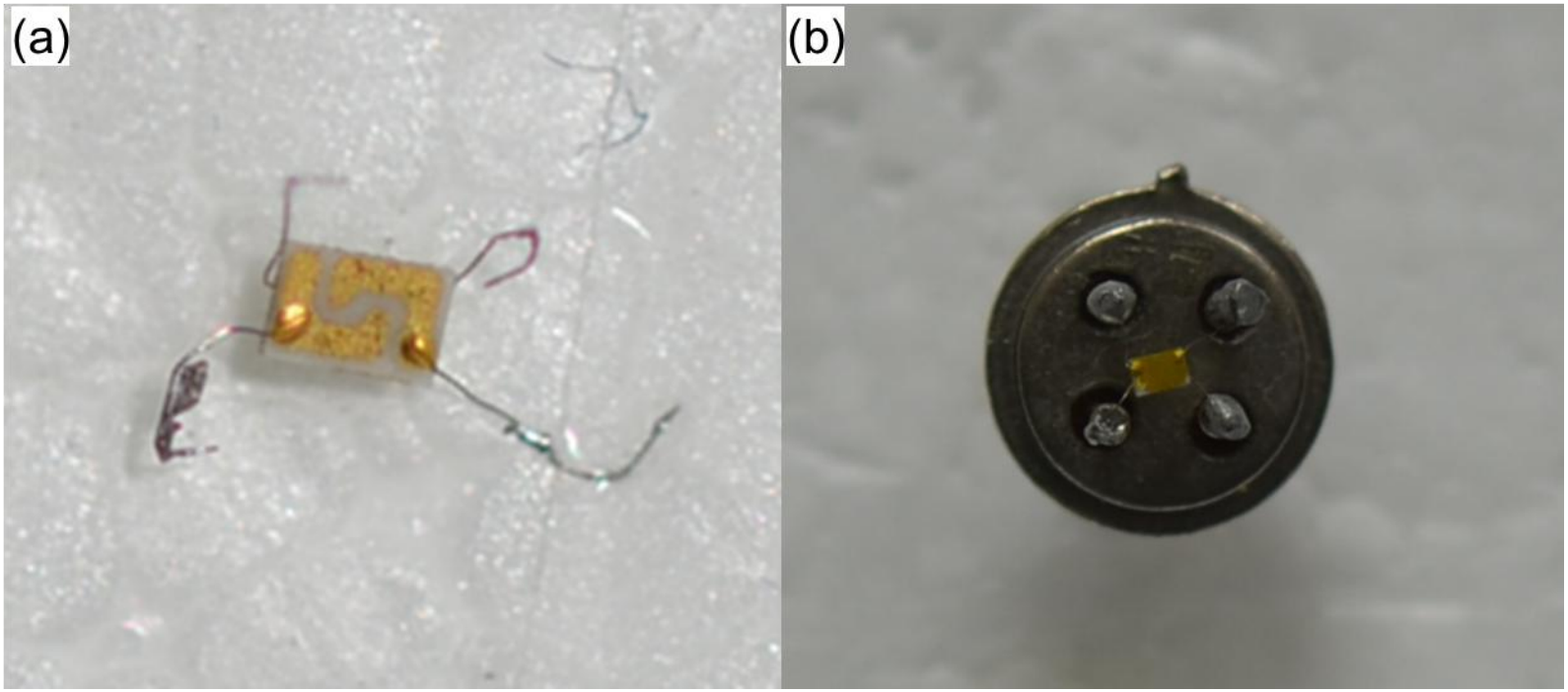

Figure S1. (a) Photograph of the blank sensor. (b) Photograph of the sensor coated with the sensing material.

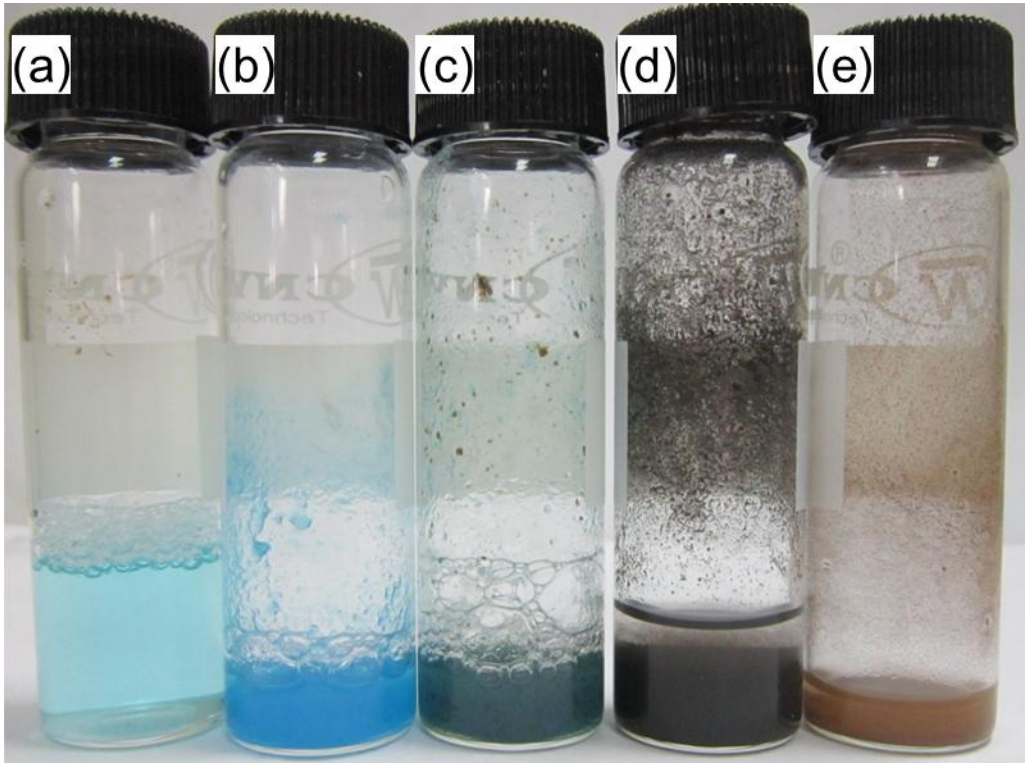

Figure S2. Optical images of the $CuCl_2$ solution (a), $CuCl_2$ solution after NaOH was added (b), $CuCl_2$ and NaOH solution after GO was added (c), CuO/rGO composites after microwave-assisted hydrothermal reaction (d) and obtained Cu_2O/RGO composites after annealing (e).

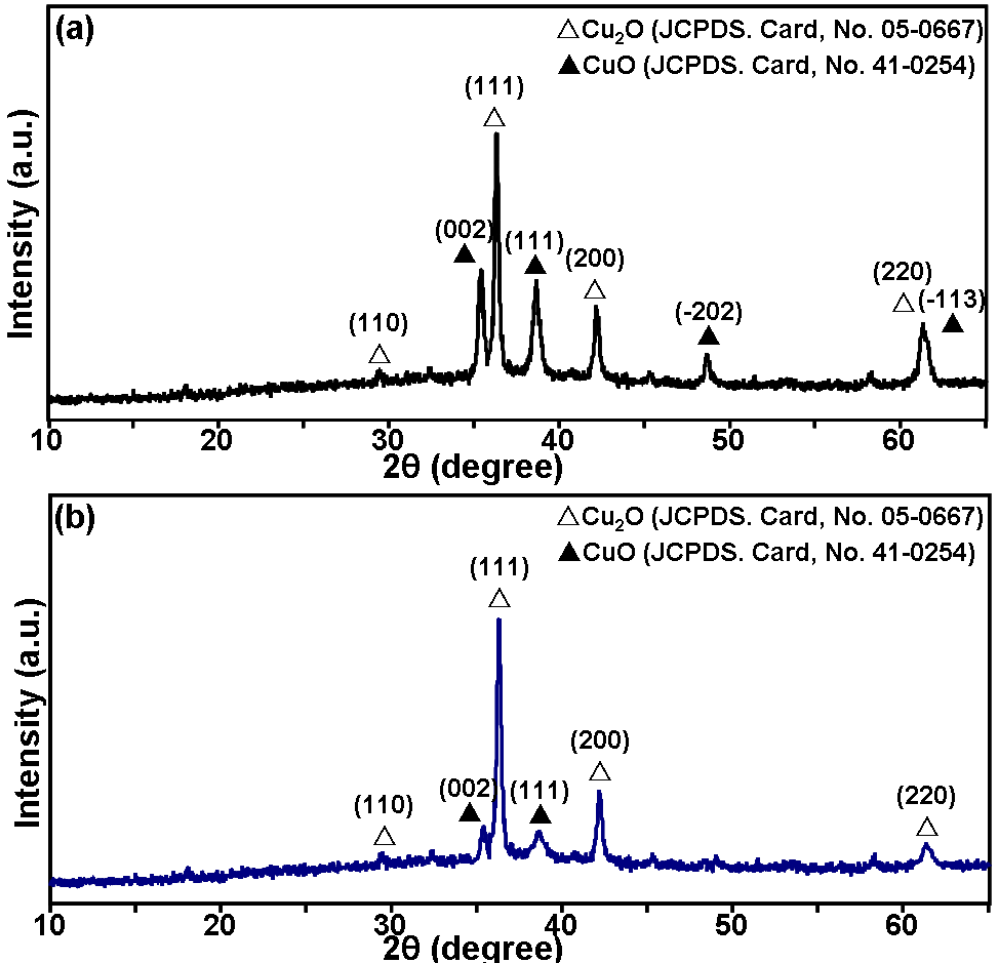

Figure S3. Typical XRD patterns of the products after annealing for 1 h (a) and 6 h (b) at 400 ℃ and under a continuous N_2 flow of 100 sccm. According to the relative ratio of the diffraction intensity ($I_{Cu2O\ (111)}$ / ($I_{CuO\ (111)}$+ $I_{Cu2O\ (111)}$)), the reduction degrees of CuO were estimated as 70% and 91% (wt%) for (a) and (b), separately.

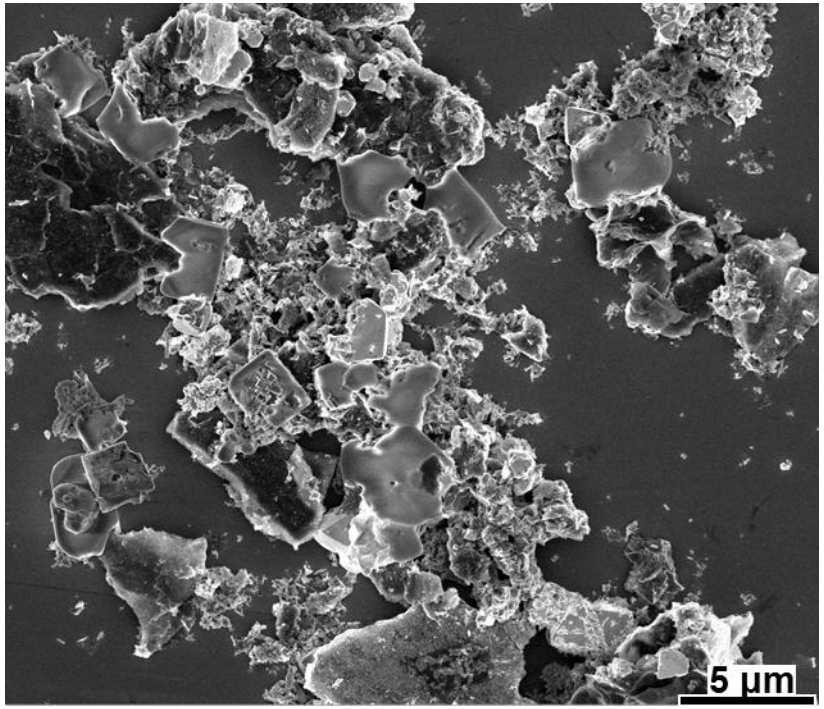

Figure S4. SEM images of the CuO/rGO composites after microwave-assisted hydrothermal reaction without the addition of CTAB.

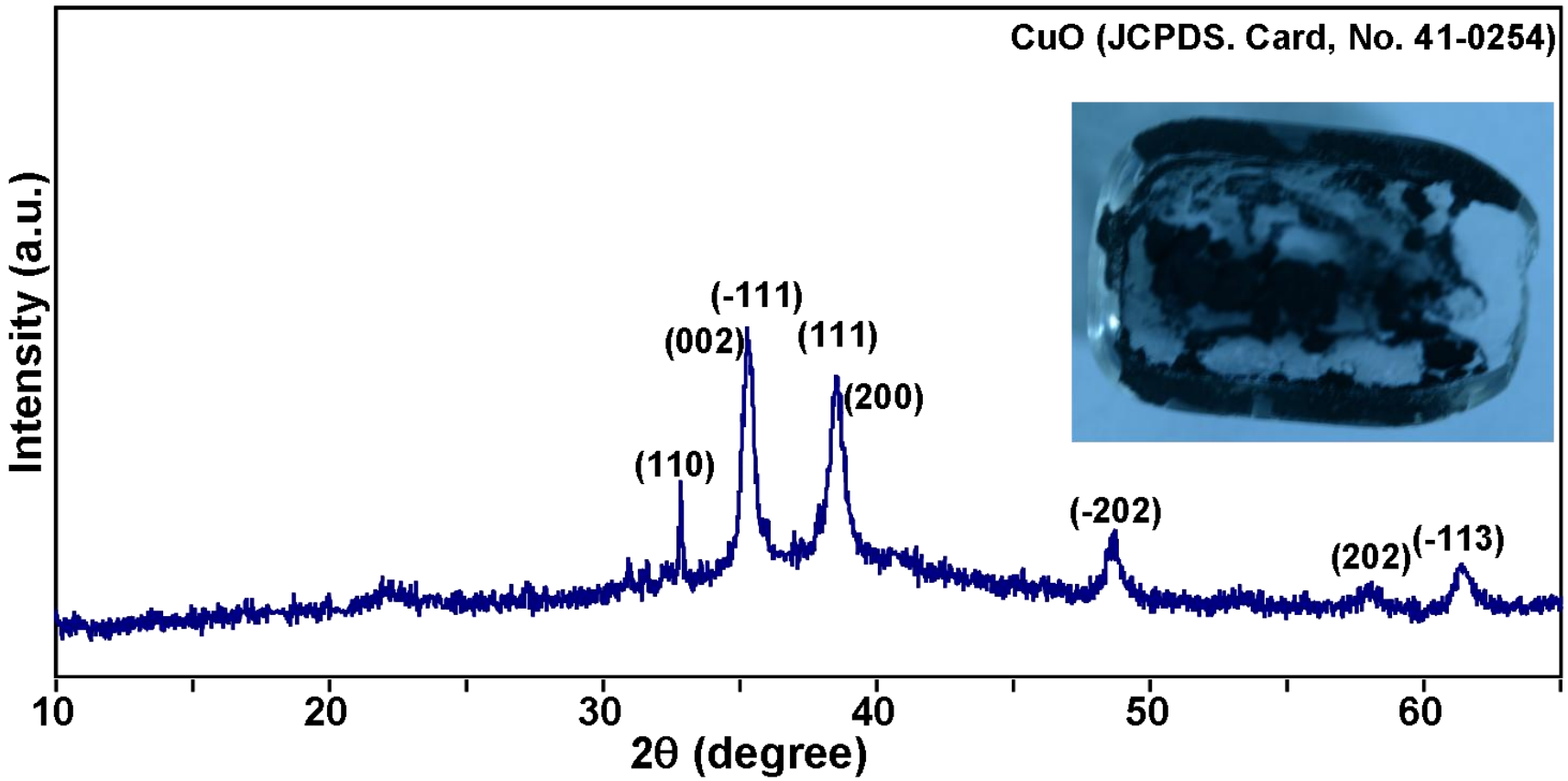

Figure S5. Typical XRD patterns of the products after microwave-assisted hydrothermal reaction and the annealing process without the addition of CTAB. Inset: optical image of the products after microwave-assisted hydrothermal reaction and the annealing process without the addition of CTAB.

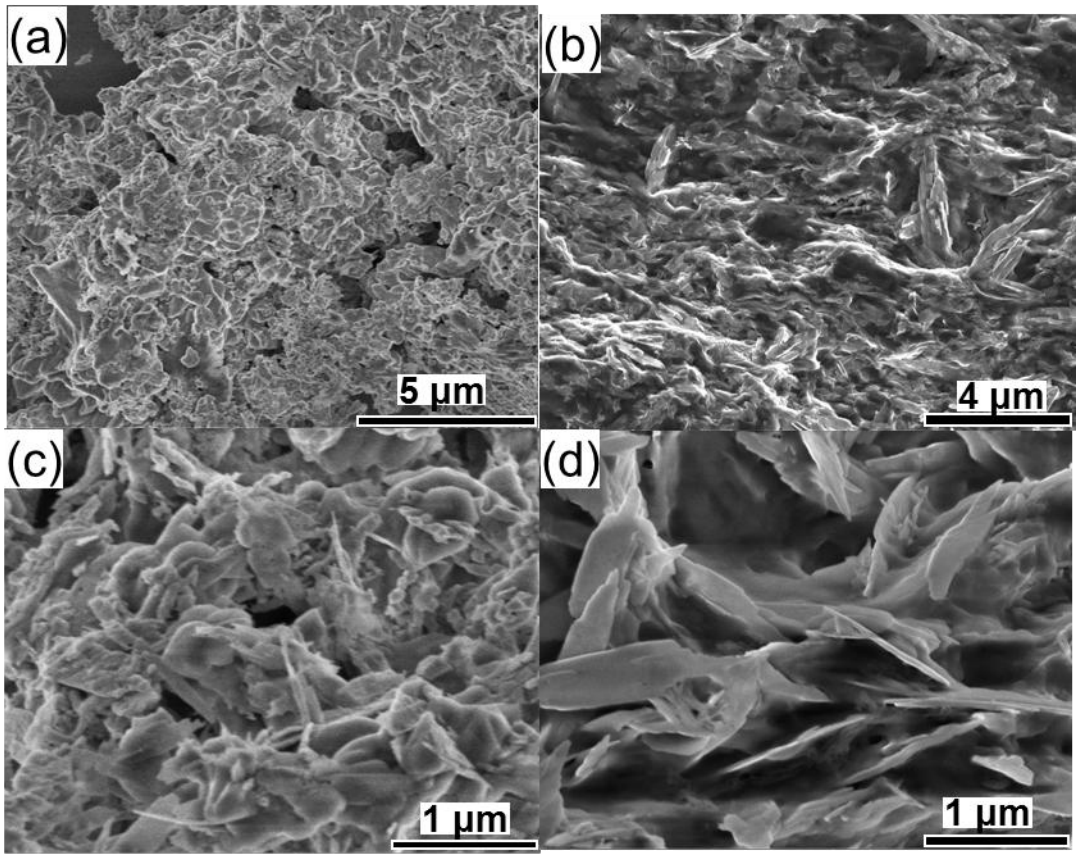

Figure S6. SEM images of the CuO/rGO composites after microwave-assisted hydrothermal reaction when the $CuCl_2$ concentration decreased to 0.02 mol/L (a and c) and the following products after annealing (b and d).

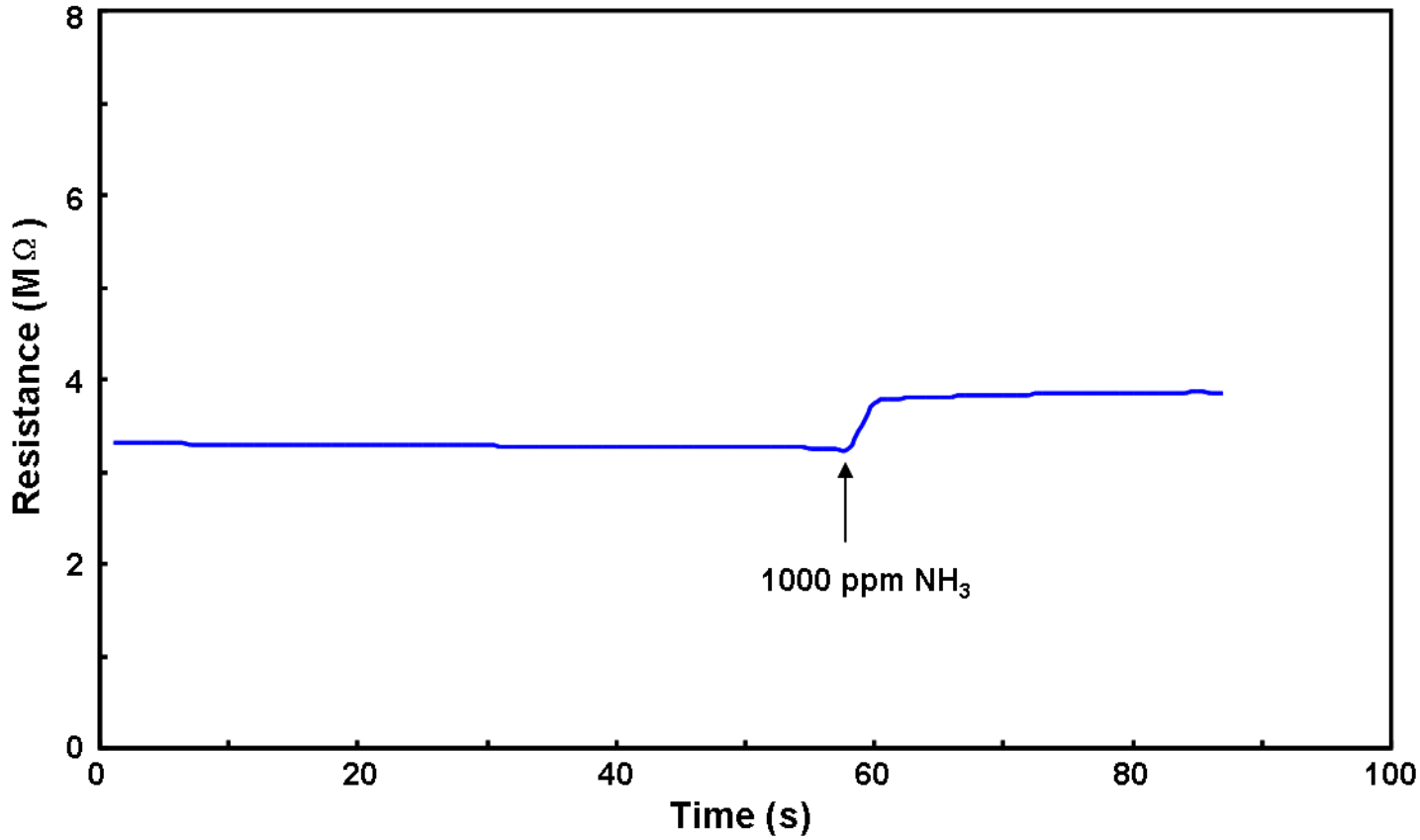

Figure S7. Dynamic response resistances of pure Cu_2O to 1000 ppm NH_3 at 270 ˚C