Supporting Information:

Cu$_2$O 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 CuCl₂ solution (a), CuCl₂ solution after NaOH was added (b), CuCl₂ and NaOH solution after GO was added (c), CuO/rGO composites after microwave-assisted hydrothermal reaction (d) and obtained Cu₂O/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 °C and under a continuous N₂ flow of 100 sccm. According to the relative ratio of the diffraction intensity ($I_{Cu_2O(111)}/(I_{CuO(111)}+I_{Cu_2O(111)})$), 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$_2$O to 1000 ppm NH$_3$ at 270 °C