

Supporting Information

Rectangular Copper Nanotubes

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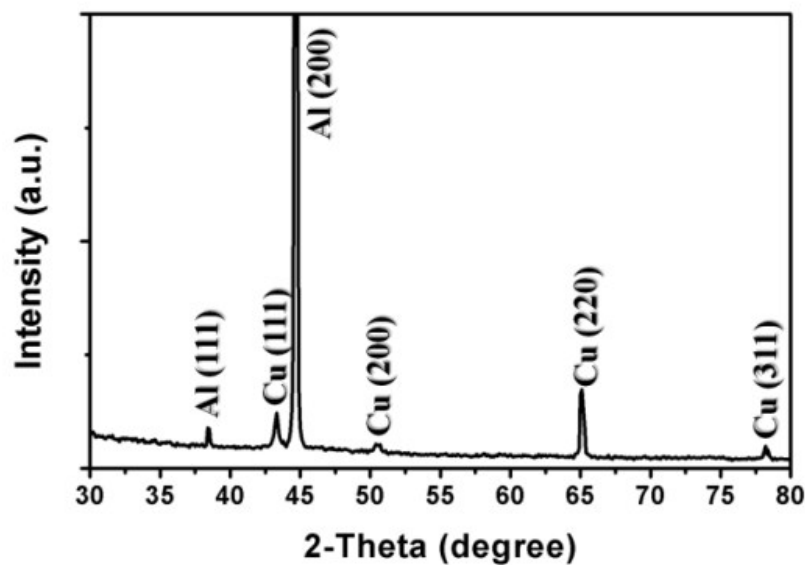


Figure S1. XRD pattern of rectangular copper NTs.

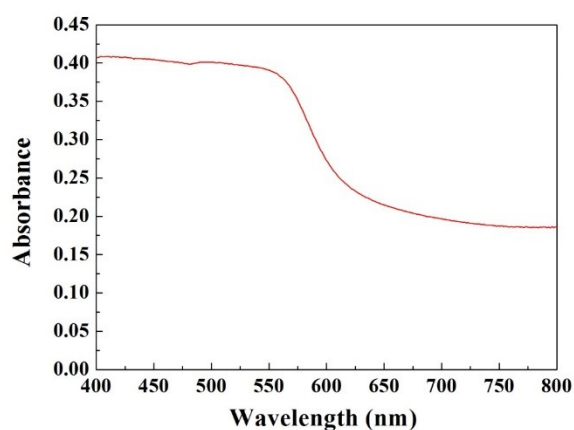


Figure S2. An UV–Vis absorption spectrum of rectangular copper NTs prepared at 21°C has absorption at 560 nm due to surface plasmon resonance. The absorption bands for 1D copper nanomaterials have been reported to be in the range of 550–600 nm (ref. *J. Chem. Phys.*, 2005, **123**, 094710; *Cryst. Growth Des.*, 2008, **8**, 3415; *Sci. Rep.*, 2013, **3**, 2323; *Mater. Lett.*, 2007, **61**, 4711). By the present synthetic method, we have been able to prepare rectangular copper NTs with surface plasmon resonance property.

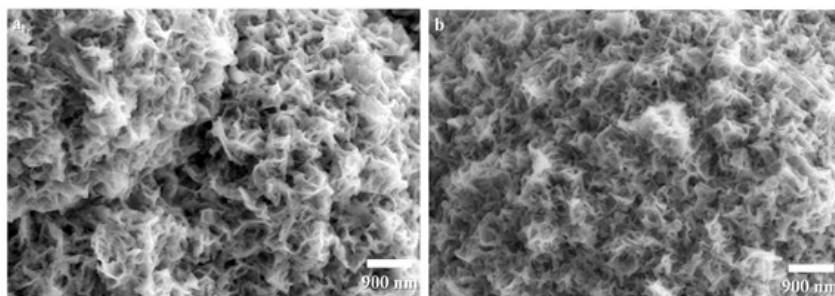


Figure S3. SEM images of Cu materials synthesized at 17°C with different amount of HNO₃: (a) 22 μ L; (b) 30 μ L. The concentration of CuCl₂ and CTAC is 5 mM and 1.5 mM, respectively.

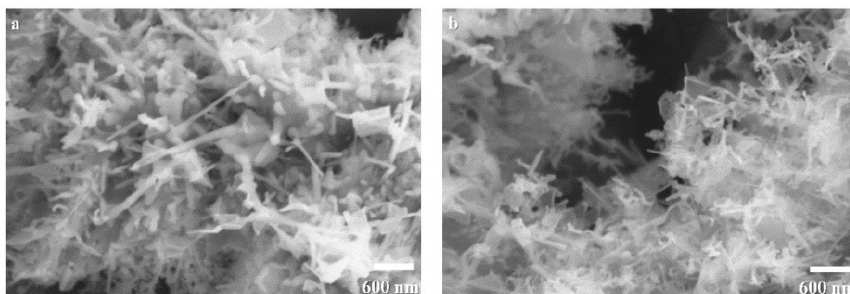


Figure S4. SEM images of Cu materials synthesized at 17°C with different amount of HNO₃: (a) 22 μ L; (b) 30 μ L. The concentration of CuCl₂ and CTAC is 5 mM and 2 mM, respectively.



Figure S5. SEM images of Cu materials synthesized with 22 μ L of HNO₃ at 17°C for different reaction time: (a) 3h; (b) 6h; (c) 10h. The concentration of CuCl₂ and CTAC is 5 mM and 1.8 mM, respectively.

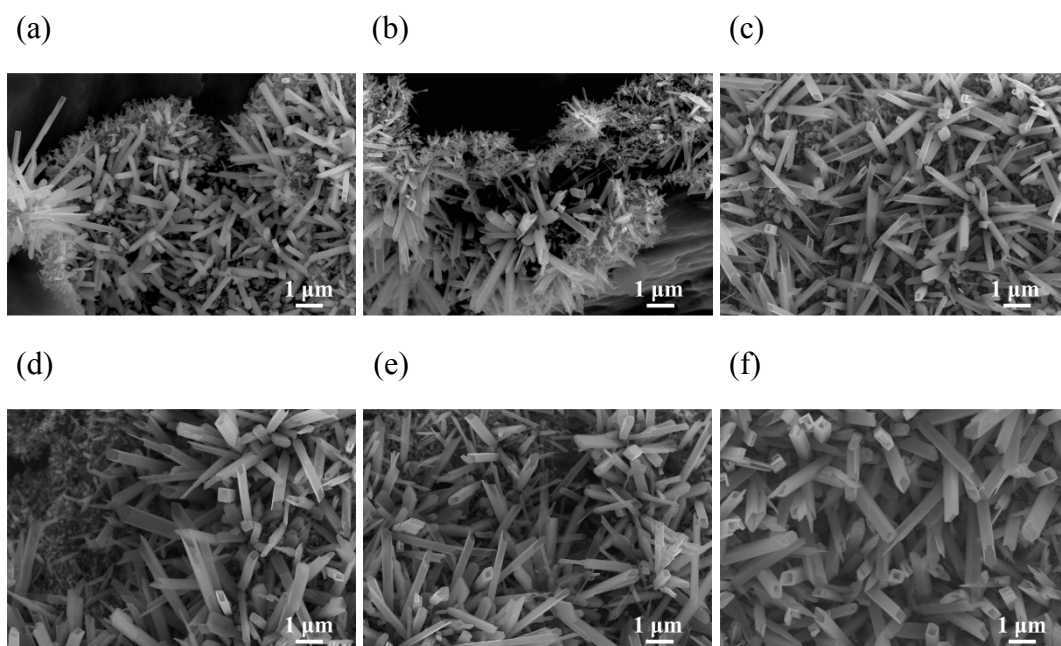


Figure S6. SEM images of rectangular copper NTs synthesized with 22 μL of HNO_3 at 21°C for different reaction time: (a) 3h; (b) 6h; (c) 9h; (d) 12h; (e) 15h; (f) 20h. The concentration of CuCl_2 and CTAC is 5 mM and 1.8 mM, respectively.

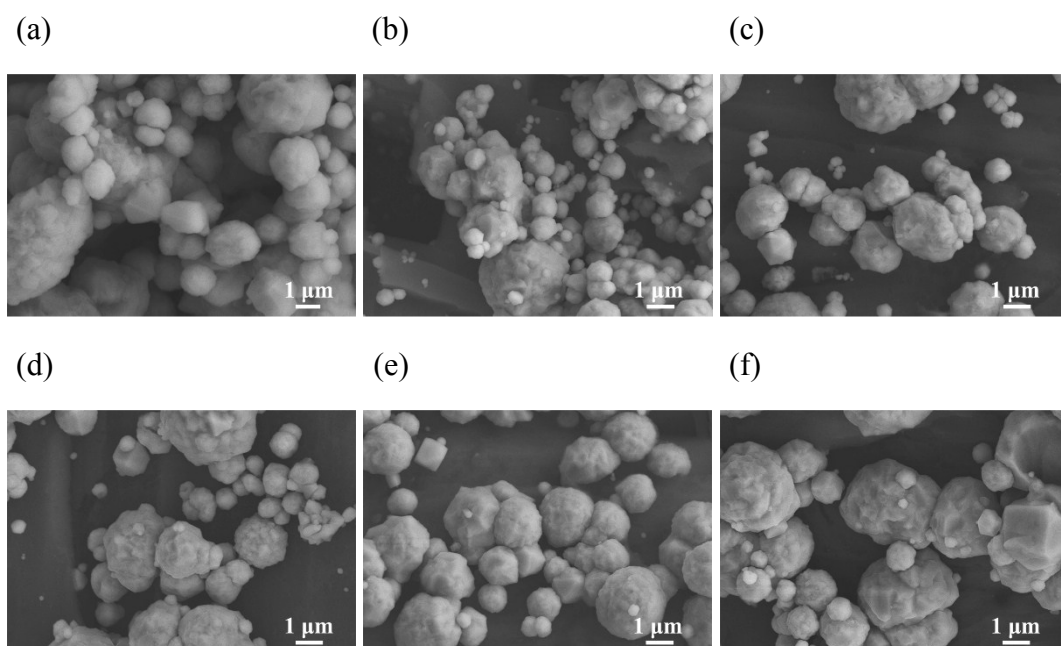


Figure S7. SEM images of Cu materials synthesized at 21°C for 20h with different concentration of PVP (polyvinylpyrrolidone) as the surfactant: (a) 0.1 mM; (b) 0.5 mM; (c) 1.0 mM; (d) 1.5 mM; (e) 2.0 mM; (f) 3.0 mM. The concentration of CuCl_2 is 5 mM and the amount of HNO_3 is 22 μL .

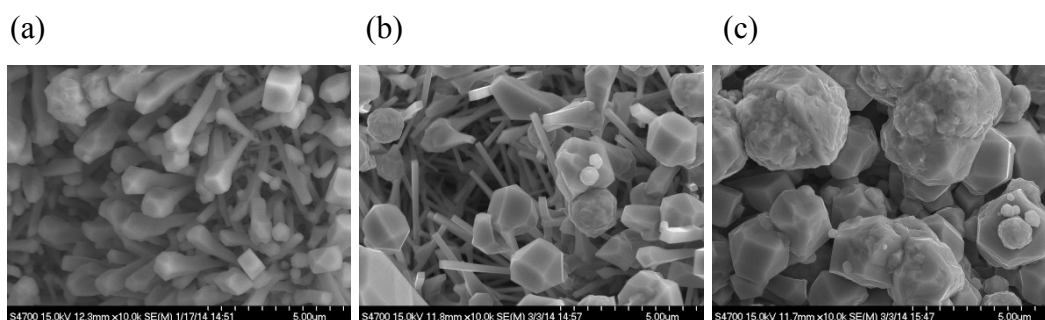


Figure S8. SEM images of Cu materials grown again at 21°C for 20h: (a) 5 mM CuCl_2 /2 mM PVP; (b) 3.5 mM CuCl_2 /0.3 mM PVP; (c) 3.5 mM CuCl_2 /0.5 mM PVP. The amount of HNO_3 is 22 μL . PVP is a capping agent commonly used in preparation of nanoparticles.