Supporting information

Solvent-free Synthesis of Monodisperse Cu Nanoparticles by Thermal Decomposition of Oleylamine-coordinated Cu Oxalate Complex

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Figure 1 shows the FTIR spectra of N,N-dietyl-1,3-diaminopropane (dedap) and [Cu(ox)(dedap)$_2$] reported in Ref 23. The two amino-group-related peaks in the FTIR spectrum of dedap observed at 3364 ($\nu_s(NH_2)$) and 3290 cm^{-1} ($\nu_{as}(NH_2)$) are shifted to lower wavenumbers, 3250 ($\nu_s(NH_2)$) and 3150 cm^{-1} ($\nu_{as}(NH_2)$) for [Cu(ox)(dedap)$_2$]. In addition, two strong and sharp bands at 1655 and 1593 cm^{-1} characterized as asymmetric vibration of [Cu(ox)(dedap)$_2$] are observed as OA-Cu(ox).

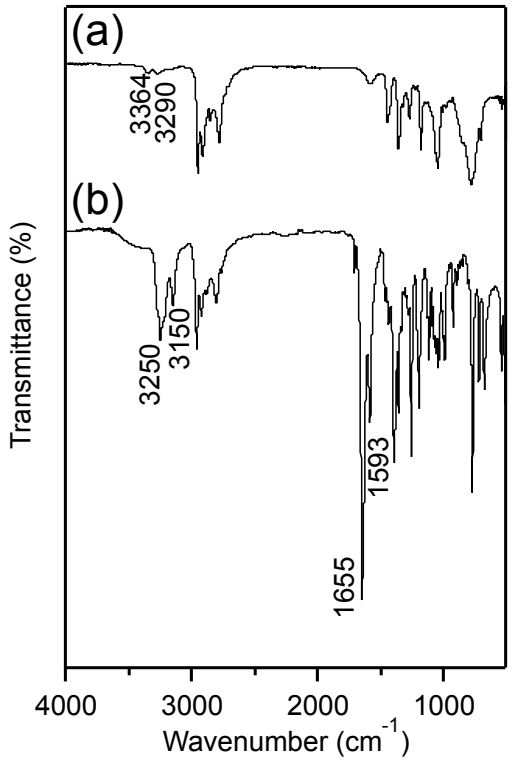

Figure S1. FTIR transmittance spectrum of (a) dedap and (b) [Cu(ox)(dedap)$_2$].

Figure S2. Photograph of the precursor after mixing at 140 ºC for 20 min.

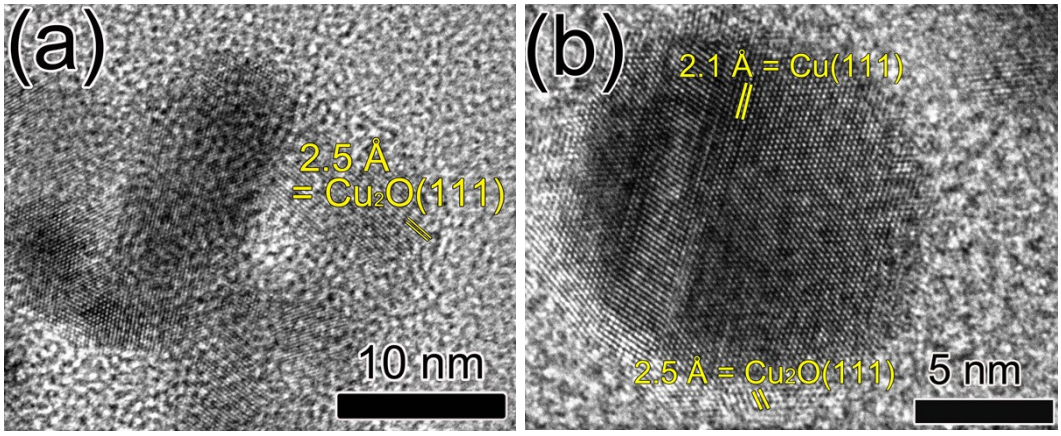

Figure S3. TEM images of the synthesized Cu and Cu_2O nanocrystals synthesized at 200 ºC and a Cu nanocrystal synthesized at 260 ºC.

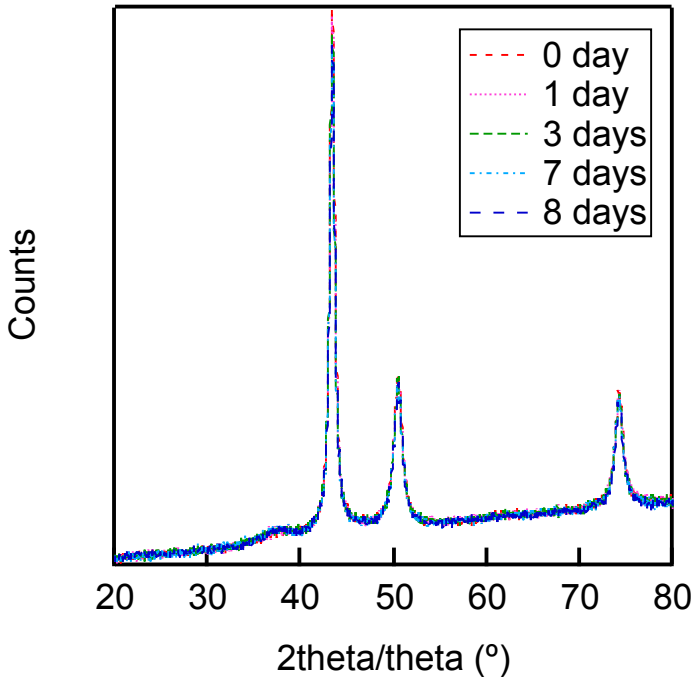

Figure S4. Time-course XRD measurement of Cu NPs Synthesized at 260 ºC.

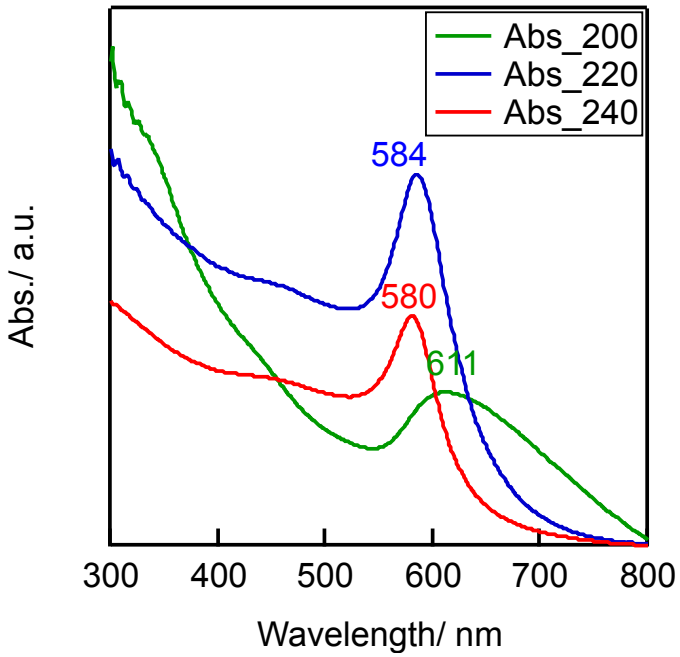

Figure S5. UV-vis spectrum of toluene dispersion of Cu NPs synthesized at 200 (green), 220 (blue), and 240 ºC (red)