

# Ligand-assisted Reduction and Reprecipitation Synthesis of Highly Luminescent Metal Nanoclusters

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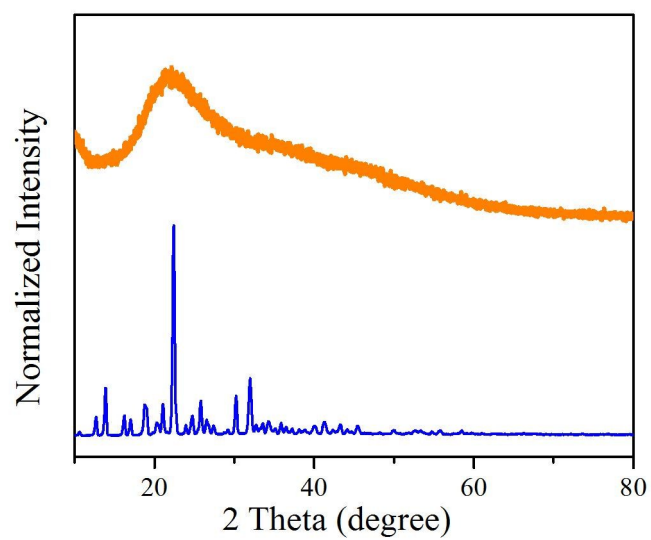


Figure S1. XRD patterns of GSH (blue line) and Cu NCs (orange line).

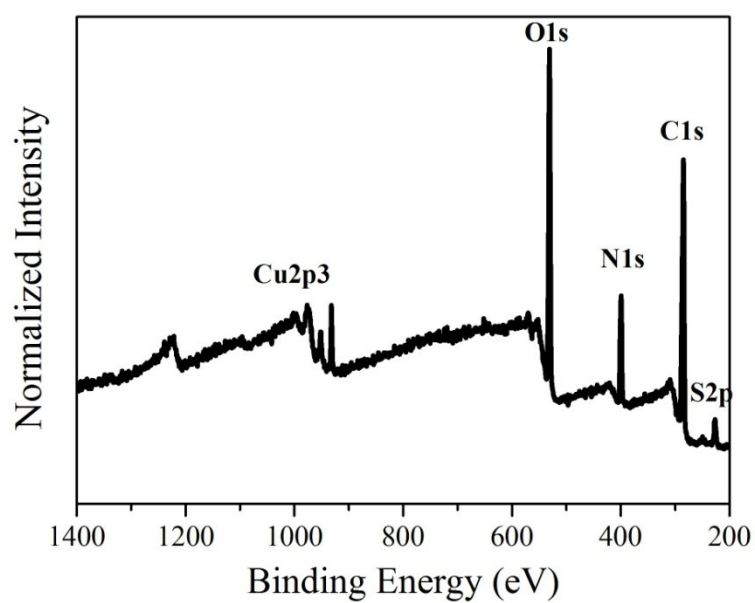


Figure S2. Full XPS spectrum recorded on Cu NCs, showing the existence of all the expected elements, including C, O, N, S and Cu.

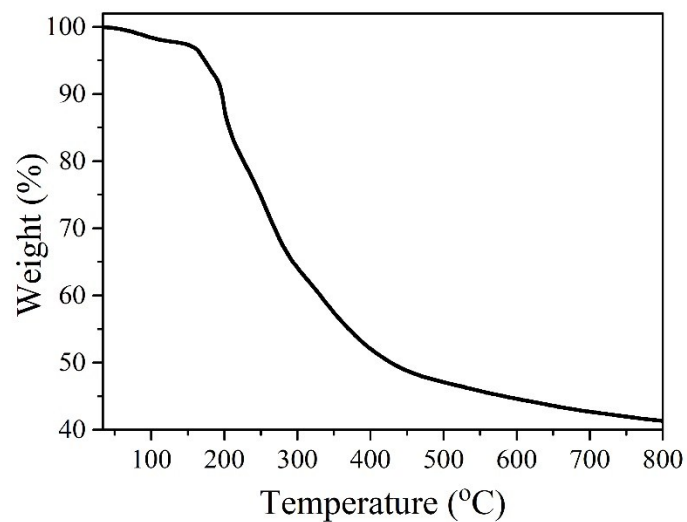


Figure S3. TGA curves of the Cu NCs under N<sub>2</sub> atmosphere.

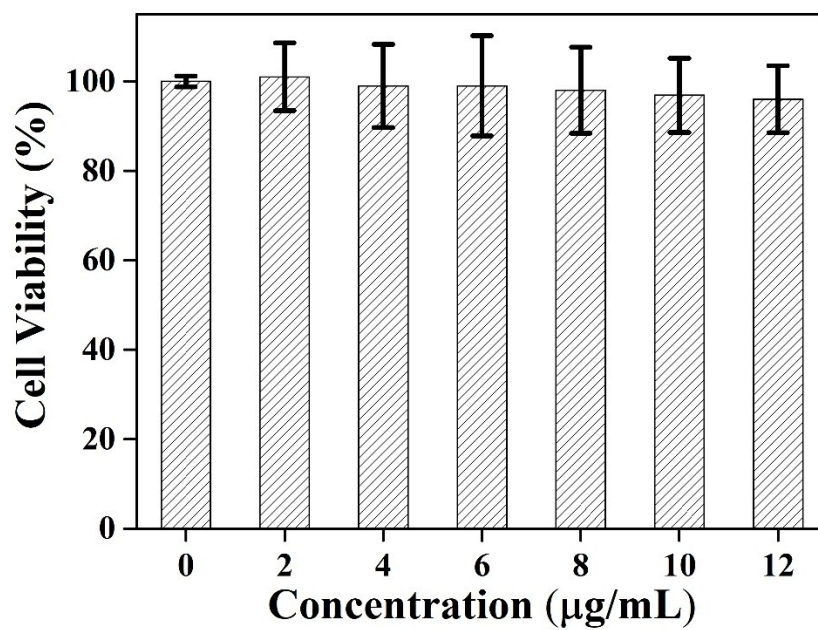


Figure S4. Cytotoxicity of Cu NCs in 3T3 fibroblasts cells after 24 h incubation, evaluated by MTS assay.

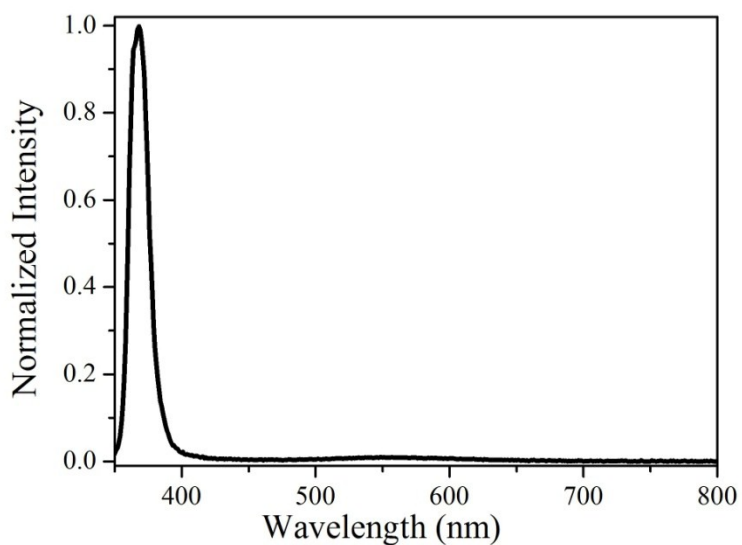


Figure S5. Emission spectra of UV-LEDs chip employed for fabrication of the LED devices.

**Table S1.** Lifetimes ( $\mu\text{s}$ ) of luminescence ( $\tau$ ) and fraction of intensity (f, %) for mixture the Cu NCs recorded on different emission wavelength.

Detection wavelength (nm)	$\tau_1$	$\tau_2$
540	18.57(99.8)	210 (0.2)
555	21.71(99.5)	170(0.5)
570	23.97(99.4)	170(0.6)
585	25.54(99.3)	160(0.7)
600	26.17(99.3)	170(0.7)
615	25.56(99.0)	150(1.0)
630	23.90(99.2)	160(0.8)
645	21.94(99.2)	150(0.8)
660	19.85(99.1)	130(0.9)