

Electronic Supplementary Information

**Non-injection synthesis of monodisperse Cu-Fe-S nanocrystals and their
size dependent properties**

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Table S1. Summary of the synthesis conditions and composition of Cu-Fe-S nanocrystals

| | CuCl (mg) | FeCl ₃ (mg) | thiourea (mg) | OA ^a (mg) | Cu/Fe/S/OA ^b | Cu/Fe/S ^c |
|-----------|-----------|------------------------|---------------|----------------------|-------------------------|-----------------------|
| B1 | 60 | 100 | 93 | 670 | 1.0/1.0/2.0/3.9 | 1.92/1.00/2.05 |
| B2 | 60 | 100 | 93 | 361 | 1.0/1.0/2.0/2.1 | 1.62/1.00/2.01 |
| B3 | 60 | 100 | 93 | 207 | 1.0/1.0/2.0/1.2 | 1.64/1.00/2.04 |
| B4 | 95 | 38 | 63 | 950 | 4.0/1.0/3.5/14.3 | 4.20/1.00/3.20 |
| B5 | 24 | 155 | 118 | 1790 | 1.0/4.0/6.5/26.0 | 1.00/1.79/2.27 |

^aoleic acid; ^bmolar ratio of precursors; ^cratio of elements in the nanocrystals from EDS

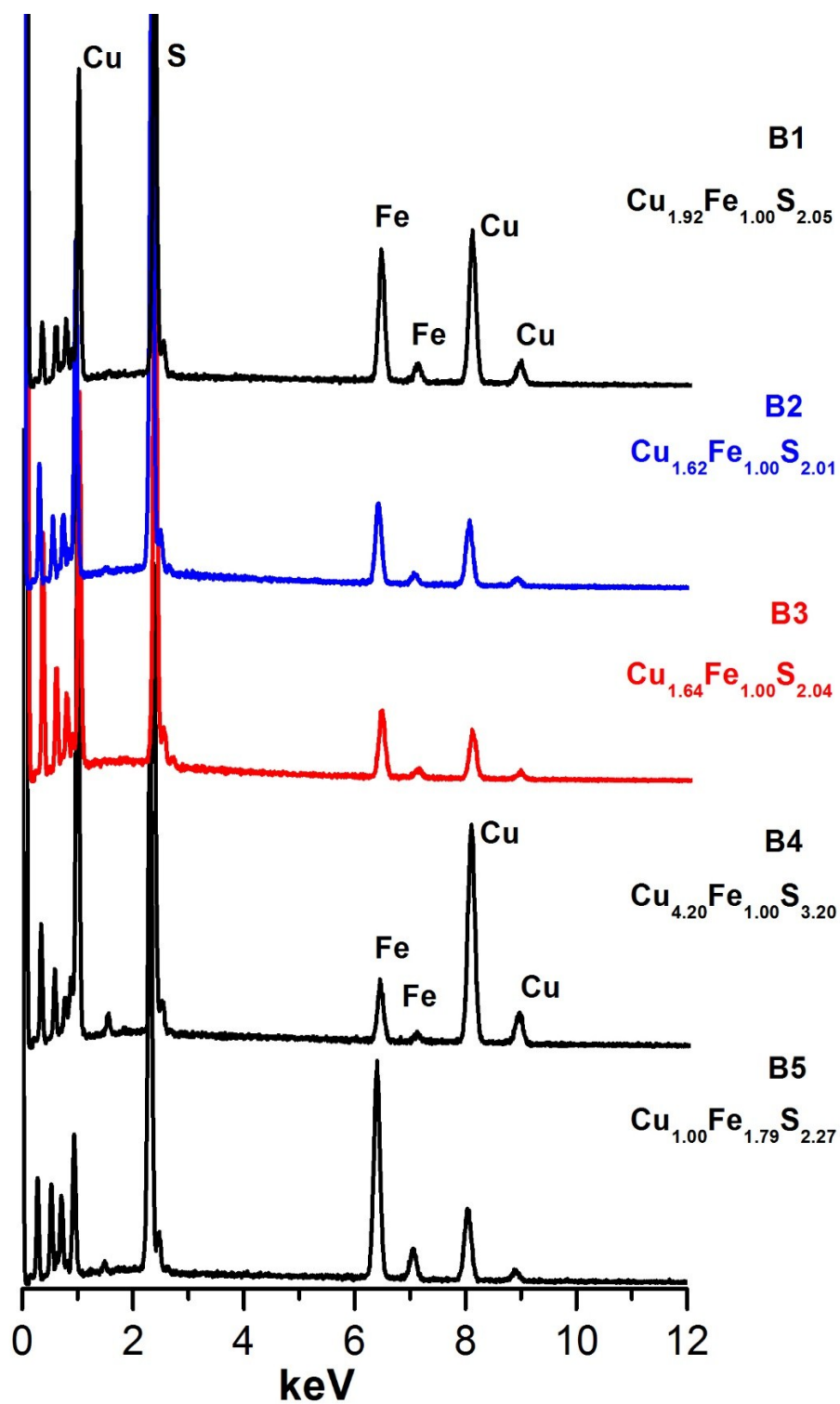


Fig. S1 Energy-dispersive spectra of Cu-Fe-S nanocrystals of batches 1-5.

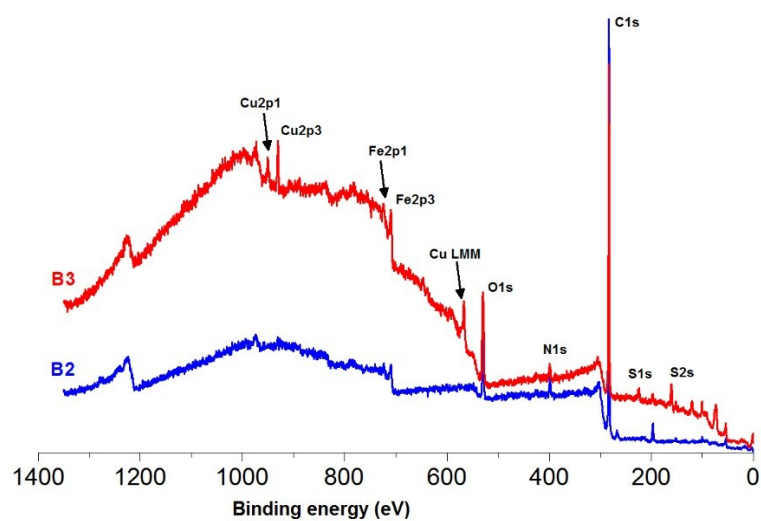


Fig. S2 XPS survey spectra of Cu-Fe-S nanocrystals (**B2** and **B3**).

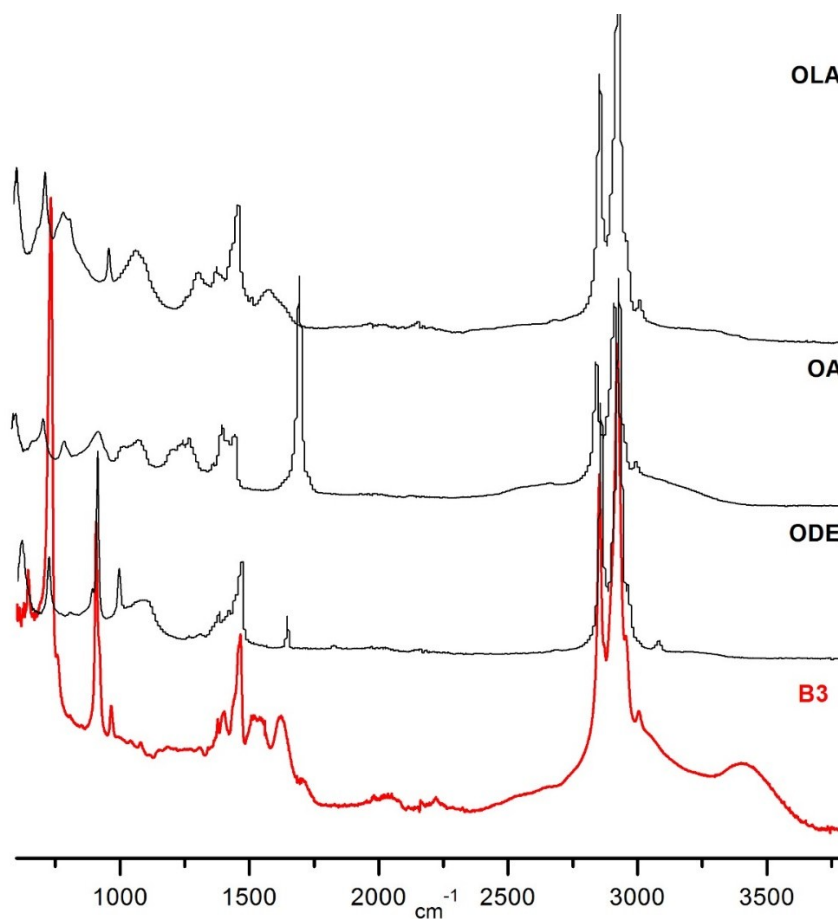


Fig. S3 IR spectra of organic residue from Cu-Fe-S nanocrystals (**B3**), 1-octadecene (ODE), oleic acid (OA), oleylamine (OLA).

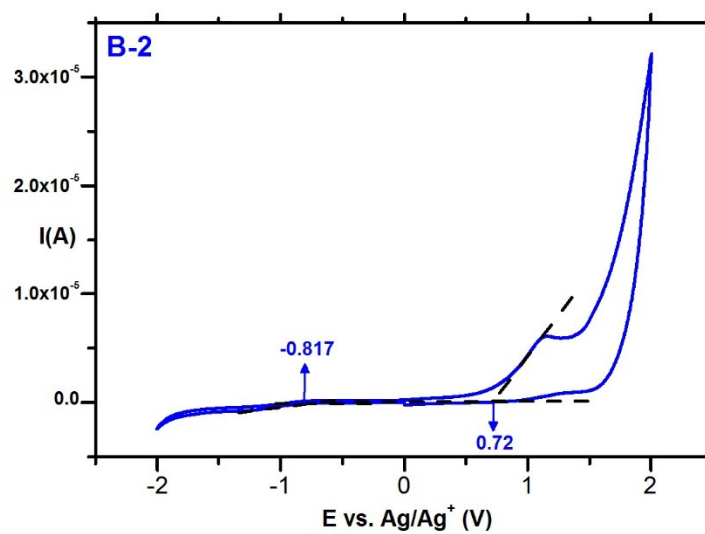


Fig. S4 Cyclic voltammogram of $\text{Cu}_{1.62}\text{Fe}_{1.00}\text{S}_{2.01}$ nanocrystals (2.7 ± 0.3 nm) (**batch 2**).

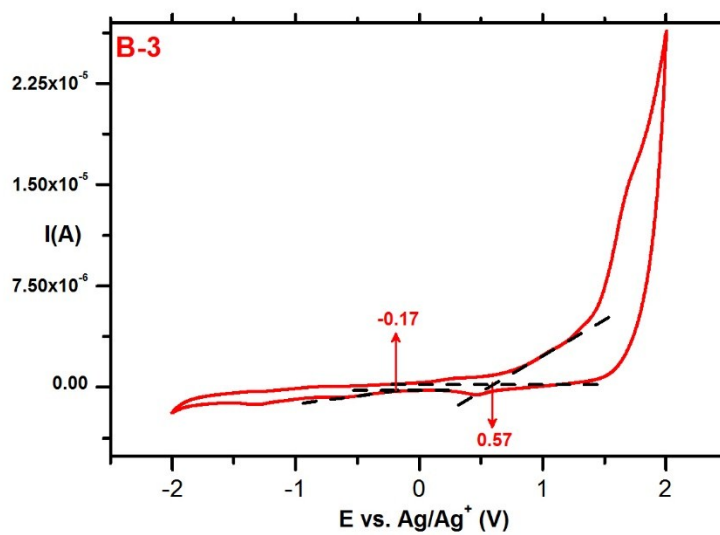


Fig. S5 Cyclic voltammogram of $\text{Cu}_{1.64}\text{Fe}_{1.00}\text{S}_{2.04}$ nanocrystals (9.3 ± 1.7 nm) (**batch 3**).