

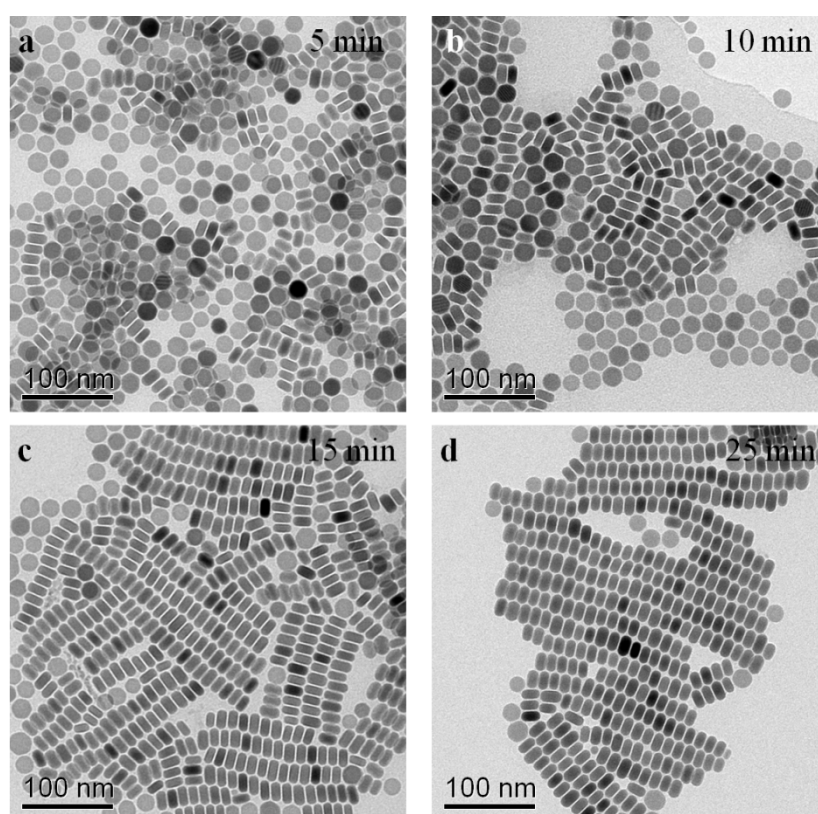
## Electronic Supplementary Information

### Reversible Self-assembly of $M_xS$ ( $M=Cu, Ag$ ) Nanocrystals Through Ligand Exchange

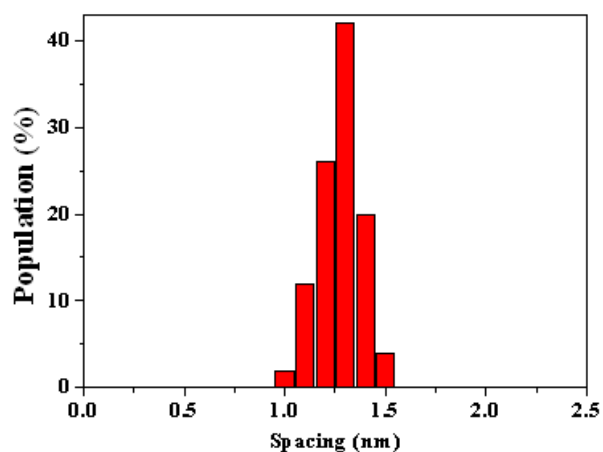
Feng Huang, Jiangcong Zhou, Ju Xu, Yuansheng Wang\*

State Key Laboratory of Structural Chemistry, Fujian Institute of Research on the Structure of Matter, Chinese Academy of Sciences, Fuzhou, Fujian, 350002 (P. R. China).

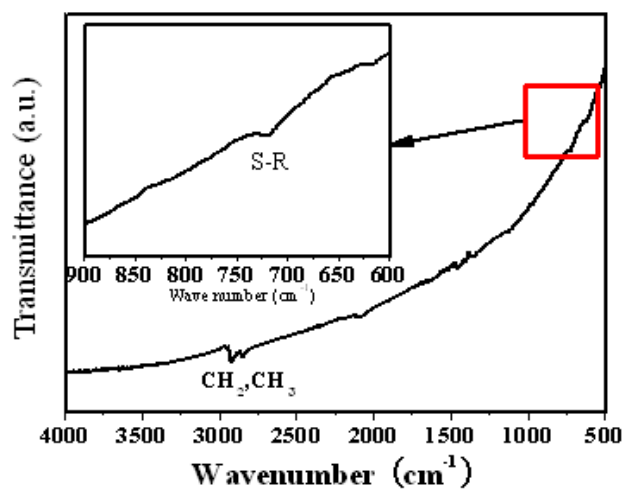
**Figure S1-S4**



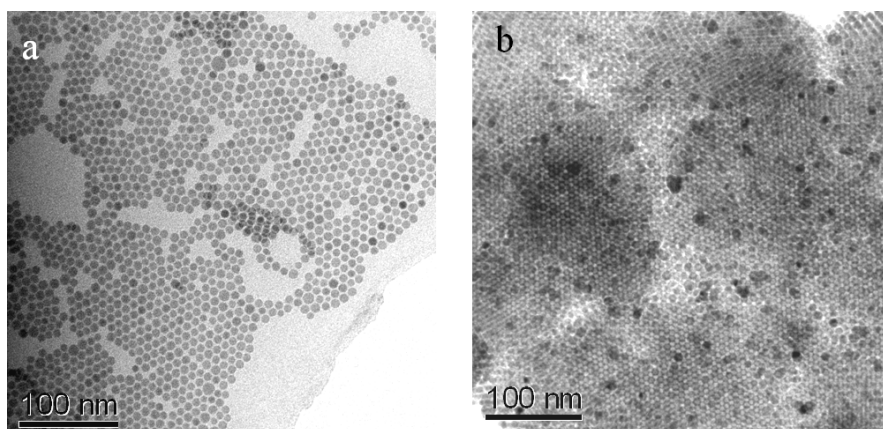
**Figure S1.** TEM micrographs of the products having reacted for various durations: (a) 5 min, (b) 10 min, (c) 15 min and (d) 25 min, respectively



**Figure S2.** Histogram showing distribution of the spacing between the adjacent Cu<sub>1.94</sub>S nanoplates (100 inter-spacings of Cu<sub>1.94</sub>S nanoplates were measured).



**Figure S3.** Infrared transmittance spectrum of the disassembled Cu<sub>1.94</sub>S nanoplates; inset is the magnified 600-900 cm<sup>-1</sup> region marked by squared frame, indicating the surface ligand being 1-DDT.



**Figure S4.** TEM micrographs of (a) the disassembled, and (b) reassembled Ag<sub>2</sub>S nanospheres.