Supporting Information

Size-Tunable Cu_3Se_2 Nanocubes Possessing Surface Plasmon Resonance Properties for Photothermal Applications

Yi-Chuan Huang,† Zih-Lin Yang,† Pei-Lun Hsieh,‡ and Michael H. Huang*,†

†Department of Chemistry and Frontier Research Center on Fundamental and Applied Sciences of Matters and ‡Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu 30013, Taiwan

E-mail: hyhuang@mx.nthu.edu.tw

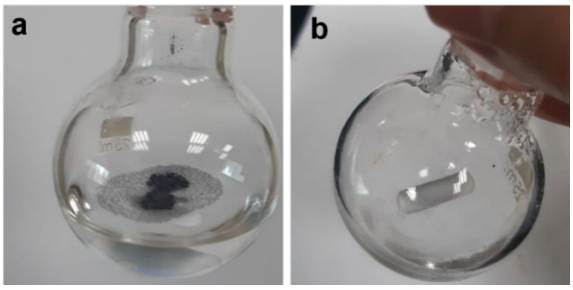


Figure S1. (a) An aqueous mixture of Na_2SO_3 and Se powder. (b) After refluxing to give a clear Na_2SeSO_3 solution.

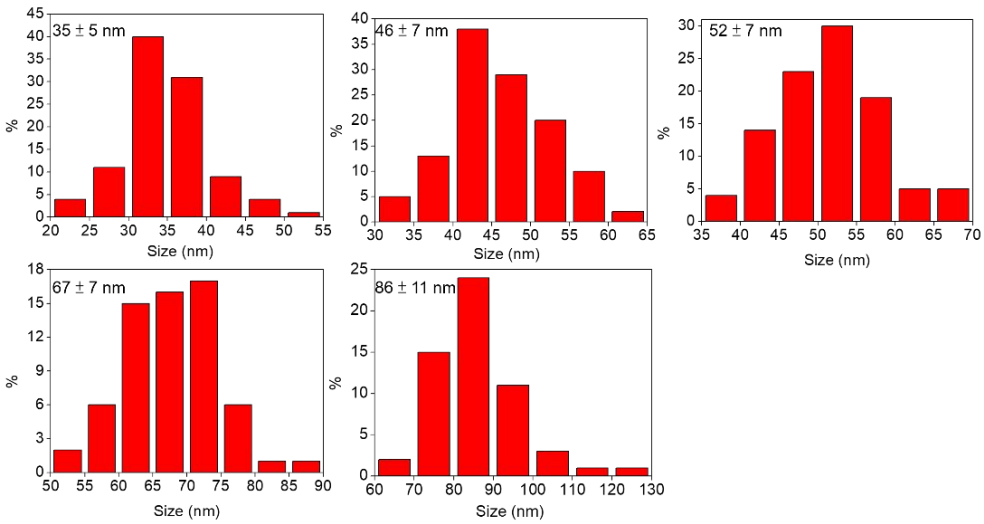


Figure S2. Size distribution histograms of the synthesized Cu_3Se_2 nanocubes with various sizes.

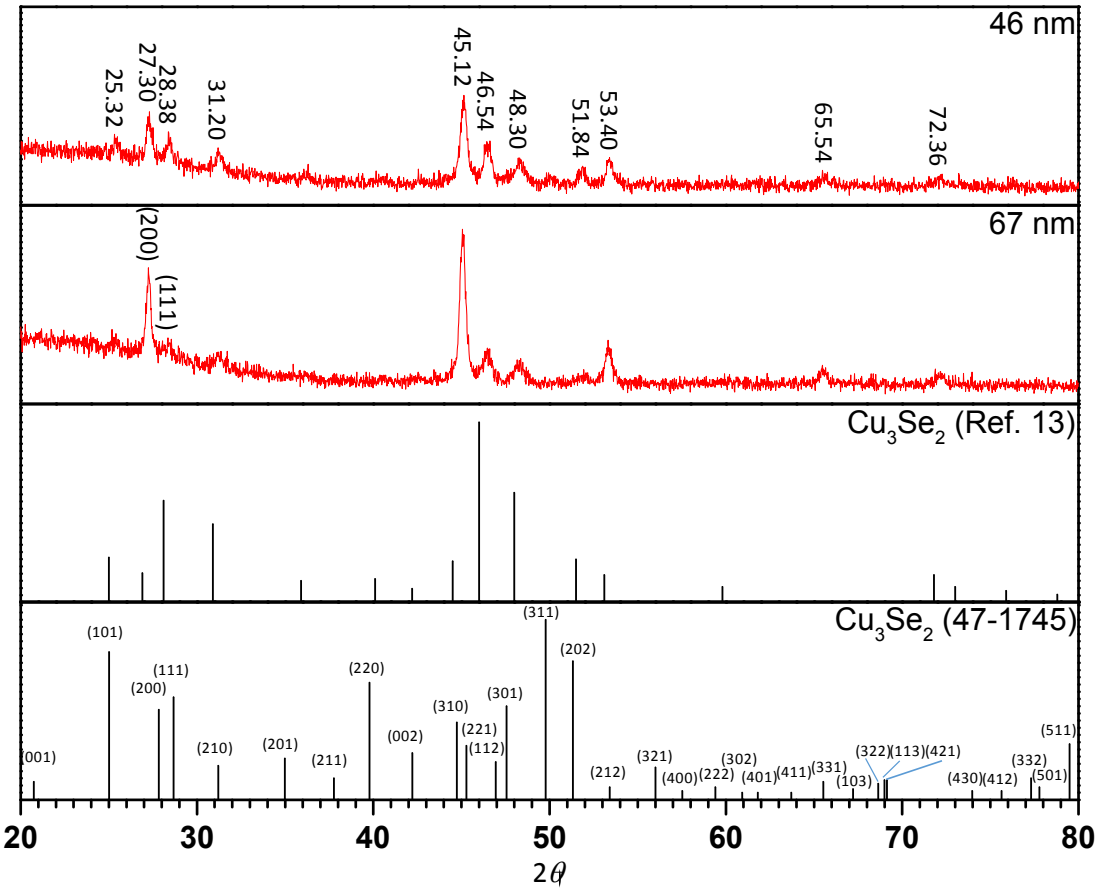
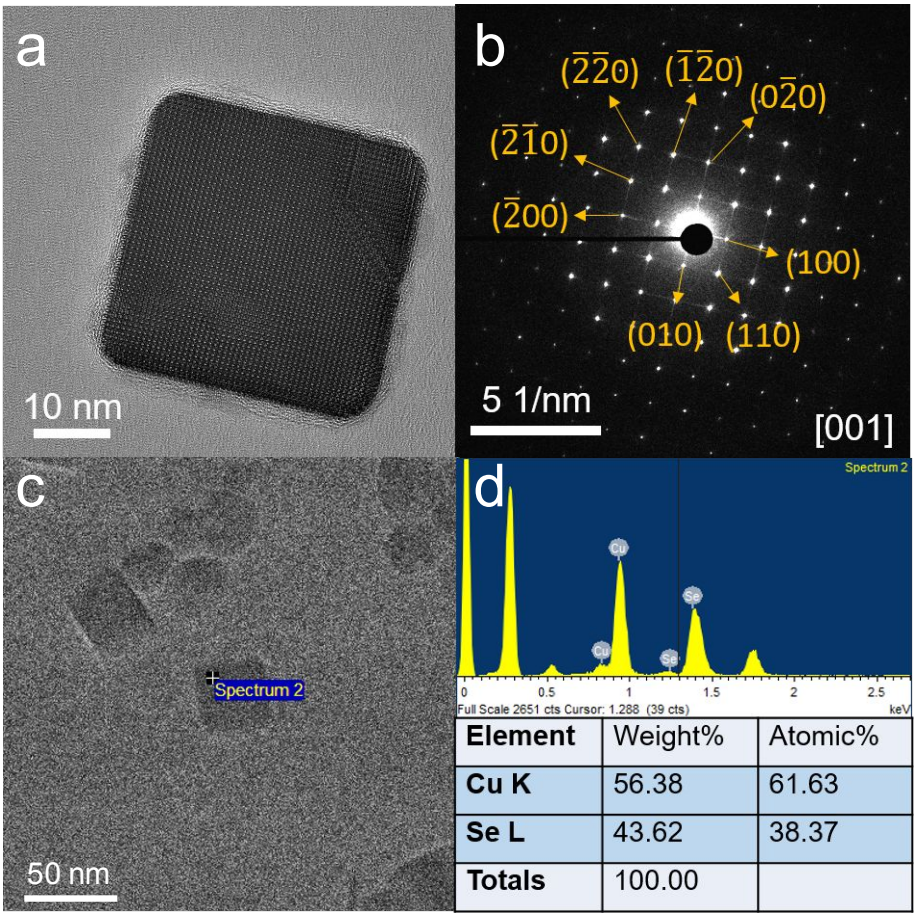


Figure S3. XRD patterns of 46 and 67 nm Cu_3Se_2 nanocubes recorded to 80º 2θ.



Element	Weight%	Atomic%
Cu K	56.38	61.63
Se L	43.62	38.37
Totals	100.00	

Figure S4. (a, b) TEM image of a Cu_3Se_2 nanocubes from the 46 nm sample and its corresponding SAED pattern. (c, d) TEM image of another Cu_3Se_2 nanocube from the same sample and its EDS spectrum. Cu to Se atomic ratio supports its composition as Cu_3Se_2.

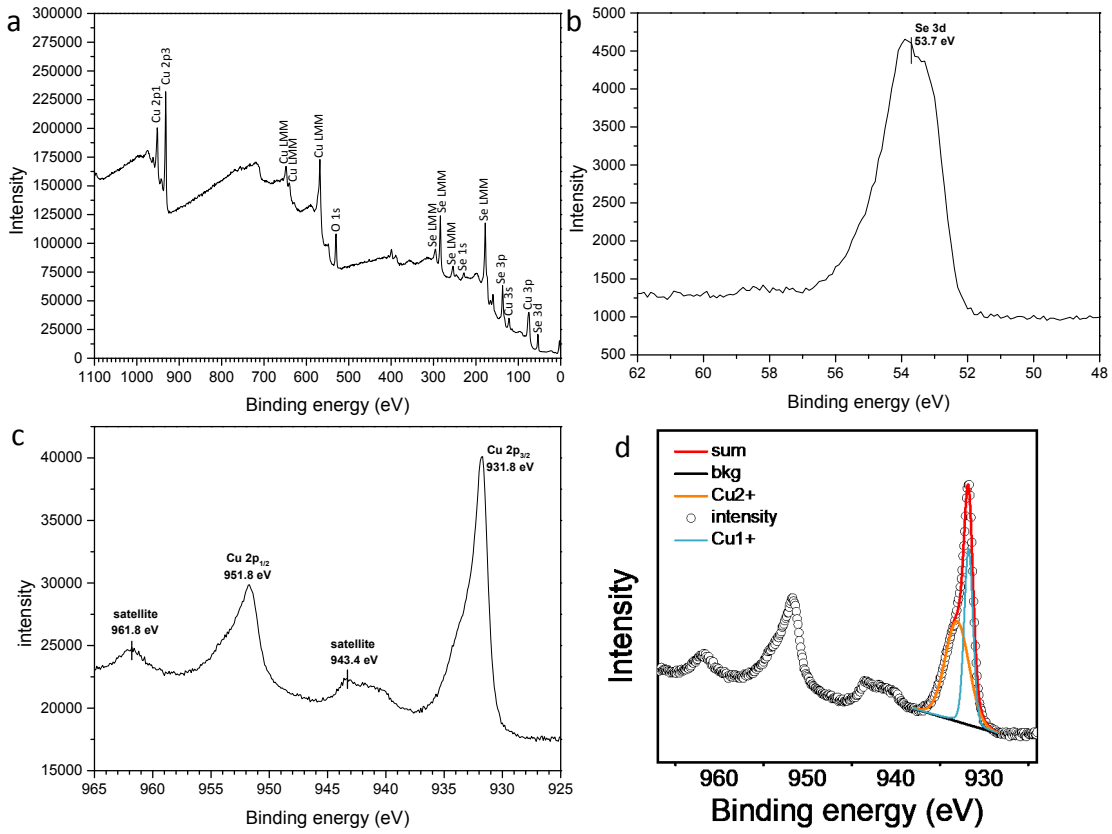


Figure S5. (a) Full XPS spectrum of the 67 nm Cu_3Se_2 nanocubes. (b, c) XPS spectra showing the Se and Cu 2p peak regions. (d) Fitting of the Cu 2p peak.

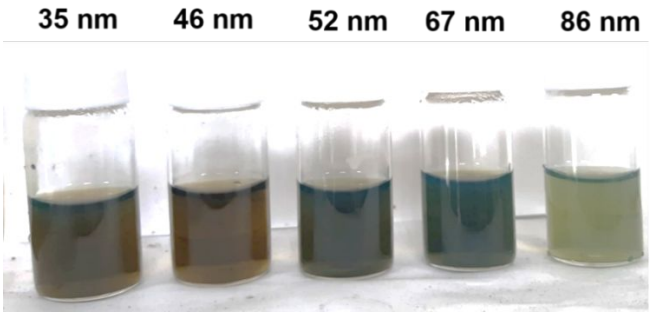


Figure S6. Photograph of the synthesized Cu_3Se_2 nanocubes with tunable sizes.

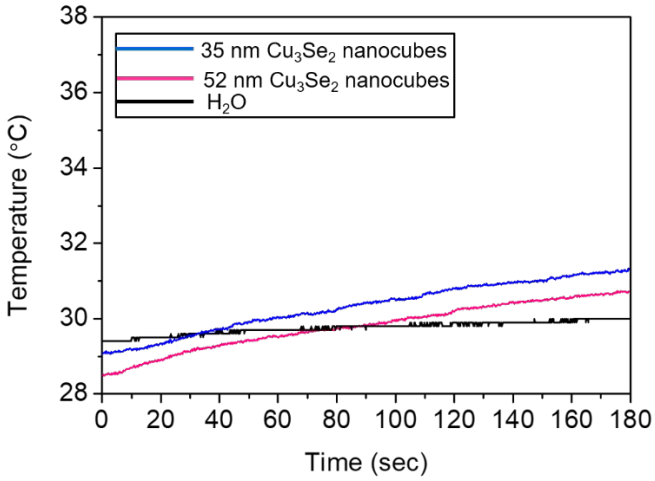


Figure S7. Photothermal results of 35 and 52 nm Cu_3Se_2 nanocubes under 1064 nm laser irradiation with a laser power of 0.25 W.