

## Facile Synthesis of Size-dependent Optical properties of Luminescent $\text{ZnIn}_2\text{S}_4$ nanocrystals derived from Metal Xanthates

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**Fig S1.** TG curve of  $[\text{Zn}(\text{S}_2\text{COPr}^i)_2]$  (1) and  $[\text{In}(\text{S}_2\text{COPr}^i)_3]$  (2)

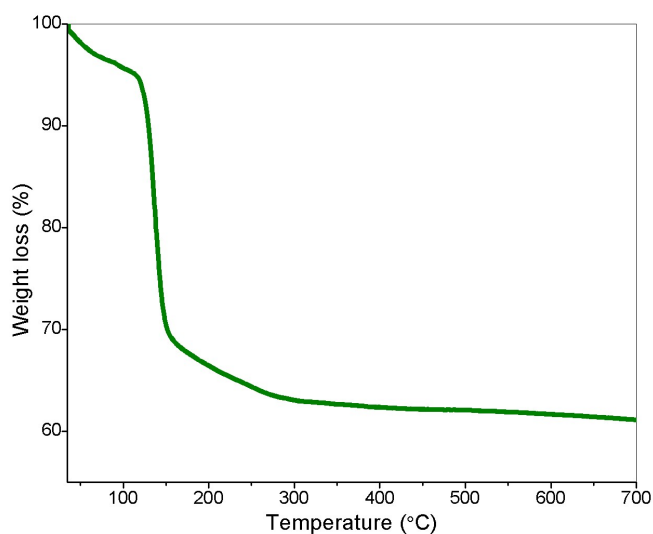
**Fig S2.** EDS spectrum of  $\text{ZnIn}_2\text{S}_4$  nanocrystals isolated at 10 minutes.

**Fig S3.** EDS spectrum of  $\text{ZnIn}_2\text{S}_4$  nanocrystals isolated at 15 minutes.

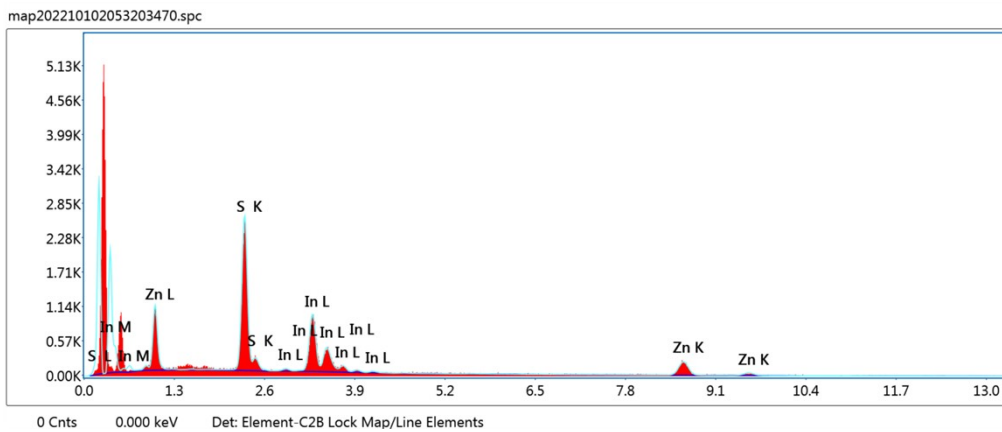
**Fig S4.** EDS spectrum of  $\text{ZnIn}_2\text{S}_4$  nanocrystals isolated at 20 minutes.

**Fig S5.** 2D elemental mapping of the constituent elements of  $\text{ZnIn}_2\text{S}_4$  nanocrystals.

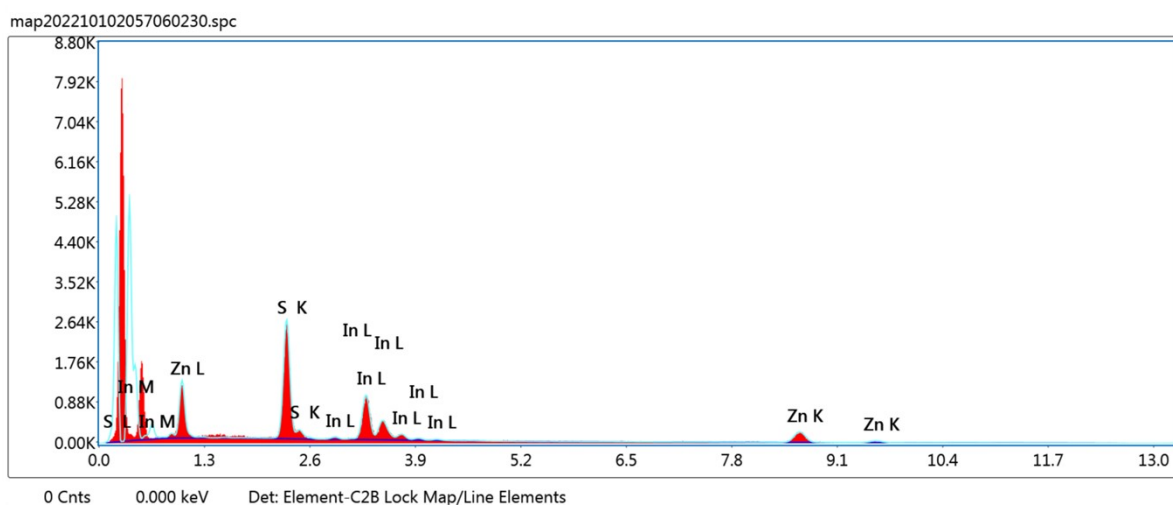
**Fig S6.** Representative IR spectrum of  $\text{ZnIn}_2\text{S}_4$  nanocrystals.



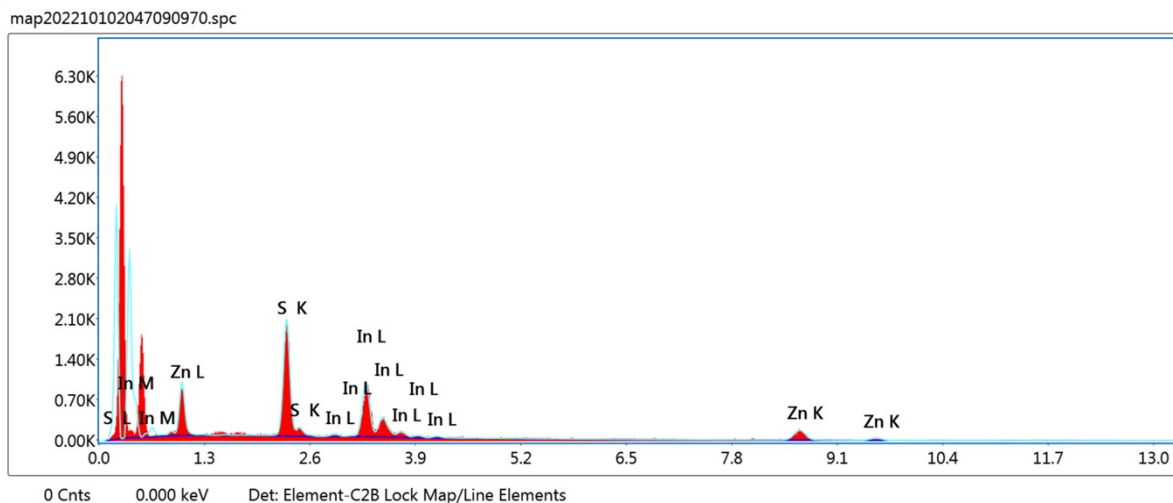
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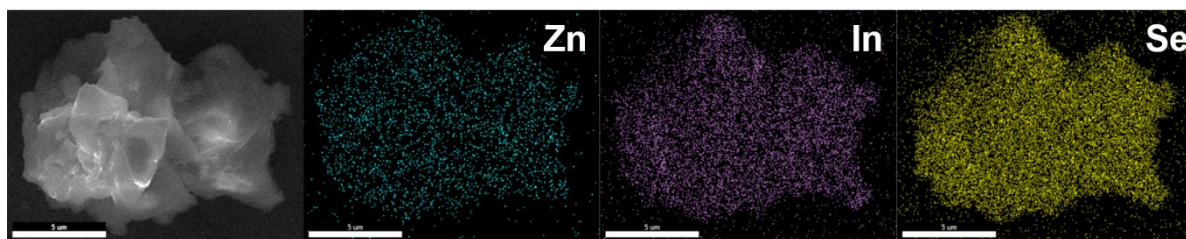
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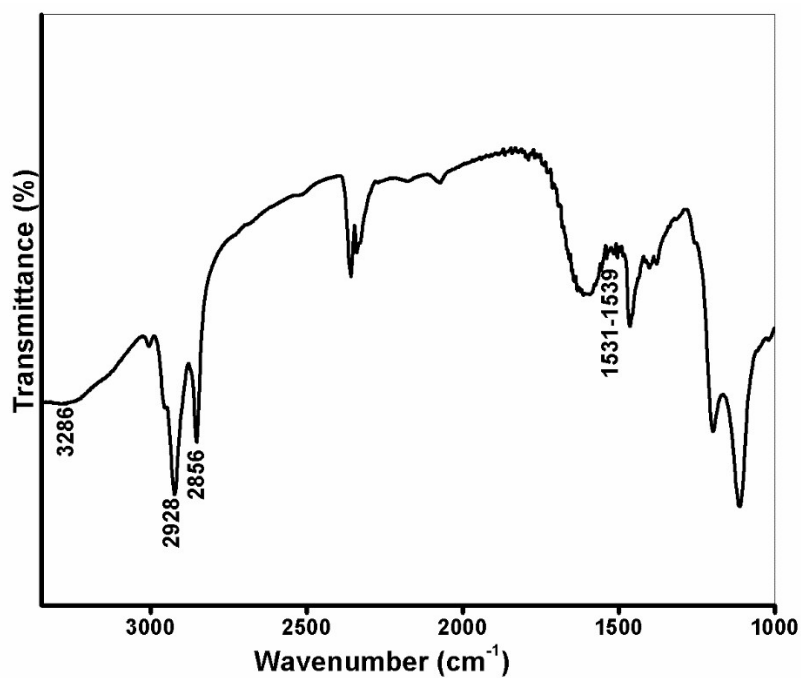
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**Fig S5.** 2D elemental mapping of the constituent elements of ZnIn<sub>2</sub>S<sub>4</sub> nanocrystals.



**Fig S6.** Representative IR spectrum of ZnIn<sub>2</sub>S<sub>4</sub> nanocrystals.