

## Electronic Supplementary Information

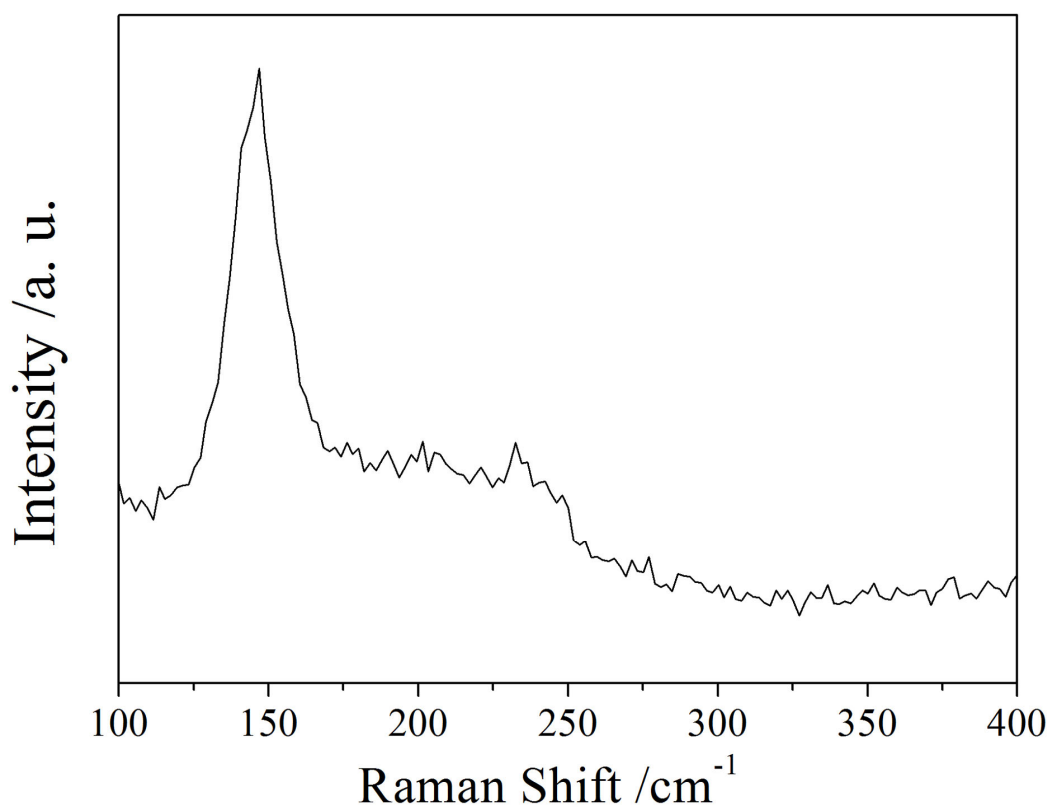
### Ascorbic acid-assisted solvothermal growth of $\gamma$ - $\text{In}_2\text{Se}_3$ hierarchical flowerlike architectures

Xiaoyan Tan,<sup>1,2</sup> Jun Zhou,<sup>1,2</sup> Qing Yang,<sup>\*,1,2</sup>

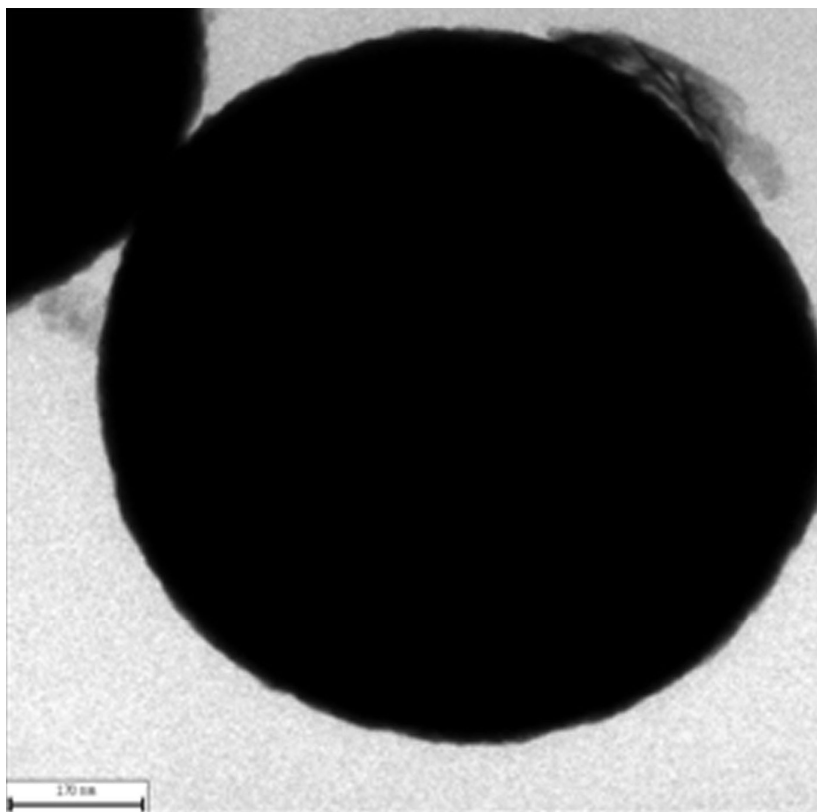
1. Hefei National Laboratory for Physical Sciences at Microscale, University of Science and Technology of China, Hefei, Anhui 230026, P. R. China

Email: qyoung@ustc.edu.cn, Phone: 86-551-3600243, Fax: 86-551-3606266

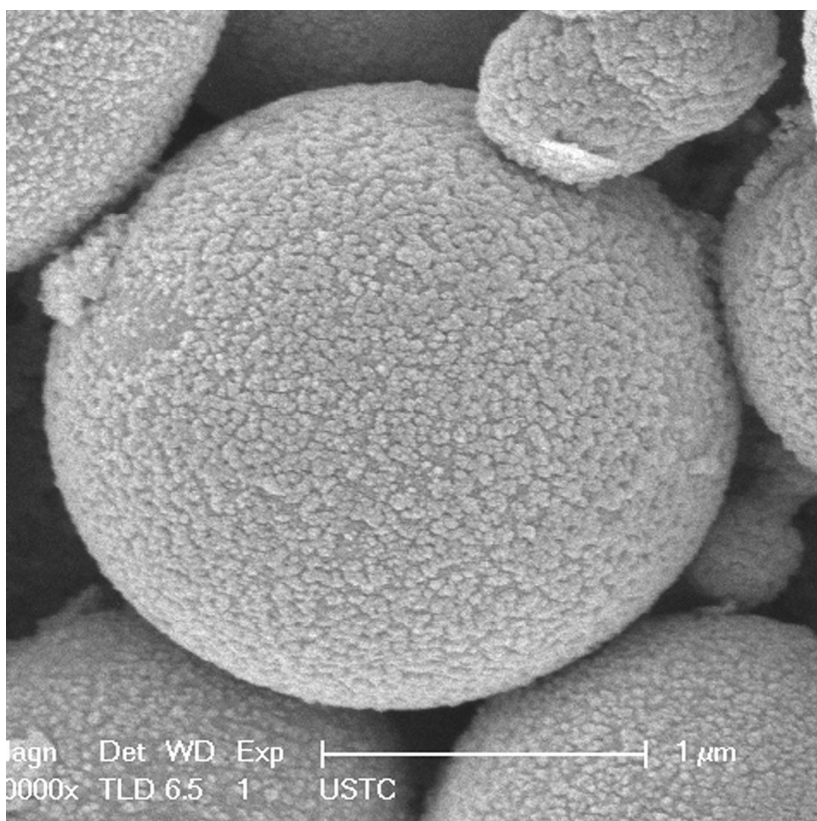
2. Department of Chemistry, University of Science and Technology of China, Hefei, Anhui 230026, P. R. China



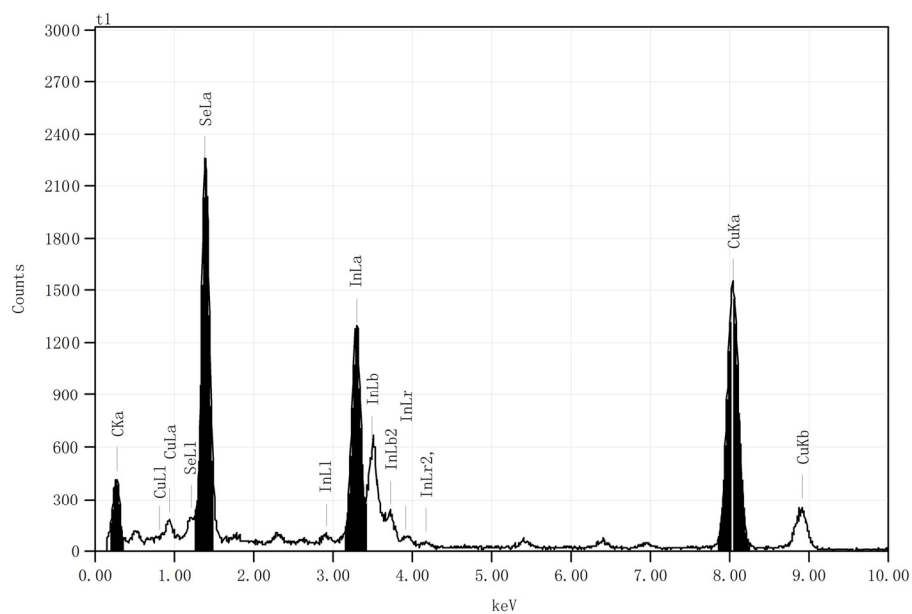
**Fig. S1** The Raman scattering spectrum of the typical product.



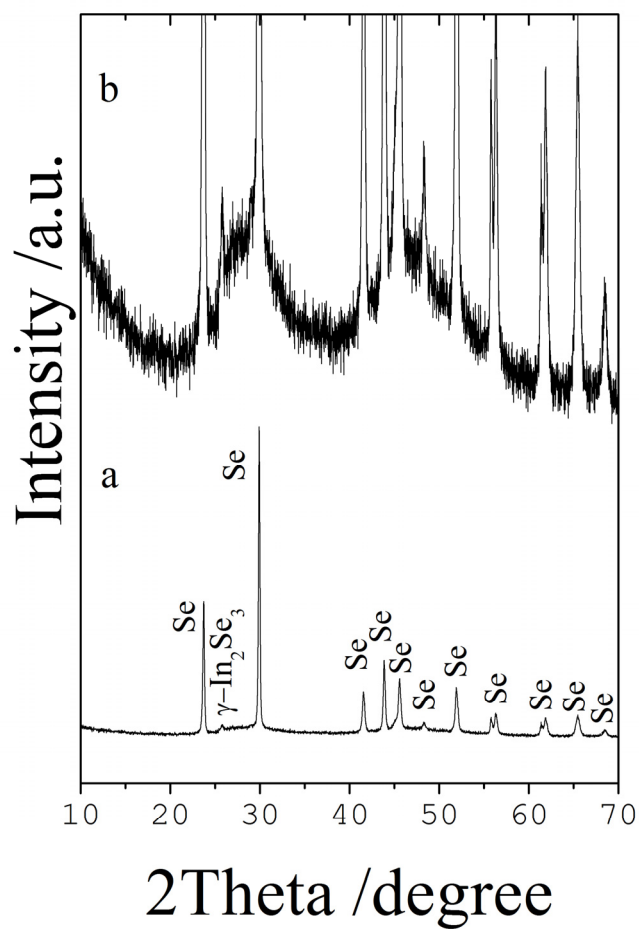
**Fig. S2** The TEM image of common sphere when the reaction time is 1.5 h.



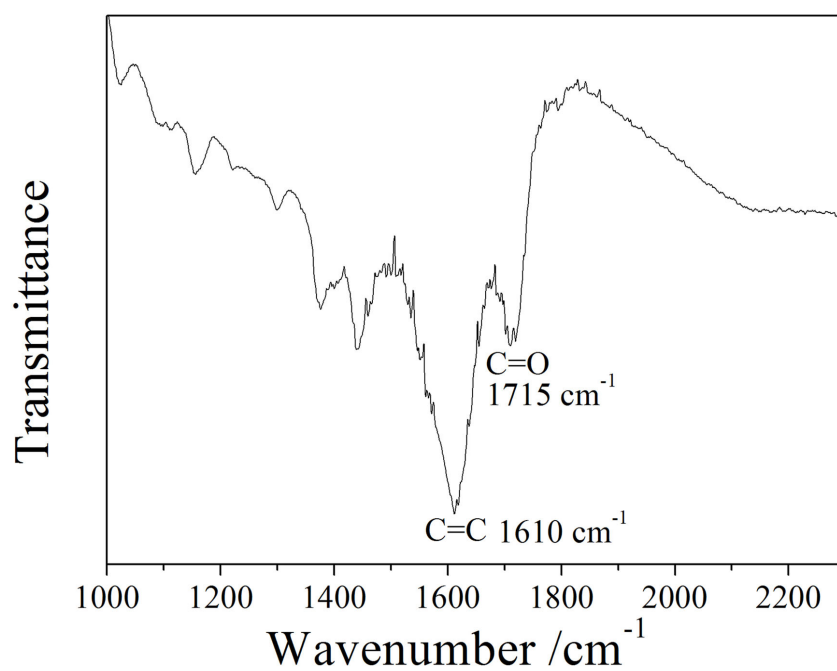
**Fig. S3** The SEM image of common sphere when the reaction time is 1.5 h.



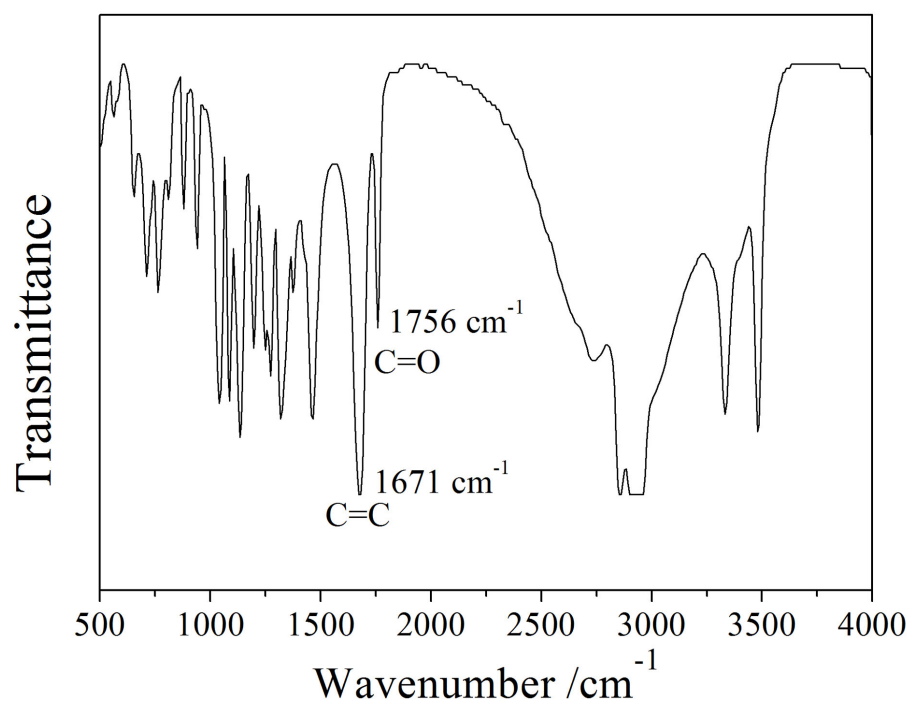
**Fig. S4** The EDX image of common sphere when the reaction time is 1.5 h.



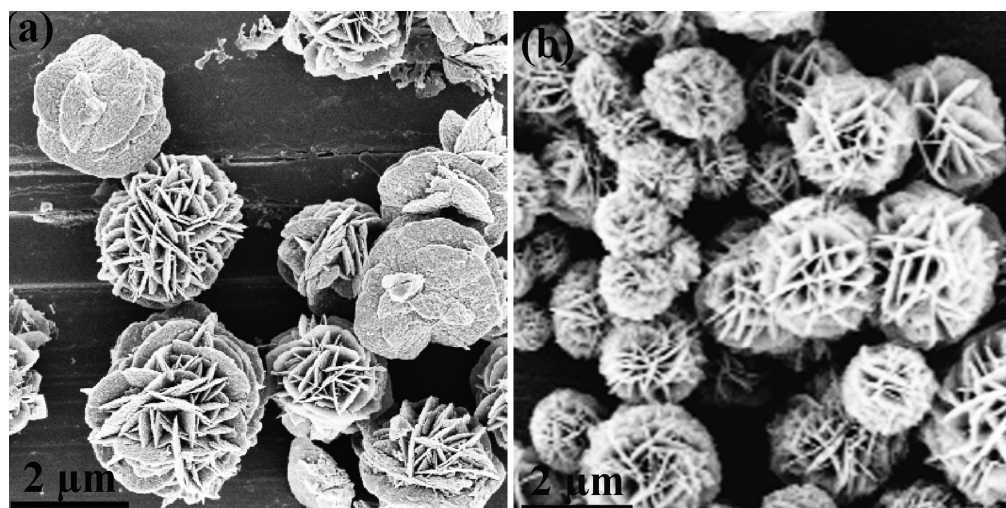
**Fig. S5** (a) XRD patterns of sample synthesized at 220 °C for 1 h, (b) the magnification image of (a), which demonstrates the existence of amorphous indium selenide.



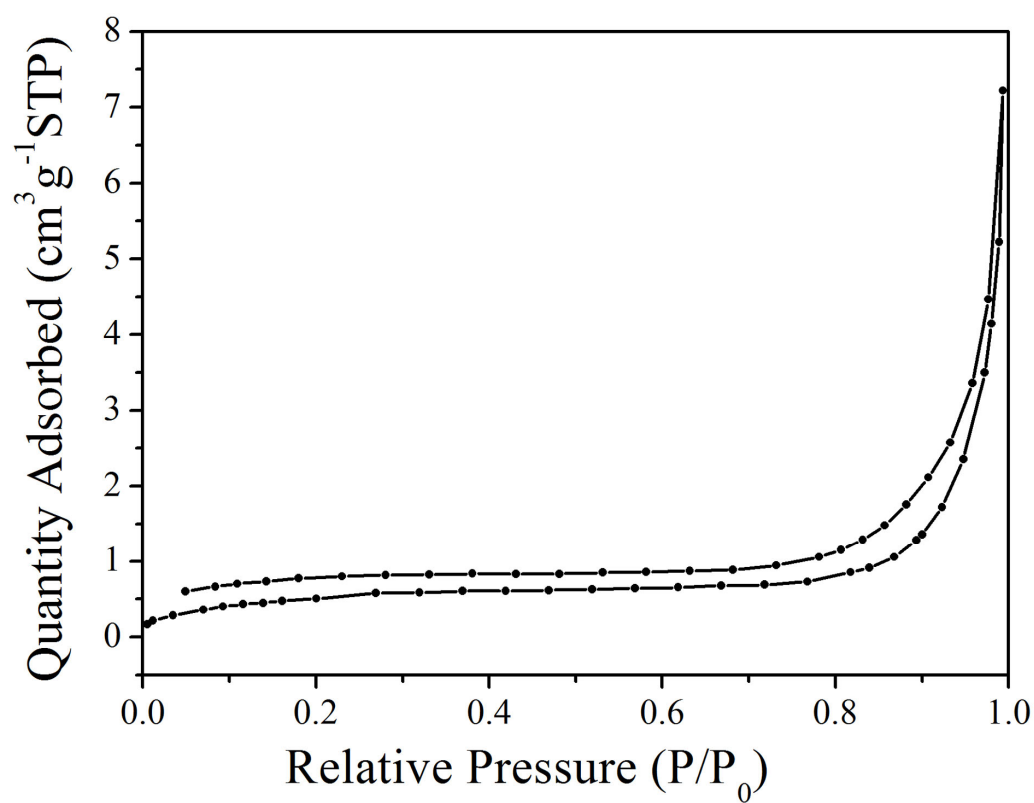
**Fig. S6** The FTIR spectrum of the In<sub>2</sub>Se<sub>3</sub> flowerlike microsphere.



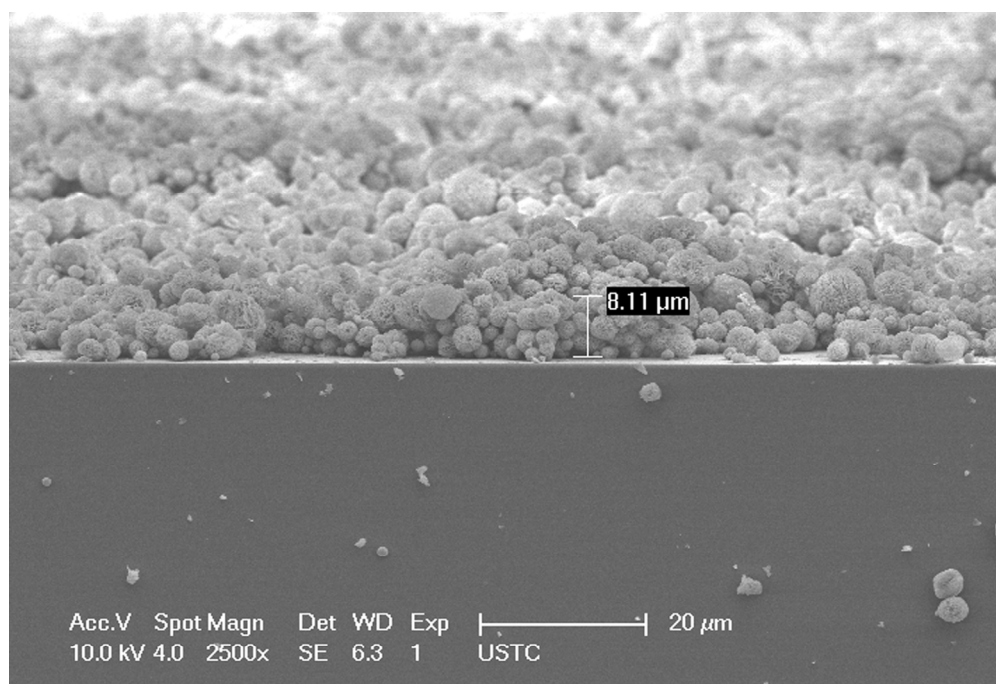
**Fig. S7** The FTIR spectrum of the standard ascorbic acid.



**Fig. S8** SEM images of the samples when the ascorbic acid is (a) 1 mmol, and (b) 3 mmol.



**Fig. S9** Nitrogen adsorption-desorption isotherms of the truncated double hexagonal pyramids.



**Fig. S10** SEM image of the side of the film consisted of  $\text{In}_2\text{Se}_3$  flowerlike microspheres.