

Supporting Information

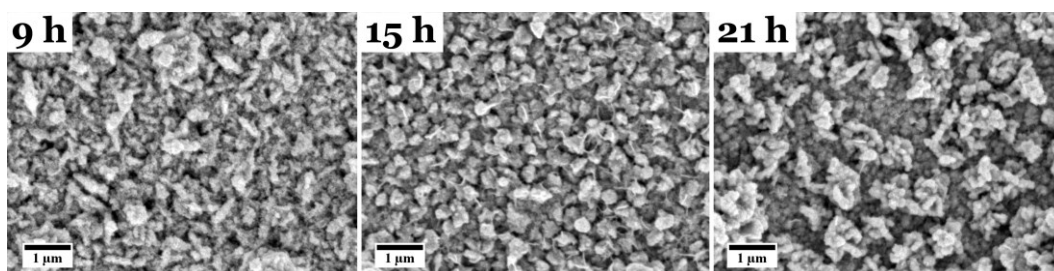


Figure S1. Top-view SEM images of CuInS₂ films synthesized with L-cysteine for different reaction times at 150 °C. Shown are film_9h, film_15h and film_21h.

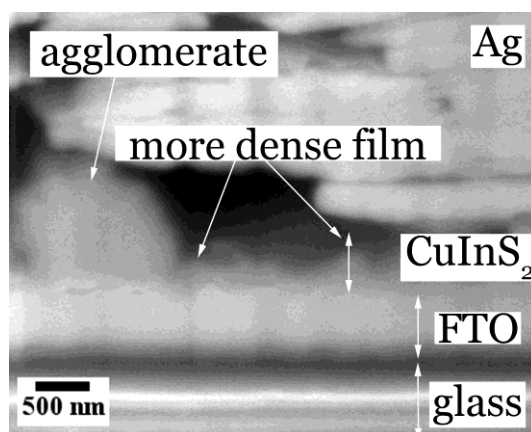


Figure S2. FIB SE image of an exemplary FIB cross section for the film thickness determination of film_140 °C is shown, displaying large fluctuations in the film thickness due to the agglomerates.

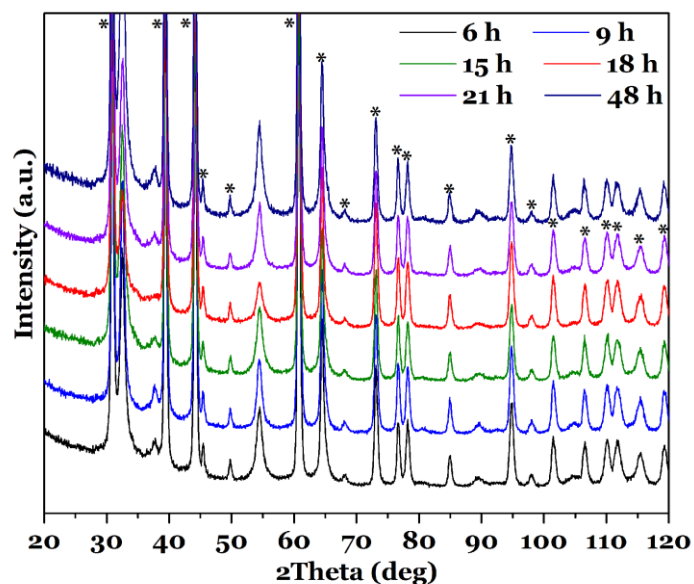


Figure S3. XRD pattern of CuInS₂ films synthesized with L-cysteine for different reaction times, 6, 9, 15, 18, 21 and 48 h, at 150 °C. Signals stemming from FTO are marked with *, the ones originating from CuInS₂ with #.

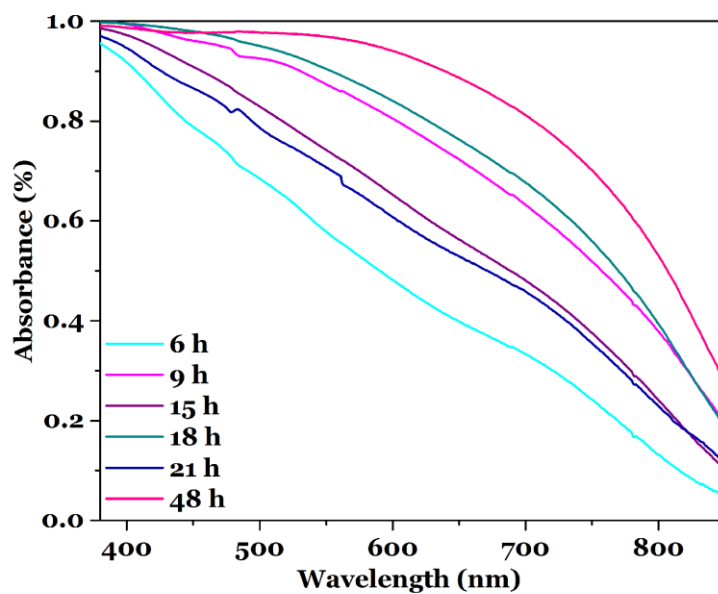


Figure S4. UV-vis spectra of CuInS₂ thin films on FTO substrate, synthesized solvothermally with L-cysteine grown for different reaction times at 150 °C.

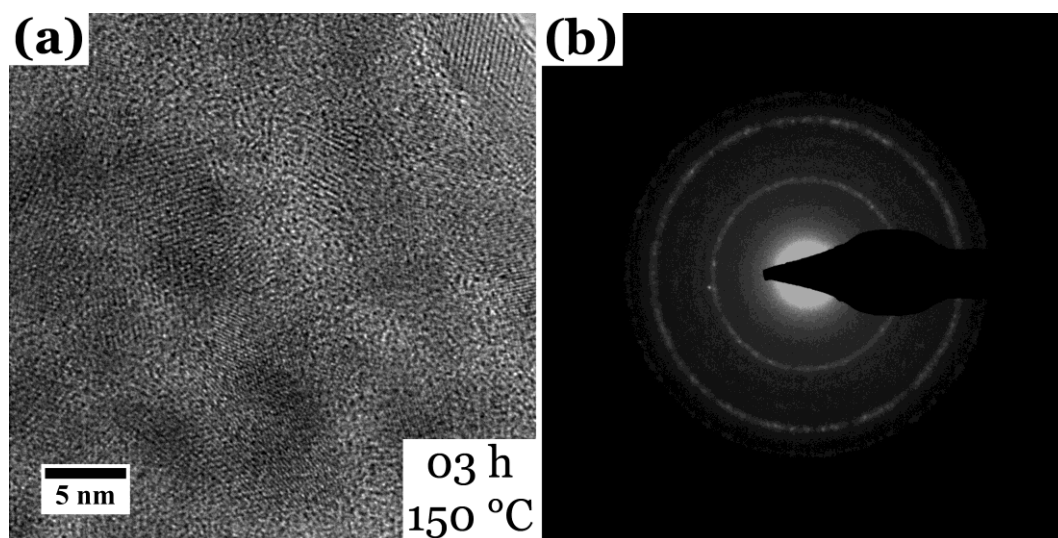


Figure S5. (a) HR TEM image and (b) electron diffraction pattern of a CuInS₂ film synthesized with L-cysteine for 3 h at 150 °C (film_3h).

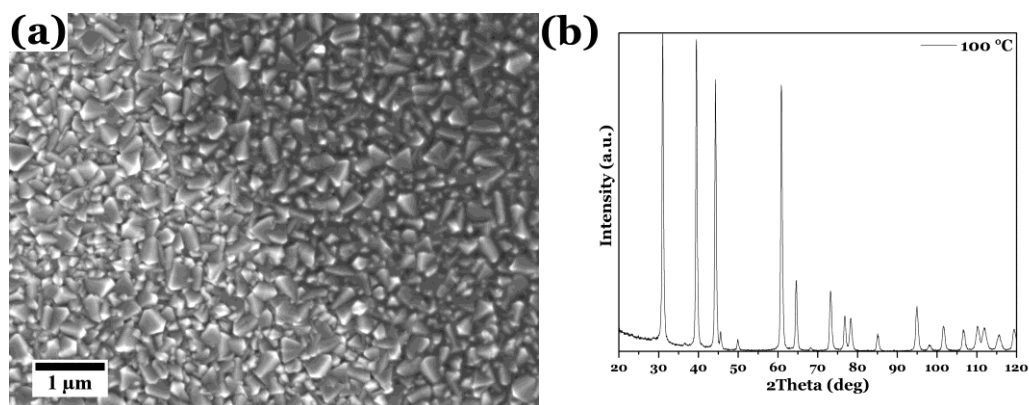


Figure S6. (a) SEM image and (b) XRD pattern of film_100 °C. Only pure FTO can be observed in SEM and XRD.

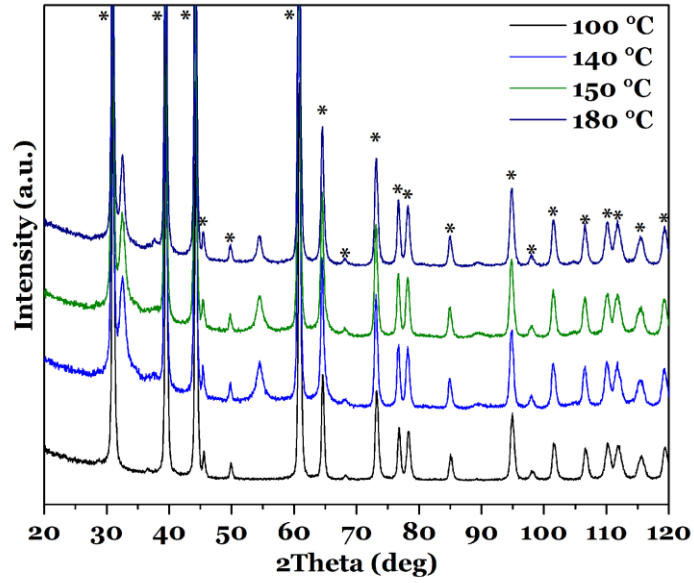


Figure S7. XRD pattern of CuInS₂ films synthesized with L-cysteine at different reaction temperatures, 100, 140, 150, and 180 °C, for 18 h. Signals stemming from FTO are marked with *, the ones originating from CuInS₂ with #.

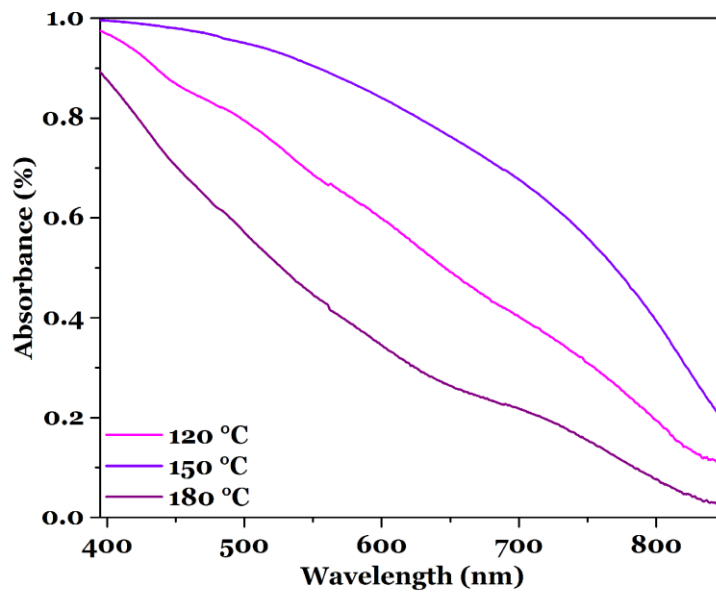


Figure S8. UV-vis spectra of CuInS₂ thin films on FTO substrate, synthesized solvothermally with L-cysteine grown for 18 h at different reaction temperatures.