

Chemical welding of binary nanoparticles: room temperature sintering of CuSe and In_2S_3 nanoparticles for solution-processed $\text{CuInS}_x\text{Se}_{1-x}$ solar cells

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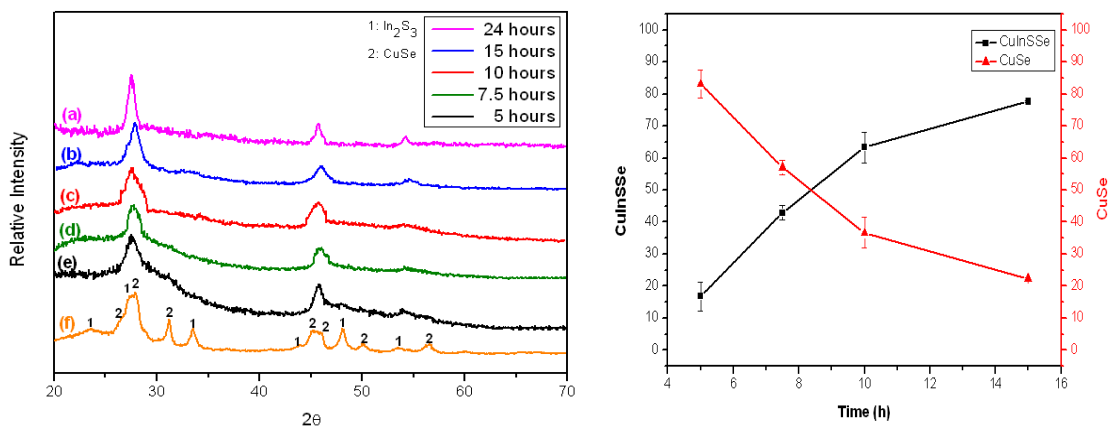


Figure S1: (a) XRD patterns of products after (a) 24hours, (b) 15 hours, (c) 10hours, (d) 7.5 hours, (e) 5 hours and (f) time 0h; (b) Quantitative Analysis - Rietveld refinement of products at different reaction times.

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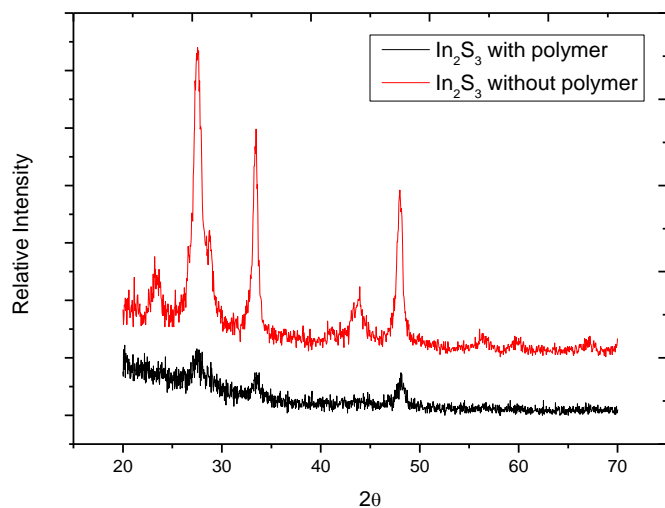


Figure S2: XRD pattern of In_2S_3 with and without polymer (JCPDF_025-0390)

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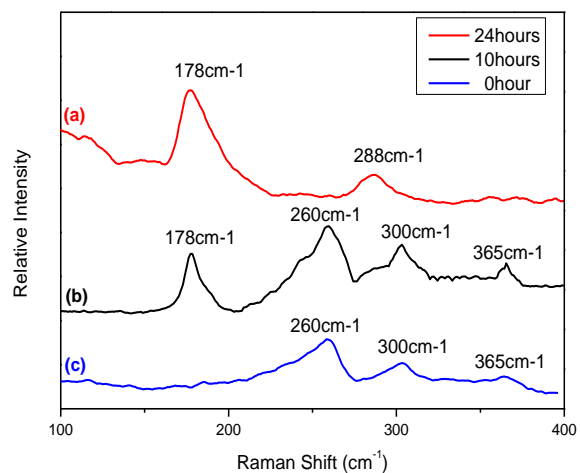
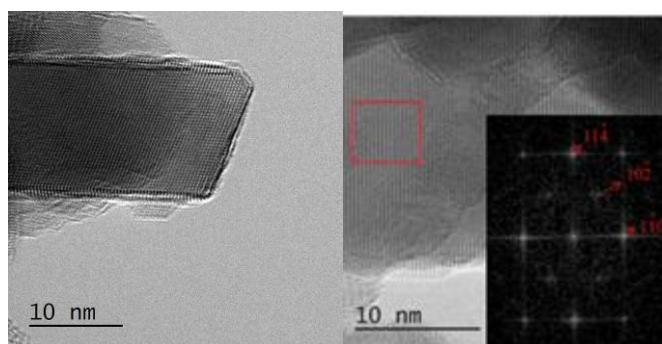
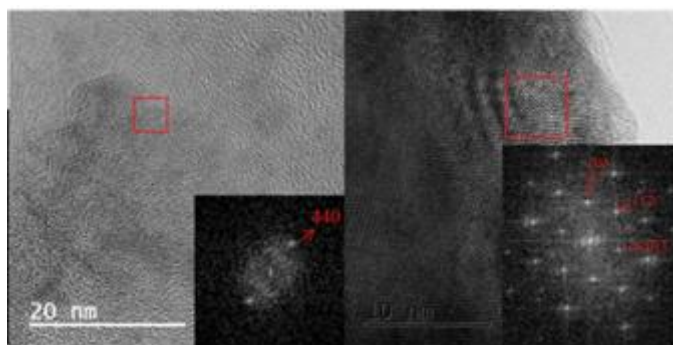


Figure S3: Raman spectra of products after (a) 24hours, (b) 10hours and (c) at time 0hour.



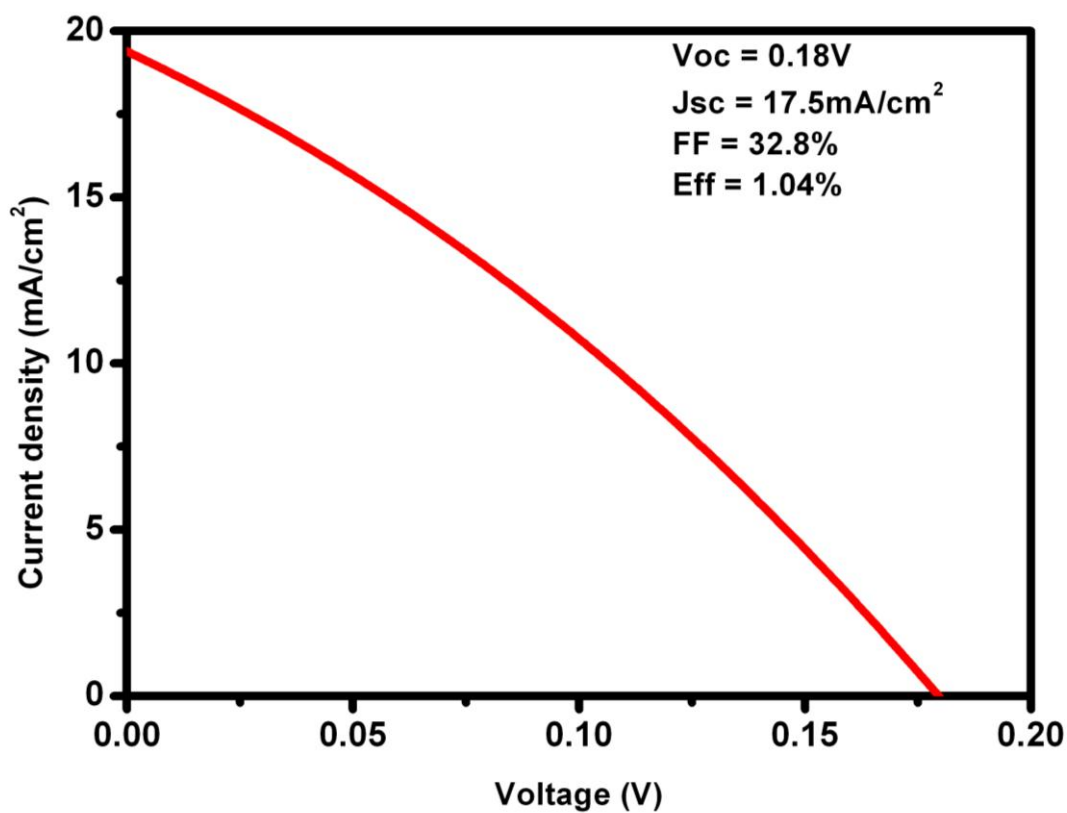
(a)



(b)

(c)

Figure S4: HRTEM images for (a) CuSe, (b) In₂S₃ and (c) CuIn(S_xSe_{1-x})₂. Inserts are the FFT of the respective HRTEM of the samples.



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Figure S5: Photovoltaic performance of $\text{CuInS}_x\text{Se}_{1-x}$ device fabricated from coalesced particles.