Formation of $CuInSe_2$ from CuSe and InSe binary compounds by wet process

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The chalcopyrite CuInSe2 (CIS) was used as an absorber layer for CuInSe2/CdS hetero-junction solar cell performance. CIS have direct band gap (1.04 eV) and high absorption coefficient (105 cm-1) of the order for photons with energies above 1 eV.
In this study, CIS was synthesized from binary compound of CuCl and selenium powder using alcohols as solvent. CIS thin film was prepared by mixing powders of CuSe and InSe binary phase and heat treatment. The binary precursors such as CuSe, InSe and In2Se3 were synthesized using facile chemical route from suitable resources at different stoichiometric ratios. And then, high-quality CIS absorption layer was formed by using three binary compounds.
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