

Supporting Information

Solution processed Cu_2XSnS_4 (X= Fe, Co, Ni) photo-electrochemical and thin film solar cells on vertically grown ZnO nanorod arrays

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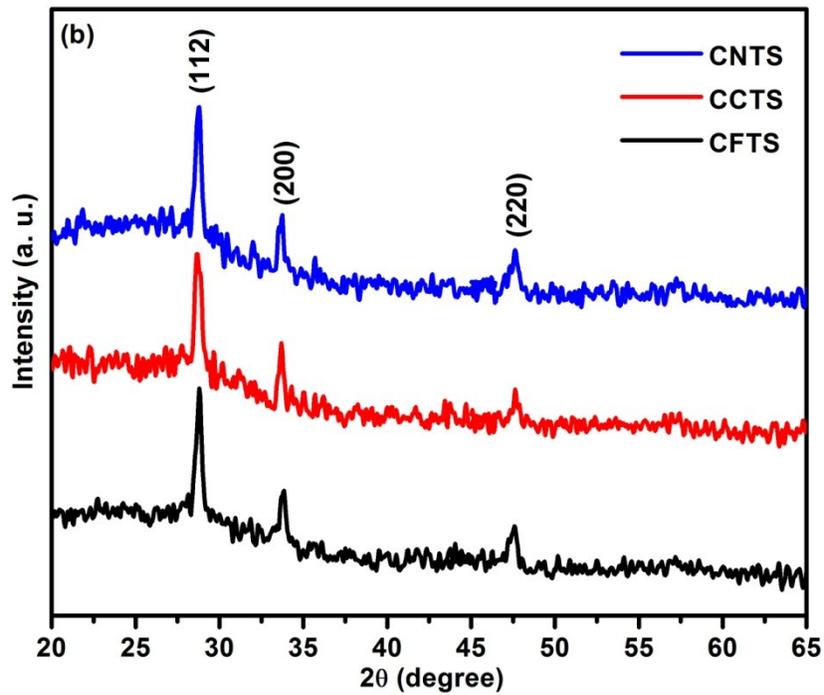
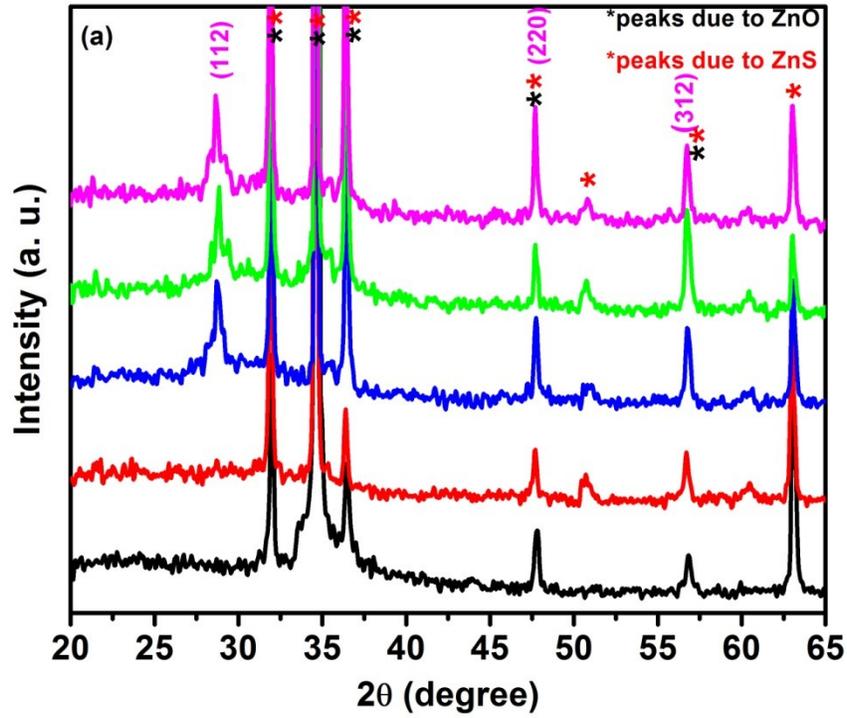


Figure S1. (a) Magnified view of Y-axis of Fig. 2 (b) XRD patterns of the CFTS, CCTS and CNTS thin films

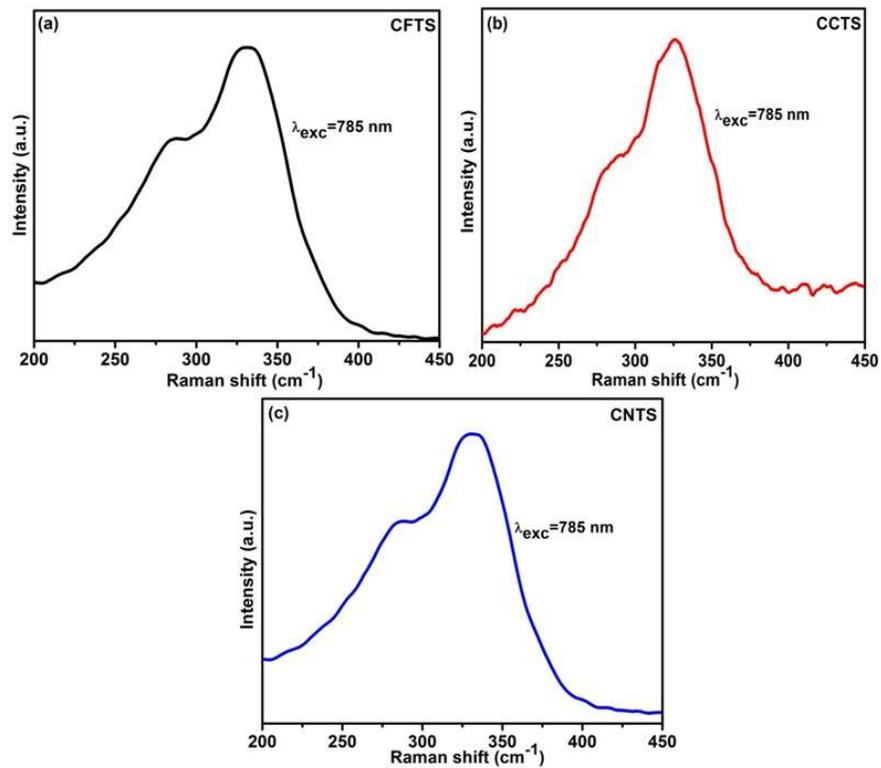


Figure S2: Raman spectra of the (a) CFTS, (b) CCTS and (c) CNTS thin films.[23]

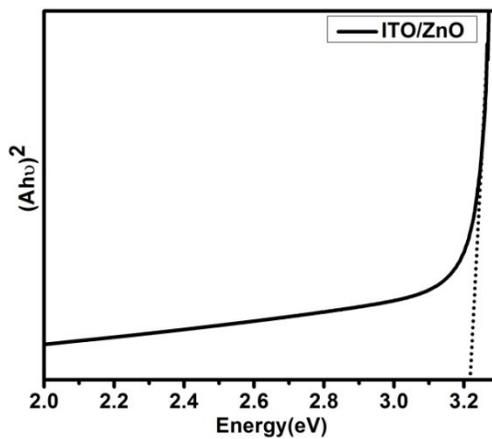


Figure S2(a): tauc plot of ZnO nanorod arrays.

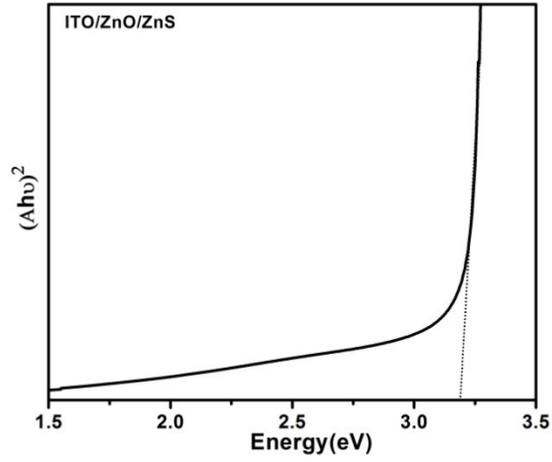


Figure S2(b): tauc plot of ZnO/ZnS.

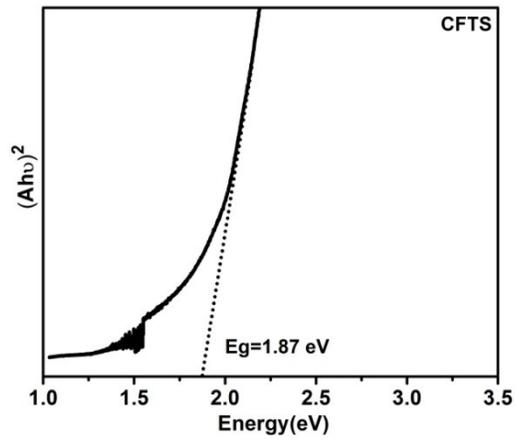


Figure S2(c): tauc plot of CFTS thin film.

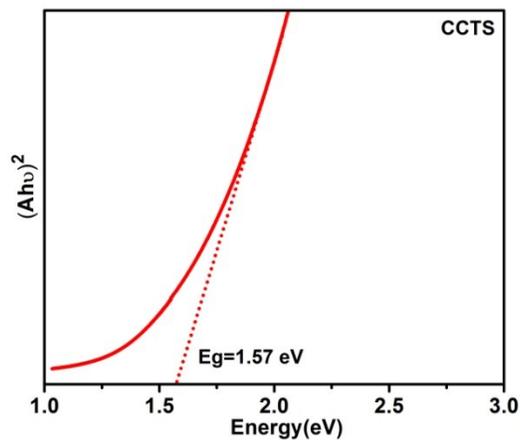


Figure S2(d): tauc plot of CCTS thin film.

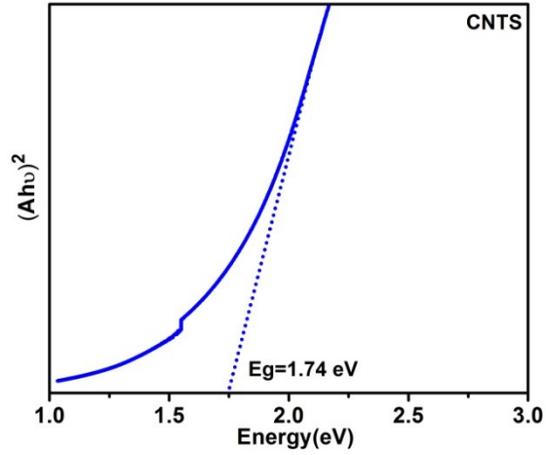


Figure S2(e): tauc plot of CNTS thin film.

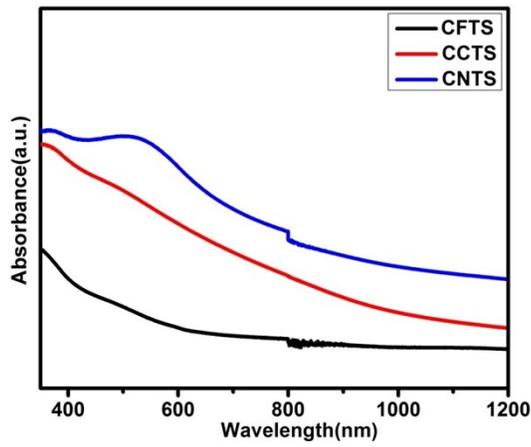


Figure S3: Absorption spectra of CFTS, CCTS and CNTS thin films.[23]

Note: the noise has come in absorption spectra of CFTS and CNTS due to instrumental error.

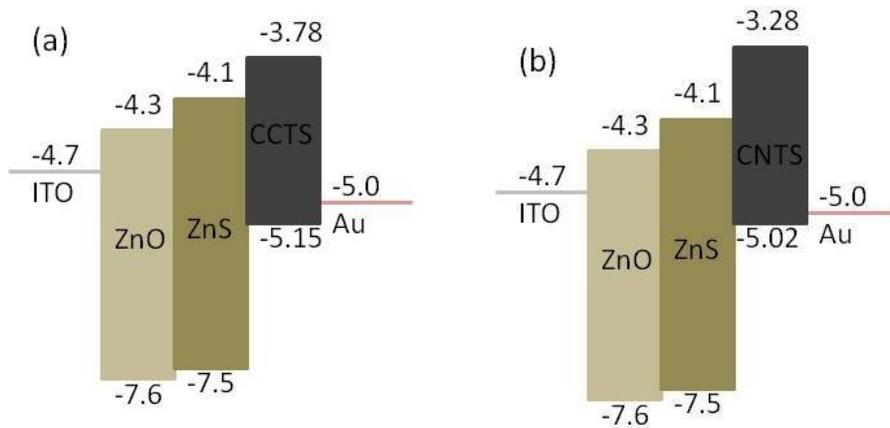


Figure S4: Energy level diagram: (a) ITO/ZnO/ZnS/CCTS/Au (b) ITO/ZnO/ZnS/CNTS/Au.

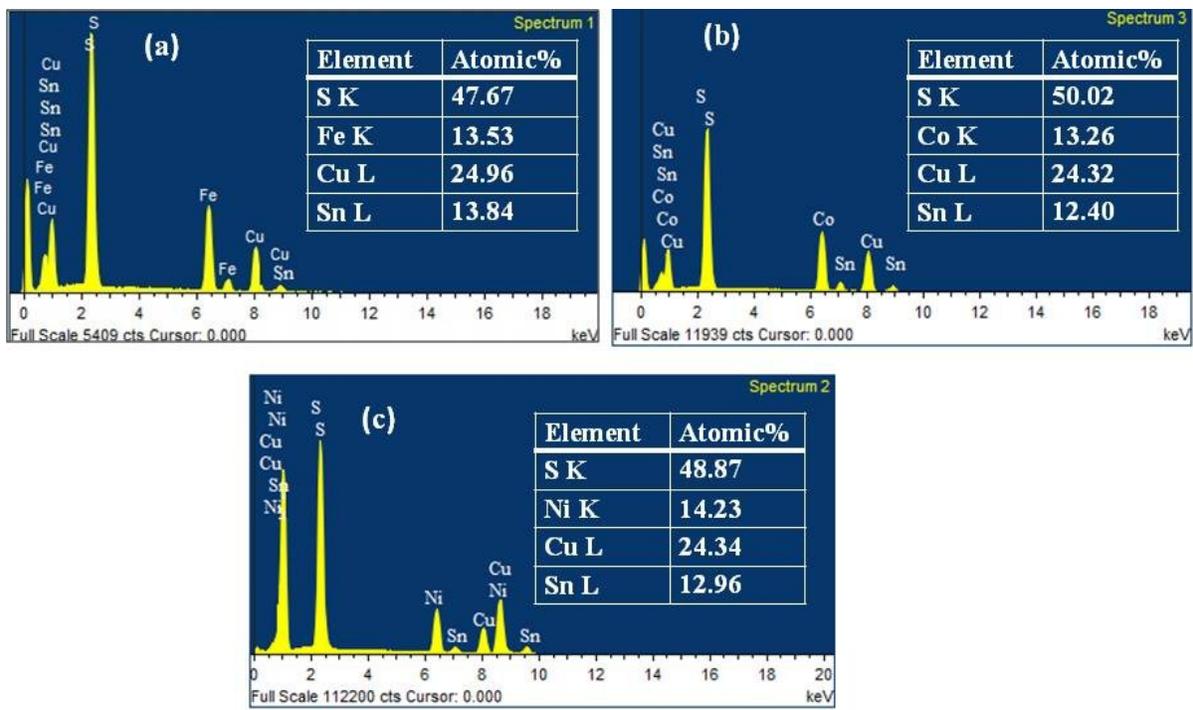


Figure S5: EDX spectra of (a) CFTS, (b) CCTS, and (c) CNTS. [23]