



SDI FINAL EVALUATION FORM 1.1

PART 1:

Journal Name:	Physical Science International Journal
Manuscript Number:	Ms_PSIJ_29024
Title of the Manuscript:	Influence of Annealing Temperature on the Physical Properties of Polycrystalline Cu ₂ SnSe ₃ Thin Films Prepared by Thermal Vacuum Evaporation Technique
Type of Article:	Original Research Article

PART 2:

FINAL EVALUATOR'S comments on revised paper (if any)	Authors' response to final evaluator's comments
<p>Unfortunately, I did not see obvious improvements in the revised manuscript. One thing should be pointed out is EDX is not very accurate when comes to element analysis. A smooth surface is needed for element quantity analysis. However, drastic change in top surface morphology has been clearly observed from SEM.</p> <p>Also, it is hard to believe a >10% change in Cu percentage in the CIS alloy. Cu is much more stable than In and Se. It is impossible to have Cu evaporation at such a low temperature.</p> <p>500°C-sulfurized CIS based photovoltaic cells have been reported to show increased efficiency. Thermal stability of CIS has been widely studied and authors should read related literatures . (J Nanosci Nanotechnol. 2014 Dec;14,12:9313-8; J. Electrochem. Soc. 2015volume 162, issue 1, D36-D41; DOI: 10.1002/pssa.201431232 DOI: 10.1007/s00339-013-8146-9)</p>	<p>As mentioned earlier, the energy peaks for each element decrease with increasing annealing temperature. However, the percentage of Se increases due to the minor loss in atomic percentage of Cu and Sn when annealing temperature was employed. This result is in good agreement with previous discussion on SEM micrograph and AFM topography reported.</p> <p>Thank you for your comments. However, we believe that situation come from the thermal evaporation techniques. Even in vacuum condition inside the chamber there is a possibility annealing temperature giving accurate composition for Cu, Sn and Se. After deposition finished, material will be quickly transferred to other container. While this process using a lot of time to use same sample for XRD, XRF, SEM, AFM, Profilometer, IV, Van der Pauw, EDX, latest TEM, they involves direct exposure to oxygen which are promotes to small oxidation process to Cu and Sn. However we already try to minimize the oxygen exposure as much as we can and the best consistent results have been obtained and reported here.</p>