

## Enhancing the stoichiometry of sequentially electrodeposited CZTS thin films

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Copper zinc tin sulfide (CZTS) is a promising chalcogenide semiconductor which has received increasing interest in the last two decades for applications in solar cells. It offers favorable optical and electronic properties similar to CIGS (copper indium gallium selenide) making it well suited for use as a thin-film solar cell absorber layer. CZTS solar cells have a more promising alternative, with a band gap of about 1.5eV and an absorption coefficient of the order of  $10^4 \text{ cm}^{-1}$  [1]. Moreover, all elements of this quaternary material are non-toxic [2], and not very expensive.

This work involves the synthesis of thin layers CZTS for photovoltaic application. The thin films were prepared on Mo/Si substrate by the electrochemical deposition technique, which is an easy and cheap deposition method [3]. In this study, we present an enhancement of CZTS thin films properties by using a sequential mode electrodeposition and by varying the concentration of zinc in the electrolyte. The aim is to produce a single phase kesterite absorber with a uniform structure. Several techniques for structural, morphological and optical characterizations are used to reveal the physical and chemical properties.

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### References

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