Contribution ID: **472** Type: **Poster Presentation**

Effect of Ion Implantation on Structural and Optical Properties of CZTS Thin Films

The study presents the findings of the effect of ion implantation on pristine Copper Zinc Tin Sulphide (CZTS) thin films. The CZTS films were prepared by utilizing a two-stage process, i.e. e-beam deposition of metal precursors; Cu, Zn, and Sn followed by sulphurization process in the tube furnace at 500℃ for 30 min. These samples were further implanted with 150 keV V+ ions utilizing fluences, 1x10^16, 3x10^16, and 1x10^17 ions/cm^2. Fundamental properties that govern the photovoltaic applications, i.e., structural and optical were investigated on pristine and ion-implanted CZTS thin films using XRD, Raman, and UV-VIS techniques. The Raman results highlighted the presence of defects in the CZTS samples. UV-VIS revealed an energy band gap in the 1.83 - 1.45 eV range, and absorption within the UV range.

Apply for student award at which level:

PhD

Consent on use of personal information: Abstract Submission

Yes, I ACCEPT

Primary author: Ms MOIPOLAI, Tshegofatso (University of South Africa -iThemba LABS)

Co-authors: MADHUKU, Morgan (iThemba LABS); Prof. MOLOI, Sabata (University of South Africa); MASENYA, Mamogo (iThemba LABS); MTSHALI, Christopher (iThemba LABS)

Presenter: Ms MOIPOLAI, Tshegofatso (University of South Africa -iThemba LABS)

Session Classification: Poster Session

Track Classification: Track A - Physics of Condensed Matter and Materials