

Abstract Submitted  
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**Electrical and Chemical Characterization of  $\text{Cu}(\text{In,Ga})(\text{Se,S})_2$  Solar Cells**<sup>1</sup> MALTE KOEHLER, MICHAEL RICHTER, JANET NEERKEN, STEPHAN HEISE, JUERGEN PARISI, Carl von Ossietzky University of Oldenburg, Germany — Chalkopyrid thin film solar cells like CIGS and CIGSSe have reached comparable efficiencies like polycrystalline silicon based solar cells within the last years. Still some research has to be done to increase its efficiency even further. This work focuses on the relationship between the electrical and the chemical parameters of these solar cells. The composition of the absorber layer can vary laterally over a solar cell due to inhomogeneous deposition processes. The  $\text{Ga}/(\text{Ga}+\text{In})$  and the  $\text{S}/(\text{S}+\text{Se})$  ratios influence the band structure and therefore have a big impact on the electrical parameters of these solar cells. These depth dependent ratios were investigated on a nanometer scale using energy dispersive X-ray spectroscopy in a transmission electron microscope (TEM-EDX) and on a millimeter scale using glow discharge optical emission spectroscopy (GDOES).

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