

Abstract Submitted
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Interface properties of chalcopyrite heterocontacts CHRISTIAN PETTENKOFER, ANDREAS HOFMANN, EIKE JANOCHA, CARSTEN LEHMANN, Helmholtz-Zentrum Berlin, E-I4 TEAM — Interface properties of heterocontacts determine the device performance of thin film solar cells. We investigated well defined chalcopyrite interfaces and heterocontacts of MBE grown samples by electron spectroscopy to obtain informations on the morphology and electronic properties of the contact phases. In particular CuInSe₂ and CuInS₂ (001) and (112) surfaces were grown by MBE and studied with respect to contact formation to ZnO, ZnS and ZnSe. Due to Cu back diffusion into the bulk even for stoichiometric samples Cu poor interfaces were observed giving rise to interdiffused Zn₃In₂X₆ (X=S,Se) layers in the contact plane. Band alignments obtained for the prepared heterocontacts will be compared to models given by Mönch and Wei et al. The influence of contact preparation on the properties of the interface will be discussed in detail.

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