

Abstract Submitted  
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**Photoelectron spectromicroscopy study of a misfit layer compound, and its interaction with Cs** HANS STARNBERG, Department of Physics, Göteborg University, SE-41296 Göteborg, Sweden, MATTHIAS KALLÄNE, Institut für Experimentelle und Angewandte Physik, Universität Kiel, D-24118 Kiel, Germany, SVEN STOLTZ, Department of Physics, Göteborg University, SE-41296 Göteborg, Sweden — Misfit layer compounds are built of alternating MX and TX<sub>2</sub> layers, where M is e.g. Sn or Pb, T is a transition metal, and X is S or Se. We have studied surfaces of (PbS)<sub>1.13</sub>TaS<sub>2</sub> and their interaction with Cs, using the photoelectron microscopy beamline at MAX-lab, Sweden. By imaging the sample using emission from the Pb 5*d* and Ta 5*d* core levels, we resolved domains terminated by either PbS or TaS<sub>2</sub> layers. Imaging by Cs 4*d* emission revealed larger sticking of Cs on the PbS terminated domains. Further information was obtained by measuring high-resolution spectra from different domains, before and after Cs deposition. We found that the PbS layers react with the Cs, while the TaS<sub>2</sub> layers are more inert. The results also indicated presence of substitutional defects. Cs intercalation of the kind observed in TaS<sub>2</sub> polytypes was not observed.

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