

Subtopic 1.2: PV: Materials and Interfaces

Prof. Dr.-Ing. Marcus Bär

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Current positions

Head of Division “Interface Design” at HZB (since 2018)
Head of Research Department “X-ray Spectroscopy at Interfaces of Thin Films” at Helmholtz Institute Erlangen-Nürnberg for Renewable Energy (since 2018)
Professor for X-ray Spectroscopy, Friedrich-Alexander Universität Erlangen-Nürnberg (since 2018)

Previous positions (two selected)

Juniorprofessor, Institut für Physik und Chemie, BTU Cottbus (2011-2017)
Research Assistant Professor, Dept. of Chemistry, University of Nevada, Las Vegas, USA (2007-2009)

Scientific degree

Dr.-Ing. Electrical Engineering TU Berlin (2004)

Recent research topics

Improving Thin-Film Solar Cells by Deliberate Interface Design, Electron and X-Ray Spectroscopies, Surface/Interface Analysis of Energy Conversion Materials and Devices

Awards, honors, memberships

Proposal to establish a joint HZB/BTU Helmholtz-University Young Investigator Group gets elected by the Helmholtz-Association (2007)
Winning a 2-year scholarship within the Emmy-Noether program of the German Research Foundation (2005)
Hahn-Meitner-Technologie-Transfer-Preis for outstanding services in the area of technology transfer (2002)

Publications (5 most important)

- **C. Hartmann**, G. Sadoughi, **R. Félix**, **E. Handick**, H.W. Klemm, et al., Spatially-Resolved Insight into the Chemical and Electronic Structure of Solution Processed Perovskites – Why to (Not) Worry about Pin-Holes, *Adv. Mater. Interfaces* 171420 (2018), [doi:10.1002/admi.201701420](https://doi.org/10.1002/admi.201701420).
- **M. Bär**, I. Repins, L. Weinhardt, **J.-H. Alsmeier**, S. Pookpanratana, et al., Zn–Se–Cd–S interlayer formation at the CdS/Cu₂ZnSnSe₄ thin-film solar cell interface, *ACS Energy Lett.* 2, 1632 (2017), [doi:10.1021/acseenergylett.7b00140](https://doi.org/10.1021/acseenergylett.7b00140).
- **R.G. Wilks** and **M. Bär**, Perovskite solar cells: Danger from within, *Nature Energy* 2, 16204 (2017), [doi:10.1038/nenergy.2016.204](https://doi.org/10.1038/nenergy.2016.204).
- **E. Handick**, P. Reinhard, **J.-H. Alsmeier**, **L. Köhler**, F. Pianezzi, et al., Potassium postdeposition treatment-induced band gap widening at Cu(In,Ga)Se₂ surfaces – Reason for performance leap?, *ACS Appl. Mater. Inter.* 7, 27414 (2015) [doi:10.1021/acsami.5b09231](https://doi.org/10.1021/acsami.5b09231).
- **D.E. Starr**, G. Sadoughi, **E. Handick**, **R.G. Wilks**, **J.H. Alsmeier**, et al., Direct observation of an inhomogeneous chlorine distribution in CH₃NH₃PbI_{3-x}Cl_x layers: surface depletion and interface enrichment, *Energy Environ. Sci.* 8, 1609 (2015) [doi:10.1039/C5EE00403A](https://doi.org/10.1039/C5EE00403A).