

Prof. Dr. Ehrenfried Zschech

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Date and place of birth:

March 30, 1956, in Auritz (Saxony)

Citizenship: German



Professional Experience and Scientific Carrier

Jan 14 – today	Department Head Microelectronic Materials and Nanoanalysis at Fraunhofer Institute for Ceramic Technologies and Systems, Dresden
Aug 09 – Dec 13	Department Head Nanoanalysis and Testing at Fraunhofer Institute for Nondestructive Testing, Dresden
April 97 – July 09	Sr. Manager of the Center for Complex Analysis at AMD Saxony LLC & Co. KG/GLOBALFOUNDRIES Fab One LLC & Co. KG, Dresden, 9 months working stay at AMD Inc. in Austin/TX and Sunnyvale/CA (US)
Oct 92 – March 97	Section Manager Metal Physics in the Development Department at Airbus GmbH, Bremen
Feb 89 – Sep 92	Assistant Professor (Dozent) for Inorganic Nonmetallic Materials at Technical University Bergakademie, Freiberg
Mar 85 – Jan 89	Head of the X-Ray Diffraction Analysis Lab and Project Lead in the Metal Physics Department at the Research Institute of Non-Ferrous Metals, Freiberg
Sep 79 – Feb 85	Research Associate in the Division of Metal- and X-Ray Physics at Technical University Dresden, 6 months post-graduate research at the Synchrotron Radiation Center of the Institute of Nuclear Physics in Novosibirsk (Russia)

Professorships

since 2015	Adjunct Professor at University of Warsaw, Faculty for Chemistry
since 2012	Adjunct Professor for Nanoanalysis at Technical University Dresden
since 2006	Adjunct Professor for Nanomaterials at Brandenburg University of Technology Cottbus

Academic Graduations and Education

Nov 88	Habilitation, Dr. rer. nat. habil. at TU Dresden
Feb 85	Graduation, Dr. rer. nat. ("magna cum laude") at TU Dresden
Aug 79	Diploma degree in solid state physics ("very good") at TU Dresden
Sep 74 – Aug 79	Studies in physics at TU Dresden
Sep 70 – Aug 74	Post-graduated secondary school in Bautzen
Sep 62 – Aug 70	Polytechnic secondary school in Bautzen

Membership of Scientific Societies

- since 2018 **Member of the Board of Directors of the Materials Research Society (MRS), USA**
- since 2019 **Member of the Senate of the European Materials Research Society (E-MRS), Brussels, Belgium**
- 2003 - 2007 Board Member of the German Society of Materials Science (DGM), Germany
- 2008 – 2015 Executive Member of the Federation of the European Materials Societies (FEMS) - Vice President 2010/2011, President 2012/2013, Immediate Past President 2014/2015, Past President and Corresponding Executive Member since 2016

Fellowships, Prizes and Awards

- 2010 EU Distinguished Lecturer at Technical University Wroclaw, Poland
- 2013, 2014 Visiting Professor at Technical University Warsaw, Poland
- 2017 Visiting Professor at Aix Marseille University, France
- 2017 Distinguished Research Professor at Hankou University Wuhan, China,
- 2017 Honorary Member of the Federation of European Materials Societies (FEMS)
- 2019 **FEMS (Federation of European Materials Societies) European Materials Gold Medal**

Organization of International Conferences and Schools

- 2011 Chair of IEEE IITC MAM Conf.
- 2015 Chair of the Int. Conf. FCMN
- 2013 - 2019 Chair of the annual Dresden Nanoanalysis Symposium
- 2005 - 2016 Chair of the 3 Int. Workshops on Stress Induced Phenomena in Metallization
- 2010 - 2011 Chair of the 3 Int. Workshops on Stress in 3D ICs using TSVs
- Member of the Scientific Committee of several international conferences (IEEE IEDM, IEEE IITC, EUROMAT, ESREF, ECASIA, IPFA, MAM, FCMN, SCD)
- 2011 - 2019 Chair of 5 **International Summer Schools for Young Scientists** “Nano-scale Materials and Materials Characterization”
- 2013 - 2019 Chair of 7 **European Advanced Training Courses (FEMS)** “Nano-scale Materials” and “Artificial Intelligence for Materials Development”

Institutional Responsibilities

- since 2009 **Head of the Steering Committee of the Dresden Fraunhofer Cluster Nanoanalysis, Dresden, Germany**
- since 2014 Member of the Scientific Area Committee “Information technologies and microelectronics” of the DRESDEN concept consortium, Dresden, Germany
- since 2015 Member of the Advisory Board of CENIMAT, University Nova Lisbon, Portugal
- 2012- 2015 Scientific Coordinator of the Dresden Center for Nanoanalysis at TU Dresden

Reviewing Activities, Advisory Boards

- since 2013 Member of the Scientific Advisory Board of the Institute of Lightweight Construction and Hybrid Systems at University Paderborn, Germany
- since 2013 Founding Member of the Managing Board of the European Alliance for Materials (A4M), Brussels, Belgium
- since 2013 Founding Member of the Steering Committee of The European Platform on Advanced Materials and Technologies (EUMAT), Brussels, Belgium
- since 2015 Board member of the Cool Silicon e. V., Dresden, Germany

- since 2016 Founding Operational Management Board member of the European Materials Characterization Council (EMMC), Brussels, Belgium
- since 2019 Member of the Expert Panel Natural Sciences for the Research Evaluation at Charles University in Prague, Czech Republic
- since 2019 Section Editor of BMC Materials (Springer Nature), UK
- since 2019 Advisory Board Member of Silicon Saxony e. V., Dresden, Germany
- 1991 – 1993 Member of the Scientific Advisory Board for Synchrotron Radiation at DESY Hamburg, Germany
- 1998 – 2008 Member of the Advisory Board of SEMATECH for Physical Analysis and Metrology, Austin/TX, USA
- 2003 – 2008 Member of the Scientific Advisory Board of Hahn-Meitner-Institut Berlin, Germany
- 2005 – 2010 Member of the Scientific Advisory Board of Helmholtz Forschungszentrum Dresden-Rossendorf, Germany
- 2008 – 2011 Member of the Scientific Advisory Board of Helmholtz Zentrum Berlin, Germany
- 2009 – 2011 Member of the Commission Microelectronics and Nanoelectronics of the State of Saxony (KOMINAS), Dresden, Germany
- 2010 – 2015 Head of the Scientific Advisory Board of the European Society of Thin Films (EFDS), Dresden, Germany

Leadership in Industrial Innovation / Conducting of Ground-breaking Research

- 1992 – 1997 **Introduction of laser beam welding into aircraft industry:** Metal-physical understanding of laser beam welding of aluminum alloys (@ Airbus Bremen)
- 1997 – 2009 **Introduction of copper interconnect technology into semiconductor industry:** Establishing of copper microstructure analysis techniques (XRD, EBSD) and procedures into Physical Failure Analysis labs (@ AMD Dresden)

Publications and Patents, Start-ups

- h-index: 32, > 200 publications in peer-reviewed journals, > 5200 citations
- 63 issued patents/patent disclosures (published applications in DEPATISnet)
- Co-founder of one start-up (Innotec21 GmbH, Leipzig, Germany)
- Partner in one start-up (ScienceDesk GmbH, Freital, Germany)

Personal Details

Languages German (native), English (fluently), French (basics), Russian (basics), Polish (basics)

Activities Member of Lions Club International since 1993
 Member of Lions Club Radebeul (President 2001/2002)

Cultural and technical history (coinage), music (classic and jazz)
 Jogging, bicycling, skiing