

CV – Prof. Dr. Karl-Heinz Ernst

Prof. Dr. Karl-Heinz Ernst

Empa, Swiss Federal Laboratories for Materials Science and Technology

CH-8600 Dübendorf, Switzerland

<http://www.empa.ch/mss>

Professional Experience:

- 1992-2024 Distinguished Senior Researcher, Empa, Swiss Federal Laboratories for Materials Science and Technology, Dübendorf, Switzerland, since 1998 head of *Surface Technology Group*, (now *Molecular Surface Science Group*)
- 11/2023 Visiting Scientist at the Center of Quantum Nanoscience QNS, Ewha Womans University, Seoul, South Korea (Prof. Andreas Heinrich)
- since 2021 Senior Scientist at the Czech Academy of Sciences, Prague, Institute of Physics
- 2018-2020 European Mobility Professor at the Czech Academy of Sciences, Prague, Institute of Physics, nanosurf Laboratory (Dr. Pavel Jelinek)
- since 6/2018 Lawrence Berkeley Lab Research Affiliate
- 2012 Visiting scientist at IBM Almaden, San Jose, California, USA, w/ Dr. Andreas Heinrich
- Since 2010 Professor, Department of Chemistry, University of Zurich
- 10/2017 Visiting Professor Université Angers, France
- 7/2009 Visiting Scientist Chinese Academy of Sciences, Institute of Physics, Prof. H.-J. Gao
- 9/2003-8/2004 On sabbatical leave to University of Washington, Seattle, USA, Department of Bioengineering, Group of Prof. Viola Vogel
- 8/1999-5/2000 On sabbatical leave to UC Berkeley, Department of Physics and Lawrence Berkeley National Laboratory, California, USA, Group of Prof. Yuen-Ron Shen
- 1992 Visiting scientist at the Freie Universität Berlin, Sonderforschungsbereich (SFB 6) of the German National Science Foundation (DFG)
- 1990 - 1991 Post-Doctorate at the University of Washington, Seattle, USA, Department of Chemistry, Group of Prof. Charles Campbell

Education:

- 2007 Habilitation at University Zurich, Degree: **Private Dozent (PD)**
- 1986 - 1990 Graduate Study at the Inst. f. Physical Chemistry, Freie Universität Berlin and at the Berlin Electron Storage Ring for Synchrotron Radiation (BESSY), Supervisor: Prof. Dr. Klaus Christmann, Thesis reviewers: Prof. Dr. Klaus Christmann, Prof. Dr. Gerhard Ertl, Degree: **Dr. rer. nat.** (magna cum laude)
- 1982 - 1986 Chemistry, Freie Universität Berlin (FUB), Degree: **Diplom-Chemiker**
- 1979 - 1982 Chemical Engineering at the University of Applied Sciences (Technische Fachhochschule, TFH) Berlin, Degree: **Chemie-Ingenieur (grad.)**
- 1978 - 1979 Compulsory military service, Gießen & Hann. Münden, Germany
- 1977 - 1978 College specialising in technical subjects, (Technische Fachoberschule), Braunschweig, Degree: **Fachhochschulreife**
- 1975 - 1977 Professional training, School of Chemistry Dr. Heinemann, Braunschweig, Degree: **Chemisch-Technischer Assistent (CTA)**
- 1966 - 1975 Primary and Secondary Schools

Awards:

- 2022 JVSS-Microbeam Analysis Award from the Japan Society of Vacuum and Surface Science (JVSS), Division of Microbeam Analysis (MBA)
- 2016 Functionalized Nano-Materials Award for outstanding achievements in nano materials science, ICON² Symposium, Changchun, Jilin, China
- 2014 Promotion to *Empa Distinguished Senior Researcher*
- 2014 Großes Naturwissenschaftliches Kolloquium, Universität Duisburg-Essen
- 2009 Bürgerstock Stereochemistry Lecture
- 2009 Zhongguancun Forum Lecture, Beijing, China
- 2003 Empa Research Prize
- 1992 Habilitation Fellowship of the German National Science Foundation (Deutsche Forschungsgemeinschaft, DFG)
- 1990 Postdoctoral Fellowship of the German National Science Foundation (Deutsche Forschungsgemeinschaft, DFG)

Publications: 177, peer reviewed 140, h-citation index: 46 (> 7500 citations)

Presentations: 337 oral presentations, of which 284 were invited

Professional memberships and honorary functions

- a) Lecturer at the Department of Chemistry, University Zurich (since 2007)
- b) Lecturer at the Materials Science Department, ETH Zurich (since 2005)
- c) Lecturer at the Chemistry Department, ETH Zurich (2005–2014)
- d) Lecturer in Physical Chemistry, University of Applied Sciences (TFH) Berlin (1988–1990)
- e) President of the Swiss Working Group for Surface and Interface Science (SAOG) and Chair of the annual SAOG Meeting (since 2008, panel member since 1998)
- f) Member of the Editorial Advisory Board of *CCS Chemistry* (since 2024)
- g) Member of the editorial board of the Wiley journal *Chirality* (since 2019)
- h) Member of the editorial board of the Swiss Chemical Society Journal *CHIMIA* (2012 – 2016)
- i) Member of the editorial board of the Elsevier journal *Surface Science* (2012 – 2014)
- j) Member of the International Editorial Advisory Board of the Wiley journal *Helvetica Chimica Acta* (2016 – 2022)
- k) Member of the local Scientific Advisory Board, European Conference of Applied Surface and Interface Analysis – ECASIA 2003, Berlin
- l) Local organizer of the COST CM0601 ECCL – WG3 Meeting, 07. 03. 2009, Zürich, CH
- m) Member of the Scientific Program Committee ECOSS 2014, Antalya, TR
- n) Organizer of *40 Years of Surface Science and Nanotechnology (40Nano)* Conference, 15. – 20. 10. 2023, Ascona, CH
- o) Organizer of *Chirality at the Nanoscale* Symposium, 13. – 17. 10. 2019, Ascona, CH
- p) Organizer of Symposium of Atomic and Surface Physics (SASP), 2. – 7. 02. 2020, St. Moritz, CH
- q) Organizer of the Symposium ‘Chirality at Surfaces’, ECOSS 2014, Antalya, TR
- r) Member of the Deutsche Bunsengesellschaft (DBG) for Physical Chemistry (since 1987)
- s) Member of the Deutsche Physikalische Gesellschaft (DPG, since 1986)
- t) Member of the Swiss Chemical Society (SCG, since 2010)
- u) Member of the Swiss SSSTC Delegation to Chinese Academy of Science, Beijing, Sept. 2010
- v) Reviewer for international scientific journals such as *Angewandte Chemie*, *Advanced Materials*, *Nature*, *Nature Chemistry*, *Nature Nanotechnology*, *Nano Letters*, *ChemPhysChem*, *Advanced Functional Materials*, *Advanced Materials Interfaces*, *Journal of the American Chemical Society*, *ACS Nano*, *ACS Omega*, *Surface Science*, *Journal of Chemical Physics*, *Journal of Physical Chemistry*, *Journal of Physical Chemistry Letters*, *Surface and Interface Analysis*, *Langmuir*, *Zeitschrift f. Physikal. Chemie*, *Chemistry–A European Journal*
- w) External expert for appointments of professorships at European universities
- x) Reviewer of promotions to full and associate professorships at universities world-wide (>10)
- y) Organizer of two symposia at the National Meetings of the American Chemical Society 2008
- z) Member of the Organizing Committee of the International Conference on Atomic Level Characterization (ALC) 2009: Maui, Hawaii; 2011: Seoul, Korea; 2013: Kona, Hawaii, 2015: Matsue, Japan, 2017: Kauai, Hawaii.
- aa) Member of the International Advisory Committee of the International Conference on Atomic Level Characterization (ALC) 2019: Kyoto, Japan, Okinawa, Japan
- bb) Co-organizer of the 22nd and 30th Symposium of Surface Science (3S) in St. Moritz 2009 & 2017
- cc) Co-organizer of the PIRE ECCI Workshop on heterogeneous catalysis, Dalian, China 2009
- dd) Panel Member for the European Research Council (ERC), consolidator grants, 2013 – 2017
- ee) Panel Member for beam time allocation at BESSY II, Berlin, 2013 – 2016
- ff) Reviewing expert for the European Research Council (ERC), startup, consolidator and advanced grants
- gg) Reviewing expert for the Swiss-Korean Science & Technology programme
- hh) Reviewing expert for NWO, the Nederlandse Organisatie voor Wetenschappelijk Onderzoek (NWO)
- ii) Reviewer, examiner and official opponent for diploma and PhD theses and at PhD defenses at Aarhus and Aalborg University, DK; University of Groningen, NL; University Leuven, B, EPF Lausanne, and University of Zurich
- jj) Guest editor for *Journal of Physics: Condensed Matter* – Karl-Heinz Rieder Festschrift
- kk) Guest editor for the Swiss Chemical Society Journal *CHIMIA*
- ll) Guest editor for the *Journal of Chemical Physics (IOP)*
- mm) Member of the prize committee Gerhard Ertl Young Investor Award of the German Physical Society (DPG) 2014 (endowed by Elsevier)