

Prof. Dr. Ulrich Höfer

(* 07.07.1957) male

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Position: Professor (W3)

Expertise: Experimental physics, laser spectroscopy of surfaces and interfaces, ultrafast electron dynamics, adsorption on semiconductor surfaces



University Education

- 1996 Habilitation (Dr. rer. nat. habil.) in Experimental Physics, TU München, "Nonlinear optical spectroscopy of silicon surfaces"
- 1989 Doctoral degree in Physics (Dr. rer. nat.), TU München, Dissertation on "High resolution photoelectron spectroscopy at surfaces: lineshapes, loss processes and applications", thesis advisor: Prof. E. Umbach
- 1985 Diploma degree in Physics (Dipl. Phys.), TU München, supervisor: Prof. D. Menzel
- 1978-85 Studies in Physics, Technische Universität (TU) München

Professional Experience

- 1999- Professor (C4/W3) for Experimental Physics, Philipps-Universität Marburg
- 1996-99 Lecturer/docent, Physik-Department, TU München
- 1992-99 Group Leader, Surface Dynamics, Laser Chemistry Department (Prof. K.-L. Kompa), Max-Planck-Institut für Quantenoptik (MPQ), Garching/München
- 1990-91 Visiting Scientist, IBM T. J. Watson Research Center, Yorktown Heights, New York (USA), Department of Physical Sciences, Laser Science (Dr. T. F. Heinz)
- 1987-89 Research Assistant, Physik-Department E20 (Prof. D. Menzel), TU München
- 1985-87 Manager Data Processing, Central-Molkerei Augsburg e.G.

Honours, Awards and other Proofs of Qualification

- 2015 Fellow of the Japanese Society for the Promotion of Science (Japan)
- 2014 Selection Committee Member for the Max Planck Research Award
- 2014 Guest Professor, Dept. of Physics, Columbia University, New York
- 2013- Spokesman SFB 1083 "Structure and Dynamics of Internal Interfaces"
- 2011 Ikerbasque Research Professor (Basque Country, Spain)
- 2009 Offer for a chair in Experimental Physics at the University of Würzburg (declined)
- 2007-09 Dean of the Physics Department, Philipps-Universität Marburg
- 2006 Guest Professor, I.S.I.R. (Sanken Institute), University of Osaka, Japan

2006	Fellow of the American Physical Society (USA)
2003-07	Managing Director, Material Sciences Center, Philipps-Universität Marburg
1999	Research Fellow, Institute for Chemical Research, RIKEN, Japan
1998	Adjunct Professor Institute for Quantum Electronics, TU Vienna, Austria
1995	Arnold-Sommerfeld-Prize of the Bavarian Academy of Sciences and Humanities

Publications

Peer-reviewed publications

- 1) **U. Höfer**, I. L. Shumay, Ch. Reuß, U. Thomann, W. Wallauer, Th. Fauster, *Time-resolved coherent photoelectron spectroscopy of quantized electronic states on metal surfaces*, *Science* **277**, 1480 (1997).
- 2) K. Stepán, J. Gütde, **U. Höfer**, *Time-resolved measurement of surface diffusion induced by femtosecond laser pulses*, *Phys. Rev. Lett.* **94**, 236103 (2005).
- 3) M. Dürr, **U. Höfer**, *Dissociative adsorption of molecular hydrogen on silicon surfaces*, *Surf. Sci. Rep.* **61**, 465 (2006).
- 4) J. Gütde, M. Rohleder, T. Meier, S. W. Koch, **U. Höfer**, *Time-resolved investigation of coherently controlled electric currents at a metal surface*, *Science* **318**, 1287 (2007).
- 5) C. H. Schwalb, S. Sachs, M. Marks, A. Schöll, F. Reinert, E. Umbach, **U. Höfer**, *Electron lifetime in a Shockley-type metal-organic interface state*, *Phys. Rev. Lett.* **101**, 146801 (2008).
- 6) N. Armbrust, J. Gütde, P. Jakob, **U. Höfer**, *Time-resolved two-photon photoemission of unoccupied electronic states of periodically rippled graphene on Ru(0001)*, *Phys. Rev. Lett.* **108**, 056801 (2012).
- 7) C. M. Heyl, J. Gütde, A. L'Hullier, **U. Höfer**, *High-order harmonic generation with μJ laser pulses at high repetition rates*, *J. Phys. B-At. Mol. Opt.* **45**, 074020 (2012).
- 8) K. Kuroda, J. Reimann, J. Gütde, **U. Höfer**, *Generation of transient photocurrents in the topological surface state of Sb_2Te_3 by direct optical excitation with mid-infrared pulses*, *Phys. Rev. Lett.* **116**, 076801 (2016).
- 9) J. Reimann, S. Schlauderer, C. P. Schmid, F. Langer, S. Baiertl, K. A. Kokh, O. E. Tereshchenko, A. Kimura, C. Lange, J. Gütde, **U. Höfer**, R. Huber, *Subcycle observation of lightwave-driven Dirac currents in a topological surface band*, *Nature* **562**, 396 (2018).
- 10) G. Mette, A. Adamkiewicz, M. Reutzel, U. Koert, H. Dürr, **U. Höfer**, *Controlling an $\text{S}_{\text{N}}2$ reaction by electronic and vibrational excitation - tip-induced ether cleavage on Si(001)*, *Angew. Chemie Int. Ed.* **58**, 3417 (2019).

Patents

- 1) S. G. Barbee, T. F. Heinz, **U. Höfer**, L. Li, V. J. Silvestri, *Method and apparatus for real-time, in-situ endpoint detection and closed loop etch process control* (US-Patent No. 5,392,124 (1995)).