

# Curriculum Vitae



## Personal Data:

Name: Prof. Dr. Ulrich Höfer  
Born: 7 July 1957,  
Zusmarshausen/Augsburg, Germany  
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Expertise: Experimental physics, laser spectroscopy of surfaces and interfaces, ultrafast electron dynamics, semiconductor surfaces

## University Education:

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

## Professional Experience:

**Current Post:** Professor for Experimental Physics (Chair), Philipps-Universität Marburg, Germany  
1985-87 Manager Data Processing, Central-Molkerei Augsburg e.G.  
1987-89 Research Assistant, Physik-Department E20 (Prof. D. Menzel), TU München  
1990-91 Post-doc fellow, IBM T. J. Watson Research Center, Yorktown Heights, New York (USA), Department of Physical Sciences, Laser Science (Dr. T. F. Heinz)  
1992-99 Group Leader, Surface Dynamics, Laser Chemistry Department (Prof. K.-L. Kompa), Max-Planck-Institut für Quantenoptik (MPQ), Garching/München  
1994 Visiting Scientist, IBM T. J. Watson Research Center, Yorktown Heights, New York  
1996-99 Lecturer/docent, Physik-Department, TU München  
1998 Adjunct Professor, Institute for Quantum Electronics, TU Vienna, Austria  
1999 Research Fellow, Institute for Chemical Research, RIKEN, Japan  
1999-date Professor for Experimental Physics (Chair), Philipps-Universität Marburg

### Professional Experience (continued):

2003	Guest Professor, Columbia University, New York, USA
2003-07	Managing Director, Material Sciences Center, Philipps-Universität Marburg
2006	Guest Professor, I.S.I.R. (Sanken Institute), University of Osaka, Japan
2007-09	Dean of the Physics Department, Philipps-Universität Marburg
2008/09	Adjunct Professor, Yokohama National University, Japan
2009	Offer for a chair in Experimental Physics at the University of Würzburg (declined)
2013-21	Spokesman SFB 1083 "Structure and Dynamics of Internal Interfaces"
2014	Guest Professor, Dept. of Physics, Columbia University, New York
2014	Selection Committee Member for the Max Planck Research Award
2015	Guest Professor, Dept. of Chemistry, University of Osaka, Japan
2021-24	Vice-Chairman/Chairman of DPG Surface Science Division

### Awards:

1995	Arnold-Sommerfeld-Prize of the Bavarian Academy of Sciences and Humanities
2006	Fellow of the American Physical Society, USA
2011	Ikerbasque Research Professor, Basque Country, Spain
2015	Fellow of the Japan Society for the Promotion of Science, Japan

### Selected Publications:

- 1) **U. Höfer**, *Nonlinear optical investigations of the dynamics of hydrogen interaction with silicon surfaces*, Appl. Phys. A **63**, 533 (1996).
- 2) **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).
- 3) W. Berthold, **U. Höfer**, P. Feulner, E. V. Chulkov, V. M. Silkin, P. M. Echenique *Momentum-Resolved Lifetimes of Image-Potential States on Cu(100)*, Phys. Rev. Lett. **88**, 056805 (2002).
- 4) K. Stepán, J. Güdde, **U. Höfer**, *Time-resolved measurement of surface diffusion induced by femtosecond laser pulses*, Phys. Rev. Lett. **94**, 236103 (2005).
- 5) M. Dürr, **U. Höfer**, *Dissociative adsorption of molecular hydrogen on silicon surfaces*, Surf. Sci. Rep. **61**, 465 (2006).
- 6) J. Güdde, W. Berthold, **U. Höfer**, *Dynamics of Electronic Transfer Processes at Metal/Insulator Interfaces*, Chem. Rev. **106**, 4261 (2006).
- 7) J. Güdde, 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).
- 8) 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).

- 9) N. Armbrust, J. Gdde, P. Jakob, **U. Hfer**, *Time-resolved two-photon photoemission of unoccupied electronic states of periodically rippled graphene on Ru(0001)*, Phys. Rev. Lett. **108**, 056801 (2012).
- 10) C. M. Heyl, J. Gdde, A. L'Hullier, **U. Hfer**, *High-order harmonic generation with  $\mu$ J laser pulses at high repetition rates*, J. Phys. B-At. Mol. Opt. **45**, 074020 (2012).
- 11) M. Reutzler, N. Mnster, M. A. Lipponer, C. Lnger, **U. Hfer**, U. Koert, M. Drr, *Chemoselective reactivity of bifunctional cyclooctynes on Si(001)*, J. Phys. Chem. C **120**, 26284 (2016).
- 12) **U. Hfer** and P. M. Echenique, *Resolubility of image-potential resonances*, Surf. Sci. **643**, 203 (2016).
- 13) K. Kuroda, J. Reimann, J. Gdde, **U. Hfer**, *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).
- 14) R. Wallauer, N. Armbrust, J. Reimann, J. Gdde, **U. Hfer**, *Intervalley scattering in  $MoS_2$  imaged by two-photon photoemission with a high-harmonic probe*, Appl. Phys. Lett. **109**, 162102 (2016).
- 15) N. Armbrust, F. Schiller, J. Gdde, **U. Hfer**, *Model potential for the description of metal/organic interface states*, Sci. Rep. **7**, 46561 (2017).
- 16) J. Reimann, S. Schlauderer, C. P. Schmid, F. Langer, S. Baierl, K. A. Kokh, O. E. Tereshchenko, A. Kimura, C. Lange, J. Gdde, **U. Hfer**, R. Huber, *Subcycle observation of lightwave-driven Dirac currents in a topological surface band*, Nature **562**, 396 (2018).
- 17) G. Mette, A. Adamkiewicz, M. Reutzler, U. Koert, M. Drr, **U. Hfer**, *Controlling an  $S_N2$  reaction by electronic and vibrational excitation - tip-induced ether cleavage on Si(001)*, Angew. Chemie Int. Ed. **58**, 3417 (2019).
- 18) R. Wallauer, P. Marauhn, J. Reimann, S. Zoerb, F. Kraus, J. Gdde, M. Rohlfing, **U. Hfer**, *Momentum-resolved observation of ultrafast interlayer transfer in  $MoS_2$* , Phys. Rev. B **102**, 102, 125417 (2020) – editor's suggestion.
- 19) R. Wallauer, M. Raths, K. Stallberg, L. Mnster, D. Brandstetter, X. Yang, J. Gdde, P. Puschnig, S. Soubatch, C. Kumpf, F. C. Bocquet, F. S. Tautz, **U. Hfer**, *Tracing orbital images on ultrafast time scales*, Science **371**, 1056 (2021).
- 20) C. P. Schmid, L. Weigl, P. Grssing, V. Junk, C. Gorini, S. Schlauderer, S. Ito, M. Meierhofer, N. Hofmann, D. Afanasiev, J. Crewse, K. A. Kokh, O. E. Tereshchenko, J. Gdde, F. Evers, J. Wilhelm, K. Richter, **U. Hfer**, R. Huber, *Tuneable non-integer high-harmonic generation in a topological insulator*, Nature **593**, 385 (2021).
- 21) R. Wallauer, R. Perea-Causin, L. Mnster, S. Zajusch, S. Brehm, J. Gdde, K. Tanimura, K.-Q. Lin, R. Huber, E. Malic, U. Hfer, *Momentum-resolved observation of exciton formation dynamics in monolayer  $WS_2$* , Nano Lett. **21**, 5867 (2021).