

Prof. Dr. Thomas Baumert (born 1962, married, three children)

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Academic education and scientific degrees

1997 Habilitation in Physics at the University of Würzburg (with Gustav Gerber)
1988 – 1992 PhD in Physics at the University of Freiburg, (summa cum laude, with Gustav Gerber)
1988 Diploma in Physics at the University of Freiburg, (highest grade, with Gustav Gerber)

Professional background

2003 – Director of the Physics Institute at University of Kassel
2001 – 2003 Vice Dean- / Dean of Physics Department
1999 – Full Professor at the University of Kassel
1998 – 1999 Head of LIDAR group, Deutsches Zentrum für Luft und Raumfahrt, Oberpfaffenhofen
1992 – 1993 Postdoctoral fellow, California Institute of Technology, USA (with Ahmed Zewail)

Selected research topics and selected professional accomplishments

Femtosecond spectroscopy, femtosecond pulse shaping and ultrafast laser control with emphasis on quantum control, control of chemical reactions, chirality, material processing on nanometer scale, plasma spectroscopy with high temporal and spatial resolution and ultrafast electron diffraction

ResearcherID: D-3962-2009, 140 peer reviewed publications (h=42), 4 patents

2018 – Speaker SFB 1319 “Extreme Light for Sensing and Driving Molecular Chirality (ELCH)”
2015 Chair of GRC on "Quantum Control of Light and Matter"
2008 – 2012 Fachkollegiat DFG (AMOP)
2000 Founding Member of the “Center for Interdisciplinary Nanostructure, Science and Technology (CINSaT)” of the University of Kassel

Supervisory work

Since 1999 Responsibility for 20 bachelor students, 35 diploma / master students, 35 PhD students and 4 Habilitations

Honours, distinctions, scholarships, awards

2003 GInO Innovation Award
2000 Philip-Morris-Award
1997 – 1998 Heisenberg-Scholarship of DFG
1995 – 1997 Habilitation-Scholarship of DFG
1992 – 1993 Research-Scholarship of DFG
1992 Gödecke Award for best thesis of the year in the physics department

Ten most important papers in refereed journals (in reverse chronological order)

1. Winkler, T., Haahr-Lillevang, L., Sarpe, C., Zielinski, B., Götte, N., Senftleben, A., Balling, P. & Baumert, T. Laser amplification in excited dielectrics *Nature Physics* **14**, 74 – 79 (2018).
2. Gerbig, C., Senftleben, A., Morgenstern, S., Sarpe, C. & Baumert, T. Spatio-temporal resolution studies on a highly compact ultrafast electron diffractometer. *New J. Phys.* **17**, 43050 (2015).
3. Lux, C., Wollenhaupt, M., Bolze, T., Liang, Q., Köhler, J., Sarpe, C. & Baumert, T. Circular Dichroism in the Photoelectron Angular Distributions of Camphor and Fenchone from Multiphoton Ionization with Femtosecond Laser Pulses. *Angew. Chem. Int. Ed.* **51**, 5001–5005 (2012).
4. Englert, L., Rethfeld, B., Haag, L., Wollenhaupt, M., Sarpe-Tudoran, C. & Baumert, T. Control of ionization processes in high band gap materials via tailored femtosecond pulses. *Opt. Express* **15**, 17855–17862 (2007).
5. Wollenhaupt, M., Engel, V. & Baumert, T. Femtosecond Laser Photoelectron Spectroscopy on Atoms and Small Molecules: Prototype Studies in Quantum Control. *Annu. Rev. Phys. Chem.* **56**, 25–56 (2005).
6. Brixner, T., Krampert, G., Pfeifer, T., Selle, R., Gerber, G., Wollenhaupt, M., Graefe, O., Horn, C., Liese, D. & Baumert, T. Quantum control by ultrafast polarization shaping. *Phys. Rev. Lett.* **92**, 208301 (2004).
7. Assion, A., Wollenhaupt, M., Haag, L., Mayorov, F., Sarpe-Tudoran, C., Winter, M., Kutschera, U. & Baumert, T. Femtosecond laser-induced breakdown spectrometry for Ca_2^+ analysis of biological samples with high spatial resolution. *Appl. Phys. B* **77**, 391–397 (2003).
8. Wollenhaupt, M., Assion, A., Liese, D., Sarpe-Tudoran, C., Baumert, T., Zamith, S., Bouchene, M. A., Girard, B., Flettner, A., Weichmann, U. & Gerber, G. Interferences of Ultrashort Free Electron Wave Packets. *Phys. Rev. Lett.* **89**, 173001 (2002).
9. Assion, A., Baumert, T., Bergt, M., Brixner, T., Kiefer, B., Seyfried, V., Strehle, M. & Gerber, G. Control of chemical reactions by feedback-optimized phase-shaped femtosecond laser pulses. *Science* **282**, 919–922 (1998).
10. Assion, A., Geisler, M., Helbing, J., Seyfried, V. & Baumert, T. Femtosecond Pump- Probe Photoelectron Spectroscopy: Mapping of Vibrational Wave-Packet Motion. *Phys. Rev. A* **54**, 4605–4608 (1996).