

General Information

Name: [Prof. Dr. Martin Aeschlimann](#)
Date of Birth: 12.08.1957; male
Address: Department of Physics, TU Kaiserslautern
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Tel. +49 631/205 2322, <ma@physik.uni-kl.de>
Current Position: Professor (W3) in Experimental Physics
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Academic Education

Diploma: Physics (advisor: H.C. Siegmann) 1985
Studies: Physics, ETH Zürich 1980 – 1985

Scientific Exams

Habilitation: ETH Zürich, Technical Chemistry (mentor: R. Prins) 1997
Ph.D. Thesis: ETH Zürich (advisor: H.C. Siegmann) 1989

Scientific Career

Professor (C4/W3), TU Kaiserslautern 2000 –
Professor (C3), U Essen 1998 – 2000
Senior Research Associate (Habilitation), ETH Zürich 1993 – 1998
Postdoc, NIST Gaithersburg and U Rochester 1989 – 1993
Research Associate, ETH Zürich (advisor: H.C. Siegmann) 1985 – 1989

Functions

Chair, Transregional Collaborative Research Center (SFB/TRR) 173 “Spin+X” 2016 –
Head, Research Facility “Laboratory of Advanced Spin Engineering (LASE)” 2014 –
Scientific Director, Nano Structuring Center (NSC), TU Kaiserslautern 2008 –
Chair of the State Research Center “Optics and Material Sciences (OPTIMAS)” 2008 –
Chair, Section “Condensed Matter Physics” of the German Physical Society (DPG) 2015 – 2018
Member of the Editorial Board of the New Journal of Physics 2009 – 2016
Chair of the DFG Priority Program “Ultrafast Nanooptics (SPP 1391)” 2008 – 2015
Chair, Division “Surface Science” of the German Physical Society (DPG) 2008 – 2010
Member of the External Advisory Board, Stanford Linear Accelerator PULSE 2008 – 2010
Elected Council Member of the German Physical Society (DPG) 2006 – 2010

Research Areas

The research program is devoted to the investigation of ultrafast phenomena in solids, thin films and nanoparticles. This includes the combination of short pulsed laser systems with surface science technology in order to develop novel methods for measuring ultrafast relaxation processes in real time with high temporal and spatial resolution.

Selected publications

1. *Strong modification of the transport level alignment in organic materials after optical excitation*
B. Stadtmüller, S. Emmerich, D. Jungkenn, N. Haag, M. Rollinger, S. Eich, M. Maniraj, M. Aeschlimann, M. Cinchetti, and S. Mathias
Nature Communications **10**, 1470 (2019)
2. *Revealing the subfemtosecond dynamics of orbital angular momentum in nanoplasmonic vortices.*
G. Spektor, D. Kilbane, A. K. Mahro, B. Frank, S. Ristok, L. Gal, P. Kahl, D. Podbiel, S. Mathias, H. Giessen, F.-J. Meyer zu Heringdorf, M. Orenstein und M. Aeschlimann
Science 355, Nr. 6330, S. 1187–1191. (2017)
3. *Band structure evolution during the ultrafast ferromagnetic-paramagnetic phase transition in cobalt*
S. Eich, M. Plötzing, M. Rollinger, S. Emmerich, R. Adam, C. Chen, H. C. Kapteyn, M. M. Murnane, L. Plucinski, D. Steil, B. Stadtmüller, M. Cinchetti, M. Aeschlimann, C. M. Schneider and S. Mathias
Science Advances, Vol. 3, Nr. 3, S. e1602094 (2017)
4. *Control of Cooperativity through a Reversible Structural Phase Transition in MoMo-Methyl/Cu(111)*
J. Kollamana, Z. Wei, L. Lyu, M. Zimmer, F. Dietrich, T. Eul, J. Stöckl, M. Maniraj, S. Ponzoni, M. Cinchetti, B. Stadtmüller, M. Gerhards and M. Aeschlimann
Advanced Functional Materials, Vol. 115, S. 1703544 (2017)
5. *Dynamic spin filtering at the Co/Alq₃ interface mediated by weakly coupled second layer molecules*
Andrea Droghetti, Philip Thielen, Ivan Rungger, Norman Haag, Nicolas Großmann, Johannes Stöckl, Benjamin Stadtmüller, Martin Aeschlimann, Stefano Sanvito, and Mirko Cinchetti
Nature Communications 7, 12668 (2016)
6. *Modifying the Surface of a Rashba-Split Pb-Ag Alloy Using Tailored Metal-Organic Bonds.*
Benjamin Stadtmüller, Johannes Seidel, Norman Haag, Lisa Grad, Christian Tusche, Gerben van Straaten, Markus Franke, Jürgen Kirschner, Christian Kumpf, Mirko Cinchetti und Martin Aeschlimann
Physical Review Letters 117, 096805. (2016)
7. *Perfect absorption in nanotextured thin films via Anderson-localized photon modes*
M. Aeschlimann, T. Brixner, D. Differt, U. Heinzmann, M. Hensen, C. Kramer, F. Lükermann, P. Melchior, W. Pfeiffer, M. Piecuch, C. Schneider, H. Stiebig, C. Strüber und P. Thielen
Nature Photonics 9, 663-668 (2015)
8. *All-optical control of ferromagnetic thin films and nanostructures*
C.-H. Lambert, S. Mangin, B. S. D. Ch. S. Varaprasad, Y. K. Takahashi, M. Hehn, M. Cinchetti, G. Malinowski, K. Hono, Y. Fainman, M. Aeschlimann, E. E. Fullerton
Science 345 (6202), 1337 (2014)
9. *Engineered materials for all-optical helicity-dependent magnetic switching*
S. Mangin, M. Gottwald, C-H. Lambert, D. Steil, V. Uhlír, L. Pang, M. Hehn, S. Alebrand, M. Cinchetti, G. Malinowski, Y. Fainman, M. Aeschlimann and E. E. Fullerton
Nature Materials **13**, 286-292 (2014)
10. *Spin-dependent trapping of electrons at spinterfaces*
S. Steil, N. Großmann, M. Laux, A. Ruffing, D. Steil, M. Wiesenmayer, S. Mathias, O. L. A. Monti, M. Cinchetti, M. Aeschlimann
Nature Physics **9**, 242-247 (2013)