Univ.-Prof. Dr. Gerhard J. Schütz
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Personal Data

Date of Birth:	17.2.1969
Place of Birth:	Linz / Austria
Nationality:	Austrian

Research Interests

- Developing and applying single molecule spectroscopy and imaging methods for the *in vivo* analysis of plasma membrane proteins and lipids.
- Understanding the functional role of plasma membrane nanostructures
- Molecular mechanism of early T cell signaling

Scientific and Professional Background

1988-1995	Study of Technical Physics at the Johannes Kepler University Linz
1995	Master Degree “Studies of the dynamics of single membrane constituents using fluorescence microscopy”
1997	PhD with “Single Molecule Optical Microscopy: Applications to Biosystems”
1997-2001	Postdoctoral fellow at the Biophysics Institute, Johannes Kepler University Linz
2001-2004	University Assistant at the Biophysics Institute, Johannes Kepler University Linz
2004	Venia Docendi (Habilitation) in Biophysics, Johannes Kepler University Linz
2004-2011	Associate Professor at the Biophysics Institute, Johannes Kepler University Linz
since 2011	Full Professor at the Institute of Applied Physics, Vienna University of Technology

Honors

- Amersham Pharmacia Biotech Award, 2001
- Upper-Austrian Award for Young Scientists 2003
- START-Award 2004

Memberships

- Junge Kurie of the Austrian Academy of Sciences
- Austrian Society for Biomedical Engineering (ÖGBMT): board member
- Austrian Biophysical Society (ÖBG): vice president
- Austrian Physical Society (ÖPG)
- American Biophysical Society

Selected Research Projects

2012 - 2015	FWF	Subunit stoichiometry and supermolecular organization of transmembrane transporters (subproject of SFB35 "Transmembrane Transporters in Health and Disease")	220.590 €
2009 - 2012	ESF/FWF	Molecular level physiology and pathology of oxidized phospholipids – single molecule tracking of oxidized phospholipids in the live cell plasma membrane	230.296 €
2009 - 2012	ESF/FWF	Lipid-protein interactions in membrane organisation – Detecting rafts in the live cell plasma membrane: from resting state to signaling	224.217 €
2009 - 2012	GEN-AU program, FFG, Austria	Ultra-sensitive proteomics and genomics III: towards correlated analysis of structure, function and content of single cells (Coordinator)	800.000 / 375.835 € (total / subproject)
2004 - 2012	START award, FWF, Austria	Immunology at a Nanoscopic View: A Single-Molecule Approach	1.200.000 €
2002 - 2006	GEN-AU program, FFG, Austria	Ultra-sensitive proteomics and genomics I: towards correlated analysis of structure, function and content of single cells (Coordinator)	6.488.958 / 1.848.500 € (total / subproject)

Invited Lectures

Dr. Schütz presented his research in 137 invited talks at international conferences and seminars (listed are the five most important)

2002	46th Annual Meeting of the Biophysical Society, 23.-27.2.2002, San Francisco
2005	104. Bunsentagung, 5.-7.Mai 2005, Frankfurt am Main, Germany
2005	The 2nd Yamada Symposium on Key Natural Organic Molecules in Biological Systems, Awajy Yumebutai International Conference Center, Hyogo, Japan
2007	Conference on Methods and Applications in Fluorescence (MAF 10), Salzburg, Austria
2007	Boehringer Ingelheim Fonds International Titisee Conferences: Trends in Optical Microscopy
2011	8th EBSA European Biophysics Congress, Budapest, Hungary

Ad-Hoc Reviewer for international peer-reviewed journals (selection): Nat. Methods, Proc. Natl. Acad. Sci. USA, Nano Letters, EMBO J., J. Cell Biol.

Collaboration partners (selection):
Hannes Stockinger: Medical University of Vienna, Vienna, Austria
Mark M. Davis: Stanford University, Ca, USA
Peter Hinterdorfer: Johannes Kepler University Linz
Petra Schwille: Technical University Dresden, Germany
Laszlo Vigh: Institute of Biochemistry, Biological Research Center, Hungarian Academy of Sciences, Szeged, Hungary

Publications (5 most important are listed)
Dr. Schütz co-authored 70 research papers and 24 invited review or book articles

M. Brameshuber, J. Weghuber, V. Ruprecht, I. Gombos, I. Horváth, L. Vigh, P. Eckerstorfer, E. Kiss, H. Stockinger, G. J. Schütz
J. Biol. Chem. **285** (2010) 41765-41771
Imaging of mobile long-lived nanoplatforms in the live cell plasma membrane

J. B. Huppa, M. Axmann, M. A. Mörtelmaier, B. F. Lillemeier, E. W. Newell, M. Brameshuber, L. O. Klein, G. J. Schütz, M. M. Davis
Nature **463** (2010) 963-967.
TCR-peptide-MHC interactions in situ show accelerated kinetics and increased affinity

M. Schwarzenbacher, M. Kaltenbrunner, M. Brameshuber, C. Hesch, W. Paster, J. Weghuber, B. Heise, A. Sonnleitner, H. Stockinger, G. J. Schütz
Nat. Methods **5** (2008) 1053-1060.
Micropatterning for quantitative analysis of protein-protein interactions in living cells

Stefan Wieser, Manuel Moertelmaier, Elke Fürtbauer, Hannes Stockinger, Gerhard J. Schütz
Biophys. J. **92** (2007) 3719-3728.
(Un)confined Diffusion of CD59 in the Plasma Membrane determined by High-resolution Single Molecule Microscopy

J.Hesse, J.Jacak, M.Kasper, G.Regl, T.Eichberger, M.Winklmayr, F.Aberger, M.Sonnleitner, R.Schlapak, S.Howorka, L.Muresan, A.-M.Frischauf, G.J.Schütz
Genome Res. **16** (2006) 1041-1045.
RNA expression profiling at the single molecule level

Supervision of PhD students
Dr. Schütz has been supervising 16 PhD students (14 finished, 2 ongoing)