# CURRICULUM VITAE – ACADEMIC CAREER

## Personal Information

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| Name | Stefan Ludwig |
| Date / Place of Birth | January 17, 1970, Heidelberg |
| Citizenship | Germany |
| Marital Status | married, two children |
| Address | Paul-Drude-Institut für Festkörperelektronik |
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## Education

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| July 08 | 'Habilitation' at the University of Munich: *From Glasses to Coupled Quantum Dot Systems: Experiments on Interacting Tunneling Systems.* |
| Jul. 01 – Aug. 03 | postdoctoral fellowship with Prof. D. D. Osheroff, Stanford University |
| Aug. 00 – Jul. 01 | postdoctoral fellowship with Prof. S. Hunklinger, University of Heidelberg |
| July 00 | PhD ('magna cum laude'), University of Heidelberg |
| | PhD thesis (with Prof. C. Enss): *Low Temperature Properties of $OH^-$ or $OD^-$-doped Alkali Halogenide Crystals.* |
| January 97 | diploma degree ('sehr gut') at the University of Heidelberg |
| | diploma thesis (with Prof. S. Hunklinger): *High Frequency Dielectric Experiments on Quartz Glass and $(KBr)_{0,5}(RbBr)_{0,5}$ at Low Temperatures.* |
| Sep. 93 – Aug. 94 | exchange student at the University of Utah, Salt-Lake-City, USA |
| Oct. 89 – Sep. 90 | military service as medical orderly |
| Aug. 80 – May 89 | high school (final average grade / 'Abitur' 1.7) |

## Professional Experience

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| since March 2015 | senior scientist at the Paul-Drude-Institut, Berlin |
| Nov. 09 – June. 15 | 'akademischer Oberrat' at the University of Munich |
| Oct. 03 – Oct. 09 | 'Hochschulassistent' at the University of Munich |
| | W3 visiting professor at the University of Munich (10/08–09/09) |
| | W3 visiting professor at the University of Regensburg (04/08–07/08) |
| Aug. 01 – Aug. 03 | postdoctoral fellow at the Stanford University |
| Aug. 00 – Jun. 01 | postdoctoral fellow at the University of Heidelberg |
| Mar. 97 – Jul. 00 | research and teaching assistant at the University of Heidelberg |
| 1991 – 1996 | numerous part time jobs in industry and at universities |

## Other Professional Activities

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| 2014 – 2016 | founder member of the Munich Quantum Center (MQC) |
| Sept. 11 – Apr. 13 | member of the Priority Program SPP 1285: *Semiconductor Spintronics* |
| Jul. 07 – June 15 | member of the Excellence Cluster: *Nanosystems Initiative Munich (NIM)* (as a principal investigator) |
| Jan. 06 – Dez. 10 | co-investigator in the German-Israel Project Cooperation DIP: *Dynamics of Electrons and Collective Modes in Nanostructures* |
| since Oct. 03 | member of the Center for NanoScience (CeNS) |
| Oct. 13 – June 16 | member of the Collaborative Research Center SFB 631: *Solid State Based Quantum Information Processing* (as a principal investigator) |

## Awards and honours

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| 2013 | appointment as member of the Center for Advanced Studies (CAS$^{Y}$) |
| 2011 | *Heisenberg Scholarship* by the German Science Foundation (DFG) |
| 2007 / 2012 / 2013 | Center for NanoScience (CeNS) Publication Awards |
| 2001 | DFG Research Scholarship (postdoc at the Stanford University) |
| 1993 | exchange student scholarship by Baden Württemberg (Uni. of Utah) |

## Selected Publications

*Landau-Zener Interference at Bichromatic Driving*, F. Forster, M. Mühlbacher, R. Blattmann, D. Schuh, W. Wegscheider, S. Ludwig, and S. Kohler, Phys. Rev. B **92**, 245422, 1 – 12 (2015)
→ *featured as Editor's Suggestion*

*Characterization of Qubit Dephasing by Landau-Zener Interferometry*, F. Forster, G. Petersen, S. Manus, P. Hänggi, D. Schuh, W. Wegscheider, S. Kohler, and S. Ludwig, Phys. Rev. Lett. **112**, 116803, 1 – 5 (2014)

*The Microscopic Origin of the 0.7-Anomaly in Quantum Point Contacts*, F. Bauer, J. Heyder, E. Schubert, D. Borowsky, D. Taubert, B. Bruognolo, D. Schuh, W. Wegscheider, J. v. Delft, and S. Ludwig, Nature **501**, 73 – 78 (2013)
→ *highlighted in News and Views by A. Micolich: Nature Physics **9**, 530 (2013)*

*Large Nuclear Spin Polarization in Gate-Defined Quantum Dots using a Single-Domain Nanomagnet*, G. Petersen, E. A. Hoffmann, D. Schuh, W. Wegscheider, G. Giedke, and S. Ludwig, Phys. Rev. Lett. **110**, 177602, 1 – 5 (2013)

*Quantum Interference and Phonon-Mediated Back-Action in Lateral Quantum-Dot Circuits*, G. Granger, D. Taubert, C. E. Young, L. Gaudreau, A. Kam, S. A. Studenikin, P. Zawadzki, D. Harbusch, D. Schuh, W. Wegscheider, Z. R. Wasilewski, A. A. Clerk, S. Ludwig, and A. S. Sachrajda, Nature Physics **8**, 522 – 527 (2012)
→ *highlighted in News and Views by T. D. Ladd: Nature Physics **8**, 511 (2012)*

*Phonon-Mediated Non-Equilibrium Interaction between Nanoscale Devices*, G. Schinner, H. P. Tranitz, W. Wegscheider, J. P. Kotthaus, and S. Ludwig, Phys. Rev. Lett. **102**, 186801, 1 – 4 (2009)

*An Electrostatically Defined Serial Triple Quantum Dot Charged with Few Electrons*, D. Schröer, A. D. Greentree, L. Gaudreau, K. Eberl, L. C. L. Hollenberg, J. P. Kotthaus, and S. Ludwig, Phys. Rev. B **76**, 075306, 1 – 11 (2007)

*A Double-Dot Quantum Ratchet Driven by an Independently Biased Quantum Point Contact*, V. S. Khrapai, S. Ludwig, J. P. Kotthaus, H. P. Tranitz, and W. Wegscheider, Phys. Rev. Lett. **97**, 176803, 1 – 4 (2006)

*Field-Induced Structural Aging in Glasses at Ultra Low Temperatures*, S. Ludwig, and D. Osheroff, Phys. Rev. Lett. **91**, 105501, 1 – 4 (2003)

*Direct Coupling of Magnetic Fields to Tunneling Systems in Glasses*, S. Ludwig, C. Enss, P. Strehlow, and S. Hunklinger, Phys. Rev. Lett. **88**, 75501, 1 – 4 (2002)

## Selected Invited Talks

*Symmetry Games in Driven Quantum Dot Circuits*, International Symposium on Advanced Nanodevices and Nanotechnology (ISANN 2015), November 28 - Dececember 4, 2015, Waikoloa, Hawaii, USA

*0.7-Anomaly in Quantum Point Contacts: Correlations in 1D*, CeNS Workshop Venice 2014 "Walk and Talk at the Nanoscale", September 22 - 26, 2014, Venice, Italy

*Phonon Meets Electron: from Detector Backaction to Phonon Interference and Single Phonon Detection in Quantum Dot Circuits*, Physikalisches Kolloquium, January 20, 2014, Erlangen, Germany

*The Microscopic Origin of the 0.7-Anomaly in Quantum Point Contacts*, Gordon Godfrey Workshop on *Spins and Strong Electron Correlations*, November 25 – 29, 2013, Sydney, Australia

*The Quantum Dot Single-Phonon Detector*, Phononics 2013: International Conference on Phononic Crystals / Metamaterials, Phonon Transport and Optomechanics, June 2 – 7, 2013, Sharm El-Sheikh, Egypt

*Manipulation of Nuclear Spins in Quantum Dots using a Single Domain Nanomagnet*, Physikalisches Kolloquium, January 16th, 2012, Regensburg, Germany

*Interactions in Nonequilibrium Nanosystems – Indirect Back-Action & Electron Jet Pump*, Colloquium, Department of Physics, Lancaster University, Dezember 1st, 2010, Lancaster, Great Britain

*Indirect Back-Action in Quantum Dot Circuits*, 30th International Conference on the Physics of Semiconductors (ICPS), July 25th – 30th, 2010, Seoul, Korea

*Non-Equilibrium Interactions on the Nanoscale: An Electron-Jet Pump Illuminates Back-Action in Quantum Dot Circuits*, 37th International Symposium on Compound Semiconductors (ISCS), June 3, 2010, Takamatsu (Kagawa), Japan

*Phonon-Mediated vs. Coulombic Back-Action in Quantum Dot Circuits*, 16th International Winterschool Mauterndorf: New Developments in Solid State Physics, February 23, 2010, Mauterndorf, Austria

*Back Action of Biased Quantum Point Contacts*, Nanoelectronics Meeting of CIFAR (Canadian Institute of Advanced Research), May 11 – May 14, 2009, Whistler, Canada

*Quanteneffekte einzelner Elektronen in künstlichen Nanostrukturen*, GMM-Workshop (VDE/VDI-Gesellschaft für Mikroelektronik, Mikro- und Feinwerktechnik) „Devices nach CMOS", July 16 – 17, 2005, Infineon Technology AG, München, Germany

## Organization of Conferences

International Symposium on Compound Semiconductors
*Compound Semiconductor Week 2016*.
June 26 -– 30, 2016, Toyama, Japan.
Member of program committee.

Advanced Workshop on
*Landau-Zener Interferometry and Quantum Control in Condensed Matter*.
Sept. 29 – Oct. 03, 2014, ICTP – Eurasian Centre for Advanced Research in Izmir, Turkey.
Organizer, member of program committee.

International Symposium on Compound Semiconductors
*Compound Semiconductor Week 2013*.
May 19 – 23, 2013, Kobe, Japan.
Member of program committee.

Workshop on *Interferometry and Interactions in Non-equilibrium Meso- and Nano- Systems*.
April 08 – 12, 2013, ICTP Trieste, Italy.
Organizer, member of program committee.

NIM and CeNS Winter School 2011.
March 27 – April 2, 2011, St. Christoph, Austria.
Member of program committee and local organization.

Summer School and International Workshop on
*Solid State Based Quantum Information Processing: QIP 2009.*
June 28 – July 03, 2009, Herrsching, Germany.
Member of program committee.

CeNS Winter School 2007
*Nanosystems: From Quantum Devices to Biological Engines*
February 12 – 16, 2007, Mauterndorf, Austria.
Member of program committee and local organization.

International Workshop on
*Solid State Based Quantum Information Processing: QIP 2006*.
May 24 – 26, 2006, Herrsching, Germany.
Member of program committee.

International Workshop on
*Solid State Based Quantum Information Processing: QIP 2004*.
September 13 – 17, 2004, Herrsching, Germany.
Member of program committee and local organization.