

# Curriculum Vitae

Dr. Ilja Gerhardt  
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## Research Interests

### Single Emitter Spectroscopy & Nano-Optics

Single molecules, time correlated single photon detection, chemical sensing, imaging and microscopy, strong focussing, light in confined geometries, label-free detection of nano-particles, cold molecules and spectroscopy on semiconductors, atomic vapors, non-classical states of light, experimental quantum optics

## Scientific Career

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| since 2010 | Visiting scholar at the University of British Columbia (UBC, Vancouver, Canada), low-temperature chemistry group of Prof. Dr. Takamasa Momose  |
| since 2010 | Junior group leader at the Max Planck Institute for Solid State Research Stuttgart, group of Prof. Dr. Jörg Wrachtrup  |
| 2007-2009  | Research fellow at the National University of Singapore (NUS), department of physics and the “Centre for Quantum Technologies” (CQT), group Prof. Dr. Christian Kurtsiefer   |
| 2001-2006  | PhD in the group of Prof. Dr. Vahid Sandoghdar on “Scattering & Absorption of Light by a Single Molecule under a Subwavelength Aperture”   |
| 2001       | Started the PhD in the group of Prof. Dr. Jürgen Mlynek at the University of Konstanz. Moved with the subgroup of Prof. Dr. Vahid Sandoghdar to the ETH Zürich.  |
| 1999       | Scientific visit and cooperation with the LMU Munich to develop and optimize a light addressable potentiometric sensor (LAPS) with Prof. Dr. Gaub (bio physics)  |
| 1998       | Scientific visit at the Swiss Federal Institute of Technology (ETH Zürich): single molecule spectroscopy, confocal microscopy and scanning near-field microscopy with Bert Hecht in the group of Prof. Dr. Urs P. Wild |
| 1994–1999  | Studied chemistry at the Humboldt University of Berlin.<br>Diploma thesis in physical chemistry with Dr. Werner Moritz: “Localized Measurement on thin films, based on the photo-effect in MIS-devices”                |

## Computer

Programming	<b>Scientific Computing:</b> Various kinds of programming languages, various high-level languages (Perl, Shell, Java, Ansi-C) and low-level languages (x86er assembler, and disassembler) and database interfacing (JDBC, SQL), SVN
Applications	Mathematica, Labview, Autodesk Inventor, Blender 3D Modeling, Photoshop, QuarkXPress, Illustrator, Office applications, L <sup>A</sup> T <sub>E</sub> X, MySQL, Oracle, Gaussian'98, Hyperchem, PCB-design, Unix/Linux-Software
Further	Microcontroller Programming, Atmel AVR Series
2000	Founded a company for planning and installation of long-distance wlan connections, individual software solutions, webhosting, programming, located in Berlin
since 1996	Active member of Chaos Computer Club (CCC)
since 1994	Regular employment as system administrator, webdesigner and hardware specialist

## Additional Work

Electronics	in-depth knowledge of electronic circuitry, amplifier design, feed-back loops, hardware interfacing (e.g. with lab equipment)
2002–2005	Own radio show with Radio Lora in Zürich
2001–2005	Founded and headed the Institutsrat of the Laboratory of Physical Chemistry, represented the interests of about 100 employees to the head of the institute
1995–1998	Member of the student council, Humboldt University of Berlin
1993–1994	Qualification as metal worker and welder.
1992–2001	Wrote essays and reports for several German newspapers
1991–1997	Employment as offset-printer, in pre-press, type-setting and print finishing, silk screen printing experience

**Languages** German (native), English (fluent), French (moderate)

**Interests** cooking, cycling

**References** Jörg Wrachtrup, wrachtrup@physik.uni-stuttgart.de, +49-711-685-65278  
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Vahid Sandoghdar, vahid.sandoghdar@ethz.ch, +41-44-63-34621  
Werner Moritz, werner.moritz@rz.hu-berlin.de, +49-30-2093-5566

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