



**Faculty of Physics**

*Quantum Optics, Quantum  
Nanophysics and Quantum Information*

**Max F. Perutz Laboratories**

*Department of Structural  
and Computational Biology*

Campus Vienna Biocenter 5  
Austria - 1030 Vienna

## RESEARCH AND WORK EXPERIENCE

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03/2018 – now	Group leader at the Faculty of Physics and the Max F. Perutz Laboratories – <b>Univ. of Vienna</b>
01/2017 – 03/2018	Fellow of the Human Frontier Science Program – Lab. Kastler Brossel, <b>École normale supérieure</b> , Paris (Prof. S. Gigan)
04/2013 – 12/2016	Postdoc at <b>Stanford Univ.</b> (physics - Prof. M. Kasevich)
06/2008 – 01/2013	Ph.D. at the <b>Univ. of Vienna</b> (Prof. M. Arndt)
12/2006 – 06/2008	Master thesis at the <b>Univ. of Vienna</b> (Prof. M. Arndt) and the <b>Vienna Univ. of Technology</b> (Prof. J. Schmiedmayer).
04/2006 – 06/2006	Internship at the Laboratoire de Physique des Solides of the <b>Université Paul Sabatier in Toulouse</b> , France

## EDUCATION

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06/2008 – 01/2013	<b>Ph.D., Physics</b> , Univ. of Vienna, Austria.
10/2002 – 06/2008	<b>Bachelor &amp; Masters, Applied Physics</b> , Vienna Univ. of Technology, Austria

## RESEARCH INTERESTS

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- Phase-, Fluorescence-, and fluorescence lifetime microscopy
- Quantum/Cavity enhanced microscopy
- Low damage electron microscopy
- Ultrafast electron optics & optoelectronics
- Quantum physics at mesoscopic scales & in biological systems

## AWARDS AND HONORS

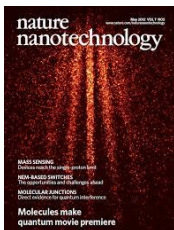
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- 2017 Stanford Arts and Science Prize
- Results of PhD thesis in physics textbook: *Experimentalphysik 3, Atome, Moleküle und Festkörper* by Demtröder, Wolfgang (ISBN 978-3-662-49094-5), p. 87
- *Poster prize* at the ICAP 2012, French Physical Society

- 2012 *micrograph award*, Australian Microscopy & Microanalysis Research Facility
- *ESG-Nano-Prize 2010*, Erwin Schrödinger Society for Nanosciences

## PUBLICATIONS / PRESENTATIONS / PATENTS

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- 19 publications in peer-reviewed journals. Selected publications:
  - T. Juffmann et al., Multi-pass transmission electron microscopy, *Scientific Reports* 7, 1699 (2017).
  - T. Juffmann et al., Multi-pass microscopy, *Nat. Comm.* 7, 12858 (2016).
  - T. Juffmann et al., Cavity enhanced RF photoelectron streaking, *Phys. Rev. Lett.* 115, 264803 (2015).
  - C. Brand et al., An atomically thin matter-wave beam splitter, *Nat. Nanotechnology* 10, 845–848 (2015).
  - T. Juffmann et al., Real-time single-molecule imaging of quantum interference, *Nat. Nanotechnology* 7, 297-300, (2012).
  - T. Juffmann, Wave and Particle in Molecular Interference Lithography, *Phys. Rev. Lett.* 103, 263601 (2009).
  - M. Arndt et al., Quantum physics meets biology, *HFSP J.* 3 386 (2009).
- > 40 invited and contributed talks at international conferences and seminars
- 1 U.S. patent, 2 patent applications

## THIRD PARTY FUNDING

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2017-2022	ERC Starting grant – MicroMOUPE (1.7M€, PI)
2017-2020	Gordon and Betty Moore Foundation – QEM II (6M\$, co-author)
2016-2018	Human Frontier Science Fellowship
2015/2016	Karl A. Van Bibber Fellowship

## ESTEEM FACTORS

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- Referee for: *Nat. Comm.*, *Phys. Rev. Lett.*, *ACS Photonics*, *Ultramicroscopy*, *Current Organic Chemistry*, *Measurement*
- Chair of organizing committee of workshop *Frontiers in Quantum Control of Free-Space Electrons*, San Francisco 2018
- Poster Juror and chairman at EIPBN 2017, Orland, Florida
- Organization of the 2016 Free Quantum Electron Optics workshop in Half Moon Bay, California
- Chairman of *Nanooptics 3*, a session at the 2016 spring meeting of the German physical society, Hannover, Germany
- Chairman (2015) and organizer (2014 and 2015) of focus sessions at the annual symposium of the Stanford Photonics Research Center.

## CURRENT AND PREVIOUS COOPERATION PARTNERS

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- QEM Collaboration: Kasevich (Stanford), Kruit (TU Delft), Berggren (MIT), Hommelhoff (FAU Erlangen)
- Dr. Ophus (National Center for Electron Microscopy, Berkeley)
- Prof. Glaeser (Berkeley)
- Prof. Gigan (ENS Paris)
- Prof. Rotter (TU Wien)
- Dr. Mankos (Electron Optica)
- Dr. Haslinger (Berkeley, TU Wien)
- Dr. Nimmrichter (CQT Singapore)

## OUTREACH

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- Art & Science, Photography at the speed of light ([www.seecphotography.com](http://www.seecphotography.com)); Exhibitions, events and talks at Aggregate Space Gallery, Berkeley Art Museum and Pacific Film Archive, Ars Electronica, Science @ Cal, SF Exploratorium, Univ. of San Francisco, Stanford University, Univ. of Vienna,...
- Youtube videos ([vid1](#), [vid2](#)) on experimental results with more than  $10^5$  views.
- Introductory lectures on 'Quantum Biology' and 'Matter Waves' for high school teachers.