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[Quantum Optics and Microscopy](#)



universität
wien

Faculty of Physics

Quantum Optics, Quantum
Nanophysics and Quantum Information

Max Perutz Labs

Department of Structural
and Computational Biology

RESEARCH AND WORK EXPERIENCE

03/2025 - now	Univ. Prof. for 'Quantum Optics and Microscopy' at the Faculty of Physics and the Max Perutz Labs – Univ. of Vienna
10/2021 – 03/2025	Associate Prof. at the Faculty of Physics and the Max Perutz Labs – Univ. of Vienna
10/2021	Co-founder of NDx Bio GmbH
03/2019 – 10/2021	Assistant Prof. at the Faculty of Physics and the Max Perutz Labs – Univ. of Vienna
03/2018 – 02/2019	Group leader 'Quantum Microscopy and Biophysics' – Univ. of Vienna
01/2017 – 03/2018	Fellow of the Human Frontier Science Program – Lab. Kastler Brossel, École normale supérieure , Paris (Prof. S. Gigan)
04/2013 – 12/2016	Postdoc at Stanford Univ. (physics - Prof. M. Kasevich)
06/2008 – 01/2013	Ph.D. at the Univ. of Vienna (Prof. M. Arndt)
12/2006 – 06/2008	Master thesis at the Univ. of Vienna (Prof. M. Arndt) and the Vienna Univ. of Technology (Prof. J. Schmiedmayer).
04/2006 – 06/2006	Internship at the Laboratoire de Physique des Solides of the Université Paul Sabatier in Toulouse , France

EDUCATION

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

RESEARCH INTERESTS

- Light and Electron microscopy
- Quantum metrology
- Biophysics

AWARDS AND HONORS

- 2025 EIC Pathfinder grant
- 2024 UNIVIE Teaching Award
- 2022 ERC PoC grant
- 2021 FET proactive grant
- 2017 ERC starting grant
- 2017 Stanford Arts and Science Prize
- Results of PhD thesis in physics textbooks:
 - *Experimentalphysik 3, Atome, Moleküle und Festkörper* by Demtröder,
 - *Quantum Mechanics for Engineers and Material Scientists*, Anantram and Shiri
 - Modern Quantum Theory, Bertlmann and Friis, and (4) on the cover of *Nature Nanotechnology*
- *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

> 40 publications in peer-reviewed journals (see <https://orcid.org/0000-0002-7098-5736>)

> 70 invited talks at international conferences and seminars

3 patents, 1 patent application

TEACHING

Courses taught at the University of Vienna:

- Fundamentals of Quantitative Biology
- Classical and Quantum Optics
- Advanced Atomic Physics
- The Physics of Matter Waves
- Introduction to 3D cryo-electron microscopy
- Various seminars on matter waves, microscopy, and quantum measurement

OUTREACH

- WIENERWISSEN: An art-science project realizing murals with scientific content, bringing Viennese science to the Viennese.
- SEEC Photography: An art-science project imaging the propagation of light across everyday objects; 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, Naturhistorisches Museum Wien, the European Capital of Culture 2024, the World Expo Osaka 2025,...
- Music video with the Austrian soul band '5/8erl in Ehr'n'
- Youtube videos on experimental results with millions of views.

