

Curriculum Vitae Stefan Scheel

Personal Data

Title	Prof. Dr. rer. nat.
First name	Stefan
Name	Scheel
Current position	Full Professor (W3)
Current institution	Institute for Physics Universität Rostock Albert-Einstein-Straße 23, D-18059 Rostock, Germany
Identifiers/ORCID	https://orcid.org/0000-0001-7011-2663

Qualifications and Career

Stages	Periods and Details
Degree programme	1990 – 1995, Diploma, Universität Leipzig, Germany
Doctorate	01.11.2001, Supervisor: Prof. Dr. Dirk-Gunnar Welsch, Subject: Quantized light in the presence of absorbing dielectric bodies, Universität Jena, Germany
Stages of academic/professional career	Since 04/2012 Full Professor and Chair for “Quantum Optics of Macroscopic Systems”, Institute for Physics, Universität Rostock, Germany 10/2010 – 03/2012 Reader in Quantum Optics (Imperial College London, UK) 10/2009 – 09/2010 Lecturer in Quantum Optics (Imperial College London, UK) 10/2004 – 09/2009 EPSRC Advanced Research Fellow (Imperial College London, UK) 01/2004 – 09/2004 Research Associate (Imperial College London, UK) 05/2002 – 12/2003 Feodor Lynen Award (Imperial College London, UK) 10/2001 – 04/2002 Research Associate (Imperial College London, UK)

Research Interests

- Field quantisation in the presence of absorbing media (macroscopic QED)
- Physics of dispersion forces
- Rydberg excitons in semiconductors
- Quantum information processing in integrated photonic waveguide systems
- Physics-inspired machine learning

Activities in the Research System

since 2023	Spokesperson of DFG International Research Training Group 2676 ,Imaging Quantum Systems (IQS): photons, molecules, materials‘
since 2023	Senator of the Universität Rostock
since 2021	Chairman of the senate commission for research, Universität Rostock
since 2019	Member of the Editorial Board ,Machine Learning: Science and Technology‘
since 2018	Member of the steering committee Priority Program DFG SPP 1929 ,Giant Interactions in Rydberg Systems (GiRyd)‘
2016 – 2021	Managing director, Institut für Physik, Universität Rostock
2014 – 2021	Member of the Faculty Council, Faculty for Mathematics and Natural Sciences,

Supervision of Researchers in Early Career Phases (last 5 years)

1. Dr. Sjard Ole Krüger (2020), now Software developer at Maurer Electronics GmbH
2. Dr. Johannes Block (2021), now Academic Quality Evaluation Analyst at University of Auckland, New Zealand
3. Dr. Helge Dobbertin (2021), now at d-fine Managementberatung GmbH
4. Dr. Lucas Teuber (2021), now scientist at Carl Zeiss Industrielle Messtechnik GmbH
5. Dr. Thomas Stielow (2022), now AI researcher at Planet AI
6. Dr. Julien Pinske (2023), now Feodor-Lynen Fellow at Niels Bohr Institute Copenhagen, Denmark

Important publications in refereed journals (total 7299 citations, h-factor 45)

1. J. Eisert, S. Scheel, and M.B. Plenio, *Distilling Gaussian states with Gaussian operations is impossible*, Phys. Rev. Lett. **89**, 137903 (2002) (701 citations).
2. S. Scheel and S.Y. Buhmann, *Macroscopic QED – concepts and applications*, Acta Phys. Slov. **58**, 675–810 (2008) (449 citations).
3. T. Kazimierczuk, D. Fröhlich, S. Scheel, H. Stolz, and M. Bayer, *Giant Rydberg excitons in the copper oxide Cu_2O* , Nature **514**, 343 (2014) (429 citations).
4. D.E. Browne, J. Eisert, S. Scheel, and M.B. Plenio, *Driving non-Gaussian to Gaussian states with linear optics*, Phys. Rev. A **67**, 062320 (2003) (265 citations).
5. S. Scheel, L. Knöll, and D.G. Welsch, *Spontaneous decay of an excited atom in an absorbing dielectric*, Phys. Rev. A **60**, 4094 (1999) (247 citations).
6. H.T. Dung, S.Y. Buhmann, L. Knöll, D.G. Welsch, S. Scheel, and J. Kästel, *Electromagnetic-field quantization and spontaneous decay in left-handed media*, Phys. Rev. A **68**, 043816 (2003) (213 citations).
7. F. U. J. Klauck, L. Teuber, M. Ornigotti, M. Heinrich, S. Scheel, and A. Szameit, *Observation of PT-symmetric quantum interference*, Nature Photonics **13**, 883 (2019) (151 citations).
8. V. Neef, J. Pinske, F. U. J. Klauck, L. Teuber, M. Kremer, M. Ehrhardt, M. Heinrich, S. Scheel, and A. Szameit, *Three-dimensional non-Abelian Quantum Holonomy*, Nature Phys. **19**, 30 (2023), doi: 10.1038/s41567-022-01807-5 (11 citations).
9. J. Heckötter, V. Walther, S. Scheel, M. Bayer, T. Pohl, and M. Aßmann, *Asymmetric Rydberg blockade of giant excitons in Cuprous Oxide*, Nature Commun. **12**, 3556 (2021) (30 citations).
10. T. Stielow, R. Schmidt, C. Peltz, T. Fennel, and S. Scheel, *Fast reconstruction of single-shot wide-angle diffraction images through deep learning*, Mach. Learn.: Sci. Technol. **1**, 045007 (2020) (8 citations).

Patent applications

1. A. Szameit, S. Scheel, V. Neef, J. Pinske, M. Heinrich, PCT/EP2024/062076 (2024).

Academic Distinctions

- 2004 – 2009 EPSRC Advanced Research Fellowship
2002 – 2003 Feodor Lynen Award of the Alexander von Humboldt Foundation
2001 Faculty award of the Friedrich-Schiller-Universität Jena for best Dissertation