

Philip Walther (*12-May-1978 in Vienna, Austria)

Professor of Physics, Faculty of Physics, University of Vienna, Austria,
Research Platform Testing quantum and gravity interface with single photons (TURIS), and
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Focus of Research

Photonic quantum computation and quantum simulation;

Quantum-enhanced secure computing;

Development of scalable quantum photonic technology;

Experimental investigation of the interface between quantum physics and gravity

Education

2012 Habilitation in Quantum Optics, Faculty of Physics, University of Vienna, Austria

2005 PhD (Dr. rer. nat.) in Physics; University of Vienna, Austria (with A. Zeilinger)

2002 Diploma (Dipl.-Ing.) in Chemistry, Vienna University of Technology, Austria (with K. Schwarz)

Current Positions

01/2017 – Speaker of Research Platform TURIS, Faculty of Physics, University of Vienna

10/2015 – Professor of Physics, Faculty of Physics, University of Vienna

07/2013 – Speaker of the Quantum Optics, Quantum Nanophysics, Quantum Information Group (7 workgroups, 100 researcher, 10 admins), Faculty of Physics, University of Vienna

Career History

2014 – 2018 Vice-Dean of the Faculty of Physics, University of Vienna

2013 – 2015 Associate Professor (tenured), Faculty of Physics, University of Vienna

2011 – 2012 Assistant Professor (tenure-track), Faculty of Physics, University of Vienna

2008 – 2011 Assistant Professor (Univ.-Ass.) Faculty of Physics, University of Vienna

2005 – 2008 Postdoctoral Researcher, Department of Physics, Harvard University, USA (with M. Lukin)

Honors and Awards

2014 Recognition Award for Science 2014 by Lower State Austria

2014 Visiting Professor Fellowship by the Brazilian Federal Government

2011 Vienna Funding Award in Science (Förderungspreis der Stadt Wien)

2011 START Prize, Austrian Ministry of Science and Education (BMWF)

- 2009 Fresnel Prize, European Physical Society (EPS)
- 2006 Prize for outstanding academic performance, University of Vienna
- 2005 Loschmidt Prize, Chemical-Physical Society of Vienna

Memberships

- 2015 American Physical Society, Fellow
- 2014 Austrian Academy of Sciences - "Junge Akademie" (Young Academy), Member
- 2012 The Global Young Academy, Member
- 2007 – 2012 The German Young Academy at the Berlin-Brandenburg Academy of Sciences and the German Academy of Natural Scientists Leopoldina, Alumni Member

Editorial Boards

- 2016 Journal of Optics, Guest Editor
- 2014 – Nature Publishing Group “Quantum Information”, Associate Editor
- 2014 – 2015 Nature Publishing Group “Scientific Reports”, Associate Editor

Institutional Responsibilities

- 2017 – Speaker of Research Platform TURIS, Faculty of Physics, University of Vienna
- 2014 – Vice-Dean of the Faculty of Physics, University of Vienna
- 2013 – Head of the Quantum Optics, Quantum Nanophysics, Quantum Information Group
Faculty of Physics, University of Vienna
- 2012 – Member of the Vienna Center for Quantum Science and Technology (VCQ)
- 2012 – Member of the Committee for the Vienna Doctoral Training Center on Complex Quantum Systems (CoQuS), Faculty of Physics, University of Vienna

Commissions of Trust

- 2018 Member of the Review Committee for the Canadian Institute for Advanced Research (CIFAR), Canada
- 2018 Member of the Conference program committee at the QCMC 2018 conference at the Louisiana State University, USA
- 2018 Member of the program committee at the CEWQO 2018 conference at the University of Balearic Islands, Spain
- 2016 – 2018 Member of the Conference sub-committee, Fundamental Science 2: Quantum Science, Engineering, and Technology, at the CLEO 2017 and CLEO 2018 conference in Gaithersburg, USA
- 2018 – 2022 Best Paper Award Committee member at the Austrian Academy of Sciences
- 2014 Member of the Laudimaxima Prize Committee, University of Vienna, Austria
- 2013 Member of the EPS-Thesis Award and Fresnel Prize Committee, European Physical Society

2009 – 2010 Executive Board Member of The German Young Academy at the Berlin-Brandenburg Academy of Sciences and the German Academy of Natural Scientists Leopoldina

Reviewer for Foundation for Polish Science, the Qatar National Research Fund, the Swiss National Science Foundation, the European Commission, the German Israeli Foundation for Scientific Research and Development, the John Templeton Foundation, The German Humboldt Foundation, the Slovak Academy of Sciences

Reviewer for Science, Nature, Nature Physics, Nature Photon., Nature Commun., Sci. Rep., Proc. Natl. Acad. Sci. USA., Appl. Phys. Lett, Phys. Rev. Lett., Phys. Rev. A, New. J. Phys, J. Opt. Soc. Am. B, Appl. Phys B., Found. Phys, Quant. Inf. Proc.

Other Activities

2017 Co-Founder of the research platform TURIS

Major Collaborations

Alan ASPURU-GUZIK (Harvard University, USA) • *Darrick CHANG* (Institute of Photonic Sciences, Spain) • *Dirk ENGLUND* (Massachusetts Institute of Technology, USA) • *Joseph FITZSIMONS* (Singapore University of Technology & Design, Singapore) • *Elham KASHEFI* (University of Edinburgh, UK) • *Frank KOPPENS* (Institute of Photonic Sciences, Spain) • *Daniel LIDAR* (University of Southern California, USA) • *Nergis MAVALVALA* (Massachusetts Institute of Technology, USA) • *Barry SANDERS* (Calgary, Canada) • *Paulo Henrique SOUTO RIBEIRO* (Federal University of Santa Catarina, Brazil) • *Alexander SZAMEIT* (University Rostock, Germany) • *Xiang ZHANG* (University of California, USA)

Patents

2016 Narrow-band Multi-photon Source for Quantum Information Applications

2016 Deterministic Quantum Logic Gates Based on Nanostructured Graphene Waveguides

2015 A method of probabilistic one time programs with information theoretic security

Publications, Patents and Grants

More than 65 publications (18 in Science and Nature publishing group magazines), and 4 patent applications. The current h-index is 25 with more than 5.500 citations. There have been more than 100 invitations to international conferences, workshops, colloquia and advanced graduate schools with more than 10 public talks. Most of the research is covered by external funding sources, thus the amount of raised third-party funding is more than 6.5 million Euros during the last six years.