

# Curriculum Vitae

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Alexander Lvovsky

## Personal data

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**Citizenship** Canada, Russian Federation, United States of America  
**Languages** English, Russian (native), German (Oberstufe)  
**Birth date** September 15, 1973

## Professional experience

**09/2018–present** Professor, Department of Physics, University of Oxford.  
*Leading a wide-profile research program in quantum optics and quantum machine learning.*

**01/2013–present** Research group leader (part-time), Russian Quantum Center  
*Co-championed the creation of an international research institution of a new kind in the Russian Federation. Demonstrated a method for distilling continuous-variable entanglement of light after arbitrary loss. Implemented a method for raising the amplitude of an optical “Schrödinger cat” state. Introduced the paradigm of quantum-secure blockchain.*

**07/2004–09/2018** Professor, Department of Physics and Astronomy, University of Calgary.  
*Implemented quantum memory for squeezed light. Developed a method for characterizing quantum-optical processes by measuring their effect on coherent states. Developed engineering of arbitrary single-mode quantum optical states up to the two-photon level. Observed a micro-macro entangled superposition of light states.*

**09/1999–07/2004** Emmy Noether research group leader (after 01/2002) and Alexander von Humboldt postdoctoral fellow (until 12/2001), Fachbereich Physik, Universität Konstanz, Germany.  
*Pioneered hybrid discrete- and continuous-variable protocols in quantum optics*

**09/1998–09/1999** Postdoctoral fellow, Department of Physics, University of California, Berkeley.  
*Studied structures of surfaces and interfaces by means of surface nonlinear spectroscopy. Developed theoretical understanding and experimental techniques for measuring the isotropic bulk contribution to the surface signal.*

## Education

**10/1998** Ph. D. in Physics, Columbia University, New York City. Supervisor: S. R. Hartmann.  
*Discovered and investigated the phenomena of omnidirectional superfluorescence and superfluorescent photon echo.*

**10/1996** M. A. and M. Phil. in Physics, Columbia University, New York City.

**06/1993** B. S. in Physics, Moscow Institute of Physics and Technology.

**06/1989** Graduated from School №57, Moscow.

## Awards

<b>2015</b>	New Journal of Physics, Outstanding referee commendation
<b>2010</b>	International Quantum Communication Award
<b>2006</b>	Alberta Ingenuity New Faculty Award
<b>2005</b>	Commendation letter from the Prime Minister of Canada
<b>2005</b>	Tier II Canada Research Chair
<b>2002</b>	Emmy Noether research award of the German Science Foundation (DFG)
<b>1999</b>	Alexander von Humboldt postdoctoral fellowship
<b>1993</b>	Faculty fellowship, Graduate school of Arts and Sciences, Columbia University
<b>1988</b>	Third prize, USSR Physics Olympiad

## Professional associations and achievements

**Fellow**, The Optical Society.

**Lifetime member**, American Physical Society.

**Fellow**, Canadian Institute for Advanced Research (Quantum Information Processing Program).

Graduated 6 postdoctoral fellows, 6 PhD and 18 Master students, six of which are presently in faculty positions across the globe and three more are in leadership research positions in industry and national laboratories.

Research featured by CBC, Daily Mail, MIT Technology Review, NBC, New Scientist, TASS, Wired.

Peer-reviewed journal publications: about 80

Citations: about 7000 (Google Scholar).

Hirsch index: 44 (Google Scholar).

Erdős number: 3

Total external funding secured over past ten years: over \$3 Million.

## Professional service

**International Advisory Board Member**, *Journal of Physics B: Atomic, Molecular and Optical Physics* (2015-2017)

**Deputy Editor**, *Optics Express*

**Scientific Committee Member**, *Russian Quantum Center*

**Member**, NSERC Strategic Partnership Grants, Information and Communications Technologies Panel (2016-2018)

**Guest Editor**, *Journal of Physics B, Special issue on the 20th anniversary of quantum state engineering* (28 May 2013)

**Referee** for about 20 international research journals including *Science* and *Nature*.

**Reviewer** for multiple funding organizations, including national basic research funding agencies of *Canada, Chile, Czech Republic, France, Germany, Russia, South Africa, and USA*.

**Advisor**, *University of Calgary SPIE Student Chapter*

## Conference organization (highlights)

**Program Committee Chair**, International Conferences on Quantum Technologies (July 2017)

**Deputy Chair and Principal Organizer**, 21st International Laser Physics Workshop (July 2012).

**Principal Organizer**, Ninth International Conference on Quantum Communication, Measurement and Computing (August 2008).

**Subcommittee Chair**, Quantum Optics of Atoms, Molecules and Solids, CLEO QELS 2013.

**Program committee member**, multiple international quantum optics and quantum information conferences