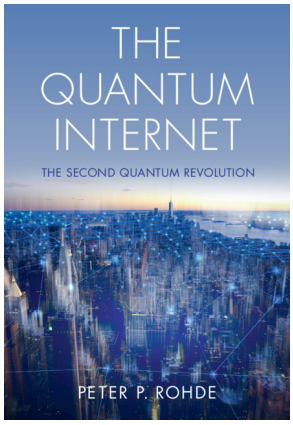
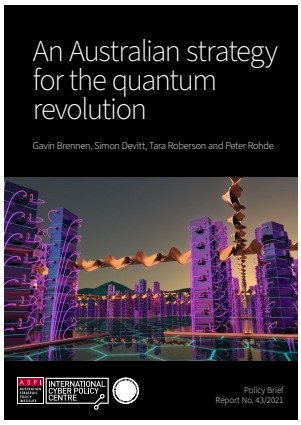
Dr. Peter P. Rohde





CONTACT DETAILS

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MISSION STATEMENT

The biological evolution of the human race is reaching a plateau. The only mechanism for us to advance further is via technology. The 20th century was that of the transistor, gifting us unprecedented progress as a species, on an exponential trajectory. However, that trajectory is rapidly approaching saturation. The 21st century will usher in entirely new technologies, far beyond just incremental developments in our current ones. Quantum technology will be one of them, transforming the world as profoundly as the transistor did. My mission is to contribute to the realisation of this, propelling the human race into the future, benefiting all of humanity, blind to demographics and national borders.

EXECUTIVE SUMMARY

- ARC Future Fellow (2017-2020)
- Lead author & editor of the book *"The Quantum Internet: The Second Quantum Revolution"*, Cambridge University Press (2021)
- Speaker at TEDxNewtown 2019 – *"Are quantum computers the path to world peace?"*
- 57 publications in international peer-reviewed journals (including 2 in *Science*, 5 in *Physical Review Letters*, 1 in *Optica*), 1 in *Optics Express* (editor's pick), 2 book chapters, 10 popular articles
- 2 articles in The Conversation ($\sim 5,000$ reads)
- $> 2,400$ citations, H-index 28, i10-index 49 (via Google Scholar)
- Developer of *MoodSnap*, an open-source mood diary app with analytics, designed with features for people with mood disorders in mind (`www.moodsnap.app`)
- Senior Lecturer in Centre for Quantum Software & Information, University of Technology Sydney (UTS:Q|SI⟩)
- Recipient of United States National Science Foundation (NSF) grant
- PhD in theoretical physics (University of Queensland, Australia)
- Bachelor of Computer Systems Engineering (First Class Honours, GPA 6.6 of 7, University of Queensland, Australia)
- Fluent English & German
- Main academic contributions: the quantum internet, quantum economics & quantum politics, spectral structure of photons, mode-matching effects, cluster state quantum computing, quantum algorithms, quantum metrology, quantum walks & boson-sampling, encrypted quantum computation
- Previous employers: University of Technology Sydney, Oxford University, Max-Planck Institute,

University of Queensland, University of Paderborn, Macquarie University, Centre for Quantum Computation & Communication Technology, Centre for Engineered Quantum Systems, Centre for Quantum Computation & Intelligent Systems, Centre for Quantum Software & Information, Institute for Molecular Bioscience, Andrew Corp.

- ◇ Invited speaker at major international conferences
- ◇ Extensive conference organising experience
- ◇ Teaching experience across many disciplines
- ◇ Extensive community & charity work
- ◇ Mountaineer, paraglider, rock climber, freediver, marathon runner, percussionist, DJ, composer, charity worker & stand-up comedian, Armidale Young Citizen of the Year
- ◇ Expelled from pre-school

Education

University of Queensland, Brisbane, Australia (2004-2007)

- ◇ **PhD in Theoretical Physics** (supervisor Prof. Timothy Ralph)
- ◇ Conferral date: April 10, 2008
- ◇ University of Queensland Postgraduate Research Scholarship
- ◇ Research topics: quantum computation, quantum optics & quantum information theory
- ◇ 3 months on exchange at the Max-Planck Institute for the Science of Light, Germany (Prof. Christine Silberhorn)
- ◇ Visits to Ultrafast Group at Oxford University, UK (Prof. Ian Walmsley), National Institute of Informatics, Japan (Prof. Kae Nemoto), Hewlett-Packard Labs, UK (Dr. William Munro)
- ◇ Organising committee of departmental Colloquia

University of Queensland, Brisbane, Australia (2000-2003)

- ◇ **Bachelor of Computer Systems Engineering**
- ◇ **First Class Honours**
- ◇ Grade Point Average: 6.6 of 7 (7 = High Distinction, 6 = Distinction)
- ◇ Thesis topic: linear optics quantum computing (supervisor Prof. Timothy Ralph)
- ◇ Specializations: digital system design, computer architecture, signal & image processing, embedded systems, VLSI device physics & technology, semiconductor devices, operating systems, computer networks, electronics, modern physics & mathematics
- ◇ Dean's Commendations for High Achievement (semesters I-IV,VI-VIII)

Montessori Pre-school, Armidale, Australia (1985): Expelled

Employment history

ARC Future Fellow, University of Technology Sydney, Australia, Centre for Quantum Software & Information (UTS:Q|SI⟩) (2017-2020)

- ◇ Title: *Secure quantum computing in a distributed world*
- ◇ Total grant value: AU$1,024,302 (combined ARC & UTS contributions)

Senior Lecturer (Research Intensive), University of Technology Sydney, Australia, Centre for Quantum Software & Information (UTS:Q|SI⟩) (September 2016 - continuing)

- ◇ Quantum optics, quantum computation, quantum information theory, quantum metrology, quantum algorithms & boson-sampling

Lecturer (Research Intensive), University of Technology Sydney, Australia, Centre for Quantum Computation & Intelligent Systems (QCIS), (January 2016 - September 2016)

- ◇ Quantum optics, quantum computation, quantum information theory, quantum metrology, quantum algorithms & boson-sampling

Postdoctoral Research Fellow, University of Technology Sydney, Australia (Centre for Quantum Computation & Intelligent Systems) (January 2015 - December 2015)

- ◇ Quantum optics, quantum computation, quantum information theory, quantum metrology, quantum algorithms & boson-sampling
- ◇ Position funded by Lockheed-Martin Corp.
- ◇ Academic visit to University of Maryland (USA)

Postdoctoral Research Fellow, Macquarie University, Australia (Centre of Excellence for Engineered Quantum Systems) (July 2011 - December 2014)

- ◇ Quantum optics, quantum computation, quantum information theory, quantum communication, boson-sampling, quantum walks, quantum algorithms & quantum metrology
- ◇ Tutoring undergraduate physics
- ◇ Departmental postdoctoral representative
- ◇ Organising committee of departmental Colloquia
- ◇ Physics & Astronomy Open Night volunteer
- ◇ Academic visits to NTT Labs (Japan), National Institute of Informatics (Japan), University of Gdansk (Poland), Freie Universität Berlin (Germany), Louisiana State University (United States)

Postdoctoral Research Fellow, University of Paderborn, Germany (July 2011 - January 2012)
- ◇ Quantum walks, quantum optics, quantum computation & quantum information theory

Postdoctoral Research Fellow, University of Queensland, Australia (Centre of Excellence for Quantum Computation & Communication Technology) (September 2010 - June 2011)
- ◇ Quantum optics, quantum computation, quantum information theory & quantum walks

Postdoctoral Research Fellow, Max-Planck Institute for the Science of Light, Germany (February 2010 - August 2010)
- ◇ Quantum optics, quantum computation, quantum information theory & quantum walks

Bioinformatician, Institute for Molecular Biosciences, University of Queensland, Australia (June 2009 - February 2010)
- ◇ Genetic sequencing and mapping of cancer genomes & programming

Verification Engineer, Andrew Corp., Australia (October 2008 - March 2009)
- ◇ Verification of software for mobile positioning systems

Postdoctoral Research Fellow, University of Oxford, UK (July 2007 - July 2008)
- ◇ Quantum computation & quantum information theory

Associate positions

Associate Investigator, ARC Centre of Excellence for Engineered Quantum Systems (EQUS) (2021 - present)

Associate Member, Hearne Institute for Theoretical Physics, Louisiana State University, United States (2015 - present)

Grants received

1. Australian Research Council (ARC) Future Fellowship, *Secure quantum computing in a distributed world*, AU$1,024,302 (combined ARC & UTS contributions)
2. United States National Science Foundation (NSF), *The rise of the boson-sampling quantum computer and the renaissance of the linear optics quantum interferometer*, Jonathan P. Dowling & Peter P. Rohde, US$9,999

Advisory roles

1. Entropica Labs (www.entropicalabs.com), Scientific Advisor (2018 - ongoing)

Teaching experience

1. Guest lecturer (optical quantum computing), University of Technology Sydney, Australia (2019-2020)
2. Mathematica workshop (Masters level), Macquarie University, Australia (2014)
3. Tutor (undergraduate physics), Macquarie University, Australia (2013)
4. Guest lecturer (post-graduate quantum optics), University of Paderborn, Germany (2011)
5. Tutor (undergraduate physics & materials engineering), University of Queensland, Australia (2004-2006)
6. Tutor (undergraduate physics, mathematics, software engineering & electrical engineering), Emmanuel College, University of Queensland, Australia (2001-2002, 2006)

Research interests

◇ Quantum computing; quantum information theory; linear optics quantum computing (LOQC); quantum optics; architectures for quantum computing; cluster state quantum computing; quantum cryptography; encrypted quantum computation; the quantum internet; quantum satellite technology; quantum communication; quantum algorithms; quantum error correction (QEC); boson-sampling; intermediate models for quantum computation; quantum random walks; spectral structure of photons; photo-detection theory; quantum metrology; quantum complexity theory; quantum economics; quantum politics.

Conference organising experience

1. Quantum Resource Estimation (QRE2022), New York, USA (technical program committee) (2022)
2. Pakistan International Conference on Quantum Information & Computation (PICQIC'21), Islamabad, Pakistan (co-organiser) (2021)
3. Quantum Frontiers & Fundamentals (QFF'2020), Raman Research Institute, Bangalore, India (program committee) (2020)
4. Conference on the Theory of Quantum Computation, Communication & Cryptography (TQC'18), Sydney, Australia (local organising committee) (2018)
5. Quantum Information Processing (QIP'15) conference, Sydney, Australia (local organising committee) (2014-2015) — *QIP is the world's leading conference in the quantum information sciences. This conference attracted approximately 300 international delegates.*
6. *Dynamical Probability: Simulations & Computing*, International Conference on Mathematical Modelling in Physical Sciences, Madrid, Spain (editorial committee) (2014)
7. Physics & Astronomy Colloquium seminar series, Macquarie University, Sydney, Australia (organiser)
8. First Australian Quantum Walkshop, Sydney, Australia (lead organiser) (2012) — *This was the first Australian workshop dedicated to the field of quantum walks, attracting over 40 delegates from across Australia.*
9. *BrisScience* public science seminar series, Brisbane, Australia (organising committee)
10. Quantum Information Processing (QIP'07) conference, Brisbane, Australia (local organising committee) (2007) — *This conference attracted approximately 250 international delegates.*
11. Mathematical Aspects of Quantum Information Science (MAQIS) workshop, University of Queensland, Brisbane, Australia (co-organiser) (2005)
12. Physics Colloquium seminar series, University of Queensland, Brisbane, Australia (lead organiser)

In the media

1. *Quantum computing startup raises $215 million for faster device*, Bloomberg Businessweek, by Ashlee Vance, author of the biography of Elon Musk (April 6, 2020)
2. *Science at the Local looks at biological markers of trauma*, Blue Mountains Gazette (November 13, 2019)
3. *Sydney conferences seal city's global quantum computing reputation*, Computer World (July 20, 2018)
4. *A small-scale demonstration shows how quantum computing could revolutionize data analysis*, MIT Technology Review (January 31, 2018)
5. *Virtual interferometers may overcome scale issues*, New Electronics (April 5, 2017)
6. *'Virtual' interferometers may overcome scale issues for optical quantum computers*, Phys.org (April 3, 2017)
7. *'Virtual' interferometers may overcome scale issues for optical quantum computers*, EurekAlert (April 3, 2017)
8. *'Virtual' interferometers may overcome scale issues for optical quantum computers*, Scimex (April 3, 2017)
9. *Think: Digital Futures – A quantum computer does what?*, Radio 2ser FM107.3 (April 10, 2016)
10. *Getting the measure of matter*, Sydney Morning Herald (June 16, 2015)

Educational videos

1. Introduction to Mathematica ($\sim 45,000$ views) [YouTube]
2. Introduction to boson-sampling ($\sim 5,500$ views) [YouTube]
3. The quantum internet: technology, economics & politics (> 200 views) [YouTube]

Radio & podcasts

1. (host) Terminally Quantum, The Quantum Terminal podcast series (2022) [Spotify, Apple Podcasts]
2. Mint & Burn, *Blockchain meets quantum computing*, the RMIT Blockchain Innovation Hub podcast series (2022) [Spotify].
3. Talk of Today, *The Quantum Internet* (2021) [YouTube, Spotify]
4. meQuanics, *Optical quantum computing, the quantum internet, geo-strategic quantum politics, and the upcoming book "The Quantum Internet"* (2019) [Spotify]
5. Science @ The Local podcast (2018) [SoundCloud]
6. Think: Digital Futures, *A quantum computer does what?*, 2ser FM107.3, Sydney, Australia, radio & podcast interview (2016) [iTunes]

Professional Photography

1. *Italy's Iron Way: When Via Ferrata Routes Aren't Quite as Straight Forward as Expected*, We Are Explorers (October, 2022)
2. *What's in my pack?*, Great Walks (August/September, 2022)
3. *Kalymnos — A Climbing Haven in the Greek Isles*, We Are Explorers (July, 2022)
4. *How Hiking Made Me Love NSW Even More*, We Are Explorers (June, 2022)
5. *How Much Should You Spend On Hiking Gear?*, We Are Explorers (March, 2022)
6. *Kosciuszko to Kiandra — Hiking The Snowy Mountains in Summer*, We Are Explorers (July, 2021)
7. *Making Your Own Adventure on The NSW Mid-Coast*, We Are Explorers (July, 2021)
8. *Climbing The Crags of Point Perpendicular*, We Are Explorers (October, 2020)
9. *Coffs Harbour to Yamba: 125km of Coastal Hiking*, We Are Explorers (September, 2020)

Editorial positions

1. Founding Reserve Editor, *Quantum*, www.quantum-journal.org (2016)
2. Lead Guest Editor, Special Issue on *The Theory of Quantum Simulation, Quantum Dynamics & Quantum Walks*, Advances in Mathematical Physics (2014)

Scientific outreach

1. (invited panelist) *ASPI Presents: An Australian strategy for the quantum revolution*, panel discussion & launch event hosted by the Australian Strategic Policy Institute (ASPI), Canberra, Australia (2021).
2. *The Quantum Internet*, QuBes Camp run by Q-munity, 2020 (invited speaker).
3. *Toward a Quantum Internet*, Kitchener-Waterloo Quantum Technologies Enthusiasts, 2020 (invited speaker).
4. *Quantum computing & quantum cryptography*, webinar for Q-munity, an international, high school student led, pre-university quantum education network, 2020 (invited speaker).
5. *Digital Liberty – In defence of cryptoanarchy*, public event on digital rights, Sydney, Australia, 2020 (invited speaker)
6. *The barriers to medical cannabis in Australia*, Enpsychedelia, invited radio interview on 3CR Radio, Melbourne, Australia, 2020.
7. *Are quantum computers the path to world peace?*, TEDxNewtown, Sydney, Australia, 2019 (invited speaker)
8. *Why quantum physics is science, not witchcraft*, *Science @ The Local*, Blue Mountains, Australia, 2019 (invited public talk)
9. *An introduction to quantum computing & why it'll be a part of your future*, Kenmore State High School, Brisbane, Australia, 2019 (video-link talk and Q&A discussion)

10. *What's wrong with quantum mechanics?*, *The Science Nation event for National Science Week*, Sydney Maritime Museum, Sydney, Australia, 2019 (invited public forum)
11. *Intro to quantum computing*, DSAI Special Edition @Microsoft Reactor, Sydney, Australia, 2019 (invited public talk)
12. *For the love of science*, *The Science Nation*, Maritime Museum, Sydney, Australia, 2019 (invited panel discussion)
13. *Greatest discovery ever made*, *The Science Nation — Great Debate*, for National Science Week, Maritime Museum, Sydney, Australia, 2018 (invited public debate)
14. *Quantum computing — What you need to know and why*, NSW Knowledge Management Forum, 2018 (invited talk for community group)
15. *Spot the Bull*, Sydney Science Festival, 2017 (invited panel discussion for $>$ 300 high school students)
16. *Science in the Club — Quantum What?*, Armidale, Australia, 2017 (invited public talk and Q&A discussion)
17. *Australian Institute of Physics Pub Night*, Sydney, Austalia, 2016 (invited public Q&A discussion)
18. *Dennis Ritchie: The unsung hero of modern computing*, *The Science Nation — Great Debate*, Sydney Powerhouse Museum, Sydney, Australia, 2016 (invited public debate)
19. *Quantum technologies of the future*, *2016 Pint of Science Festival*, Sydney (invited public talk)
20. *Computing — Visions of the future*, *The Science Nation — Storytelling of Science*, Sydney Powerhouse Museum, Sydney, Australia, 2016 (invited public talk and panel discussion)
21. *Australian Institute of Physics Pub Night*, Sydney, Australia, 2015 (invited public talk)
22. *The Science Nation — Science Says!*, Sydney Powerhouse Museum, Sydney, Australia, 2015 (invited public panel discussion)
23. *Quantum physics beats astrophysics any day of the week!*, *The Science Nation — Great Debate*, Sydney Powerhouse Museum, Sydney Science Festival, Sydney, Australia, 2015 (invited public debate)
24. *Australian Institute of Physics Pub Night*, Sydney, Australia, 2014 (invited public talk)
25. *Australian Institute of Physics Free for All Variety Night*, Sydney, Australia, 2015 (invited public talk)
26. *Science @ The Local*, Blue Mountains, Australia, 2015 (invited public talk)
27. *An interview with Sir Peter Knight*, Macquarie University Physics & Astronomy Society, Sydney, Australia, 2014 (invited interview host)
28. *The Science Nation* public science seminar series, Sydney, Australia (volunteer)
29. *BrisScience* public science seminar series, Brisbane, Australia (organising committee)

Academic supervision

- 3 PhD graduates
- 4 PhD candidates
- 1 Masters graduate
- 1 Honours graduate
- 1 Masters candidate
- 32 Engineering Graduate Projects
- 4 undergraduate research projects

Mentorship

1. Humanitarian mentoring program (University of Technology Sydney, Australia)
2. EQUS mentoring program (University of Queensland, Australia)
3. Fellowship mentoring program (University of Technology Sydney, Australia)

Awards

1. Armidale Young Citizen of the Year Award (jointly awarded, 1999)
2. Emmanuel College Foundation Medal (2002)
3. University of Queensland Postgraduate Research Scholarship (UQPRS) (2004-2007)
4. Dean's Commendations for High Achievement (semesters I-IV,VI-VIII), University of Queensland
5. St. Andrew Society of Scotland (Queensland) D. M. Fraser Bursary for outstanding contribution to the College Community (Emmanuel College)
6. Golden Key Honours Society
7. College Scholarship for Academic Achievement (2001 & 2002, Emmanuel College)
8. College Prize for Academic Achievement with Distinction (2002, Emmanuel College)
9. Emmanuel College Full Blue (for outstanding contribution to the college)
10. Principal's Prize for Meritorious Academic Achievement (2001 & 2002, Emmanuel College)

Community & charity activities

1. Founding member of the AFTER Foundation, organising and participating in the "Project 2020 Walk" (September, 2020) to raise $1,000,000 to support youth mental health.
2. Submission to the Federal Senate inquiry into "Current barriers to patient access to medicinal cannabis in Australia", submission #133 (2020)
3. Lifeline telephone counsellor (2012-2016) — *Suicide intervention and crisis support telephone counselling*
4. Human Capital Project (humancapitalproject.com.au), Admin committee (2012-2015) — *Providing micro-loans via personal equity contracts to provide university education for underprivileged students in Cambodia*
5. Applied Suicide Intervention Skills Training (ASIST) — *Training in emergency suicide intervention counselling.*
6. Brisbane flood cleanup volunteer (2011) — *Volunteering to assist the recovery operation in Brisbane following the catastrophic 2011 floods*
7. Election scrutineering, Australian federal election (2004) — *Overseeing the counting of election ballots*
8. Charity fundraising band gigs — *Raising money for educational charities in South America and supporting local charity events with entertainment*
9. 'Shave for a Cure' Leukemia Foundation Fundraiser (2002)
10. Community radio announcer (2ARM Armidale & VOX FM Illawarra)
11. Blood bank donor
12. Armidale Dance Party organisation group (1997-1999) — *Providing a safe alcohol- and drug-free social and dance environment for Armidale's youth*
13. Armidale Streamwatch Society (vice president) (1996) — *Engaging with school students for environmental causes, specifically the preservation of waterways*
14. Group leader of the 'Stop Gay- and Trans-Hate Now' workshop — *Leading a workshop for hate-affected gay and transexual youths to overcome stigma, discrimination and hatred*

Personal activities & interests

- ◇ Mountaineer, paraglider, rock climber, freediver, marathon runner, percussionist, DJ, composer & producer, artist, stand-up comedian
- ◇ Emmanuel College Student Club Executive (Cultural Convener) (2002)
- ◇ Writing and directing of the Emmanuel College musical (2002)
- ◇ University of Queensland Liberal Club Executive (2004-2005)
- ◇ Young Liberals (QLD Management Committee, Fig Tree Pocket Executive, QLD Convention Delegate, QLD Senior Party Conference Delegate, QLD Policy Standing Committee, Fig Tree Pocket Newsletter Editor) (2004-2012)
- ◇ University of Queensland Student Union, Postgraduate Committee (2006)
- ◇ Election campaigning: Australian Federal election (2004), Queensland State election, Brisbane City Council election (2010)
- ◇ Brisbane Marathon ("Lest we forget run") & Bridge to Brisbane run

◇ Debating & public speaking (The Oxford Union, University of Queensland Debating Society, Commonwealth Bank Cup, Hume Barbor, Inter-College Cup, Plain English Speaking Awards, Mock Parliament, Young Liberal National Sir Jim Killen Public Speaking Competition, Griffith University Comedy Debate, Paderborn University Debating Society, Gutenberg Cup, Royal Australian Rant Society, Toastmasters)
◇ Drama (Emmanuel College One Act Play team)
◇ Emmanuel College rowing team (cox)
◇ Choir (Macquarie University Choir, Wollongong Gospel Choir, Oxford Student Chorus, University of Queensland Musical Society, Emmanuel College, Armidale High School)
◇ Chess (University of Queensland Chess Club, Emmanuel College Chess team - winners of Inter-College competition 2001-2002)
◇ Emmanuel College Laughing Society (Founder & President)
◇ Drumming (Samba Ninja Sydney, Trommel-Feuer Erlangen, Brisbane Samba School)

Alpinism

◇ Mont Blanc (4,808m), Signalkuppe/Punta Gnifetti (4,554m), Dôme du Goûter (4,300m), Naso del Liskamm (4,272m), Castor (4,225m), Zinalrothorn (4,221m), Punta Felik (4,174 meters), Breithorn (4,163m), Felikhorn (4,087m), Weissmies (4,017m), Lagginhorn (4,010m), Monte Civetta (3,220m), Zugspitze (2,962m)

Publication statistics

◇ Peer-reviewed publications: 57
◇ Citations: $> 2,400$
◇ H-index: 28
◇ i10-index: 49
◇ Lead author & editor of the book *"The Quantum Internet: The Second Quantum Revolution"*, Cambridge University Press (2021)
◇ 2 publications in *Science* (1 invited)
◇ 5 publications in *Physical Review Letters*
◇ 1 publication in *Optica*
◇ 2 book chapters
◇ 1 policy brief
◇ 2 popular articles
◇ Erdős number: ≤ 4

Refereed publications

Note: Authorship lists where I appear as last author are where I acted as project leader, except (9, 43 & 57).

1. *Reducing circuit complexity in optical quantum computation using 3D architectures* (editor's pick), Wen-Hao Zhou, Madhav Krishnan Vijayan, Xiao-Wei Wang, Yong-Heng Lu, Jun Gao, Zhi-Qiang Jiao, Ruo-Jing Ren, Yi-Jun Chang, Zi-Song Shen, Peter P. Rohde & Xian-Min Jin, Optics Express **30**, 32887 (2022) [doi.org/10.1364/OE.464108]
2. (invited) *Integrated photonic platforms for quantum technology: A review*, Rohit K. Ramakrishnan, Aravinth Balaji Ravichandran, Arpita Mishra, Archana Kaushalram, Gopalkrishna Hegde, Srinivas Talabattula & Peter P. Rohde, ISSS Journal of Micro & Smart Systems (2022) [arXiv:2206.15383]
3. (invited) *The quantum internet: A hardware review*, Rohit K. Ramakrishnan, Aravinth Balaji Ravichandran, Ishwar Kaushik, Gopalkrishna Hegde, Srinivas Talabattula & Peter P. Rohde, Journal of the Indian Institute of Science (2022) [arXiv:2206.15376]
4. *Accessible and inaccessible quantum coherence in relativistic quantum systems*, Saveetha Harikrishnan, Segar Jambulingam, Peter P. Rohde & Chandrashekar Radhakrishnan, Physical Review A **105**, 052403 (2022) [arXiv:2107.02490]
5. *Photonic quantum data locking*, Zixin Huang, Peter P. Rohde, Dominic W. Berry, Pieter Kok, Jonathan P. Dowling & Cosmo Lupo, Quantum **5**, 447 (2021) [arXiv:1905.03013v3]
6. *Photonic quantum error correction of linear optics using W-state encoding*, Madhav Krishnan Vijayan, Austin P. Lund & Peter P. Rohde, Quantum **4**, 303 (2020) [arXiv:1910.03093v2]
7. *Homomorphic encryption of linear optics quantum computation on almost arbitrary states of light with asymptotically perfect security*, Yingkai Ouyang, Si-Hui Tan, Joseph Fitzsimons & Peter P. Rohde, Physical Review Research **2**, 013332 (2020) [arXiv:1902.10972]

8. *Relativity of quantum states in entanglement swapping*, Chris Nagele, Ebubechukwu O. Ilo-Okeke, Peter P. Rohde, Jonathan P. Dowling & Tim Byrnes, Physics Letters A **384**, 126301 (2020) [arXiv:1806.02407]
9. *The resurgence of the linear optics interferometer — Recent advances & applications*, Si-Hui Tan & Peter P. Rohde, (invited) Reviews in Physics **4**, 100030 (2019) [arXiv:1805.11827]
10. *Practical quantum somewhat-homomorphic encryption with coherent states*, Si-Hui Tan, Yingkai Ouyang & Peter P. Rohde, Physical Review A **97**, 042308 (2018) [arXiv:1710.03968]
11. *Demonstration of topological data analysis on a quantum processor*, He-Liang Huang, Peter P. Rohde, Xi-Lin Wang, Yi-Han Luo, You-Wei Zhao, Chang Liu, Li Li, Nai-Le Liu, Chao-Yang Lu & Jian-Wei Pan, Optica **5**, 193 (2018) [arXiv:1801.06316]
12. *Passive quantum error correction of linear optics networks through error averaging*, Ryan J. Marshman, Austin P. Lund, Peter P. Rohde & Timothy C. Ralph, Physical Review A **97**, 022324 (2017) [arXiv:1709.02157]
13. *Multiphoton interference in quantum Fourier transform circuits and applications to quantum metrology*, Zu-En Su, Yuan Li, Peter P. Rohde, He-Liang Huang, Xi-Lin Wang, Li Li, Nai-Le Liu, Jonathan P. Dowling, Chao-Yang Lu & Jian-Wei Pan, Physical Review Letters **119**, 080502 (2017) [arXiv:1708.00296]
14. *Linear optical quantum metrology with single photons — Experimental errors, resource counting, and quantum Cramér-Rao bounds*, Jonathan P. Olson, Keith R. Motes, Patrick M. Birchall, Nick M. Studer, Margarite LaBorde, Todd Moulder, Peter P. Rohde & Jonathan P. Dowling, Physical Review A **96**, 013810 (2017) [arXiv:1610.07128]
15. *Measurement-based linear optics*, Rafael N. Alexander, Natasha Gabay, Peter P. Rohde & Nicolas C. Menicucci, Physical Review Letters **118**, 110503 (2017) [arXiv:1606.00446]
16. *Efficient recycling strategies for preparing large Fock states from single-photon sources: Applications to quantum metrology*, Keith R. Motes, Ryan L. Mann, Jonathan P. Olson, Nicholas M. Studer, E. Annelise Bergeron, Alexei Gilchrist, Jonathan P. Dowling, Dominic W. Berry & Peter P. Rohde, Physical Review A **94**, 012344 (2016) [arXiv:1603.00533]
17. *Quantum random walks on congested lattices*, Keith R. Motes, Alexei Gilchrist & Peter P. Rohde, Scientific Reports **6**, 19864 (2016) [arXiv:1310.8161]
18. *Implementing scalable boson sampling with time-bin encoding: analysis of loss, mode mismatch, and time jitter*, Keith R. Motes, Jonathan P. Dowling, Alexei Gilchrist & Peter P. Rohde, Physical Review A **92**, 052319 (2015) [arXiv:1507.07185]
19. *Multiplexed single-photon state preparation using a fibre-loop architecture*, Peter P. Rohde, L. G. Helt, M. J. Steel & Alexei Gilchrist, Physical Review A **92**, 053829 (2015) [arXiv:1503.03546]
20. *Multi-scale quantum simulation of quantum field theory using wavelets*, Gavin K. Brennen, Peter P. Rohde, Barry C. Sanders & Sukhwinder Singh, Physical Review A **92**, 032315 (2015) [arXiv:1412.0750]
21. *The on-ramp to the all optical quantum information processing highway*, Peter P. Rohde & Jonathan P. Dowling, invited perspective article, Science **349**, 696 (2015)
22. *Linear optical quantum metrology with single photons: Exploiting spontaneously generated entanglement to beat the shot-noise limit*, Keith R. Motes, Jonathan P. Olson, Evan J. Rabeaux, Jonathan P. Dowling, S. Jay Olson & Peter P. Rohde, Physical Review Letters **114**, 170802 (2015) [arXiv:1501.01067]
23. *Boson sampling with displaced single-photon Fock states versus single-photon-added coherent states — The quantum-classical divide and computational-complexity transitions in linear optics*, Kaushik P. Seshadreesan, Jonathan P. Olson, Keith R. Motes, Peter P. Rohde & Jonathan P. Dowling, Physical Review A **91**, 022334 (2015) [arXiv:1402.0531]
24. *Sampling arbitrary photon-added or photon-subtracted squeezed states is in the same complexity class as boson sampling*, Jonathan P. Olson, Kaushik P. Seshadreesan, Keith R. Motes, Peter P. Rohde & Jonathan P. Dowling, Physical Review A **91**, 022317 (2015) [arXiv:1406.7821]
25. *Evidence for the conjecture that sampling generalized cat states with linear optics is hard*, Peter P. Rohde, Keith R. Motes, Paul Knott, Joseph Fitzsimons, William Munro & Jonathan P. Dowling, Physical Review A **91**, 012342 (2015) [arXiv:1310.0297]

26. *Simple scheme for universal linear optics quantum computing with constant experimental complexity using fiber loops*, Peter P. Rohde, Physical Review A **91**, 012306 (2015) [arXiv:1410.0433]
27. *Boson sampling with photons of arbitrary spectral structure*, Peter P. Rohde, Physical Review A **91**, 012307 (2015) [arXiv:1410.3979]
28. *Scalable boson-sampling with time-bin encoding using a loop-based architecture*, Keith R. Motes, Alexei Gilchrist, Jonathan P. Dowling & Peter P. Rohde, Physical Review Letters **113**, 120501 (2014) [arXiv:1403.4007]
29. *Quantum walks with tuneable self-avoidance in one dimension*, Elizabeth Camilleri, Peter P. Rohde & Jason Twamley, Scientific Reports **4**, 4791 (2014) [arXiv:1401.1869]
30. *Spontaneous parametric down-conversion photon sources are scalable for boson-sampling in the asymptotic limit*, Keith R. Motes, Jonathan P. Dowling & Peter P. Rohde, Physical Review A **88**, 063822 (2013) [arXiv:1307.8238]
31. *Information capacity of a single photon*, Peter P. Rohde, Joseph F. Fitzsimons & Alexei Gilchrist, Physical Review A **88**, 022310 (2013) [arXiv:1211.1427]
32. *Quantum walks with memory provided by recycled coins and a memory of the coin-flip history*, Peter P. Rohde, Gavin K. Brennen & Alexei Gilchrist, Physical Review A **87**, 052302 (2013) [arXiv:1212.4540]
33. *Optical quantum computing with photons of arbitrarily low fidelity and purity*, Peter P. Rohde, Physical Review A **86**, 052321 (2012) [arXiv:1208.2475]
34. *Quantum walks with encrypted data*, Peter P. Rohde, Joseph F. Fitzsimons & Alexei Gilchrist, Physical Review Letters **109**, 150501 (2012) [arXiv:1204.3370]
35. *Increasing the dimensionality of quantum walks using multiple walkers*, Peter P. Rohde, Andreas Schreiber, Martin Štefaňák, Igor Jex, Alexei Gilchrist & Christine Silberhorn, Journal of Computational & Theoretical Nanoscience **10**, 1644 (2013) [arXiv:1205.1850]
36. *A 2D quantum walk simulation of two-particle dynamics*, Andreas Schreiber, Aurél Gábris, Peter P. Rohde, Kaisa Laiho, Martin Štefaňák, Václav Potoček, Craig Hamilton, Igor Jex & Christine Silberhorn, Science **336**, 55 (2012) [arXiv:1204.3555]
37. *Error tolerance of the boson-sampling model for linear optics quantum computing*, Peter P. Rohde & Timothy C. Ralph, Physical Review A **85**, 022332 (2012) [arXiv:1111.2426]
38. *Entanglement dynamics and quasi-periodicity in discrete quantum walks*, Peter P. Rohde, Alessandro Fedrizzi & Timothy C. Ralph, Journal of Modern Optics **59**, 710 (2012) [arXiv:1102.4385]
39. *Time-resolved detection and mode-mismatch in linear optics quantum gates*, Peter P. Rohde & Timothy C. Ralph, New Journal of Physics **13**, 053036 (2011) [arXiv:1101.3812]
40. *Multi-walker discrete time quantum walks on arbitrary graphs, their properties, and their photonic implementation*, Peter P. Rohde, Andreas Schreiber, Martin Štefaňák, Igor Jex & Christine Silberhorn, New Journal of Physics **13**, 013001 (2011) [arXiv:1006.5556]
41. *Scalable quantum computing with atomic ensembles*, Sean D. Barrett, Peter P. Rohde & Thomas M. Stace, New Journal of Physics **12**, 093032 (2010) [arXiv:0804.0962]
42. *Entanglement of remote spins with unequal coupling to an optically active mediator*, Erik M. Gauger, Peter P. Rohde, A. Marshall Stoneham & Brendon W. Lovett, New Journal of Physics **10**, 073027 (2008) [arXiv:0802.3670]
43. *How to measure host specificity*, Klaus Rohde & Peter P. Rohde, Vie et Milieu (Life & Environment) **58**, 121 (2008)
44. *Practical effects in the preparation of cluster states using weak non-linearities*, Peter P. Rohde, William J. Munro, Timothy C. Ralph, Peter van Loock & Kae Nemoto, QIC **8**, 0053 (2008) [arXiv:0705.4522]
45. *Photon number projection using non-number-resolving detectors*, Peter P. Rohde, James G. Webb, Elanor H. Huntington & Timothy C. Ralph, New Journal of Physics **9**, 233 (2007) [arXiv:0705.4003]
46. *Strategies for the preparation of large cluster states using non-deterministic gates*, Peter P. Rohde & Sean D. Barrett, New Journal of Physics **9**, 198 (2007) [arXiv:quant-ph/0701068]

47. *Spectral structure and decompositions of optical states, and their applications*, Peter P. Rohde, Wolfgang Mauerer & Christine Silberhorn, New Journal of Physics **9**, 91 (2007) [arXiv:quant-ph/0609004]
48. *Trade-off between the tolerance of located and unlocated errors in nondegenerate quantum error-correcting codes*, Henry L. Haselgrove & Peter P. Rohde, QIC **8**, 0399 (2008) [arXiv:quant-ph/0605183]
49. *Error tolerance and tradeoffs in loss- and failure-tolerant quantum computing schemes*, Peter P. Rohde, Timothy C. Ralph & William J. Munro, Physical Review A **75**, 010302(R) (2007) [arXiv:quant-ph/0603130]
50. *Error models for mode-mismatch in linear optics quantum computing*, Peter P. Rohde & Timothy C. Ralph, Physical Review A **73**, 062312 (2006) [arXiv:quant-ph/0602004]
51. *Practical limitations in optical entanglement purification*, Peter P. Rohde, Timothy C. Ralph & William J. Munro, Physical Review A **73**, 030301(R) (2006) [arXiv:quant-ph/0511268]
52. *Modeling photo-detectors in quantum optics*, Peter P. Rohde & Timothy C. Ralph, Journal of Modern Optics **53**, 1589 (2006) [arXiv:quant-ph/0511099]
53. *Optimal photons for quantum information processing*, Peter P. Rohde, Timothy C. Ralph & Michael A. Nielsen, Physical Review A **72**, 052332 (2005) [arXiv:quant-ph/0505139]
54. *Quantum gate characterization in an extended Hilbert space*, Peter P. Rohde, G. J. Pryde, J. L. O'Brien & Timothy C. Ralph, Physical Review A **72**, 032306 (2005) [arXiv:quant-ph/0411144]
55. *Non-deterministic approximation of photon number discriminating detectors using non-discriminating detectors*, Peter P. Rohde, Journal of Optics B **7**, 82 (2005) [arXiv:quant-ph/0411114]
56. *Frequency and temporal effects in linear optical quantum computing*, Peter P. Rohde & Timothy C. Ralph, Physical Review A **71**, 032320 (2005) [arXiv:quant-ph/0407002]
57. *Fuzzy Chaos: Reduced chaos in the combined dynamics of several independently chaotic populations*, Klaus Rohde & Peter P. Rohde, American Naturalist **158**, 553 (2001)

Books

1. *The Quantum Internet: The Second Quantum Revolution*, Peter P. Rohde, Cambridge University Press (2021).

Book chapters

1. *An introduction to boson-sampling*, Bryan T. Gard, Keith R. Motes, Jonathan P. Olson, Peter P. Rohde & Jonathan P. Dowling, In: Svetlana A. Malinovskaya & Irina Novikova (ed.) *From Atomic to Mesoscale: The Role of Quantum Coherence in Systems of Various Complexities*, World Scientific Publishing (2015) ISBN: 9789814678698 [arXiv:1406.6767]
2. *The ecological niches of parasites*, Klaus Rohde & Peter P. Rohde. In: Klaus Rohde (ed.) *Marine Parasitology*, CSIRO Publishing, Melbourne, pp. 286-293 & 510-511 (2005) ISBN: 9780643090255

Policy briefs

1. *An Australian strategy for the quantum revolution*, Gavin Brennen, Simon Devitt, Tara Roberson & Peter Rohde, Australian Strategic Policy Institute (ASPI), International Cyber Policy Centre, Policy Report No. 43/2021 (2021)

Popular articles

1. *Leading by example: Living with mental illness in academia*, Dragonfly Mental Health newsletter (2022)
2. *Leading by example: Living with mental illness in academia*, Voices of Academia (2022)
3. *MoodSnap! Technology for mental health*, Peter Rohde, The Spectator (2022)
4. *Blockchain finance in the quantum era*, Peter Rohde & Gavin Brennen, BTQ Blog (2021)
5. *Australia should invest in a home-grown quantum industry*, Gavin Brennen & Peter Rohde, The Strategist, Australian Strategic Policy Institute (2021)
6. *Australia needs a strategy for critical technologies and the quantum revolution*, Gavin Brennen, Simon Devitt, Tara Roberson & Peter Rohde, The Strategist, Australian Strategic Policy Institute (2021)

7. *The vision for the global quantum internet*, Peter P. Rohde, Fifteeneightfour — The Cambridge University Press Blog (2021)
8. *Australian breakthrough brings quantum computing closer*, The Conversation (2012)
9. *Particles and persecution: why we should care about Iranian physicists*, Thomas Stace & Peter P. Rohde, The Conversation (2012)
10. *Why I am opposed to an Australian Bill of Rights*, Peter P. Rohde. In: *Issues in Society – Human Rights & Civil Liberties* **325**, 43 (2011)

Un-refereed publications or under review

1. *Optical cluster-state generation with unitary averaging*, Deepesh Singh, Austin P. Lund & Peter P. Rohde (2022) [arXiv:2209.15282]
2. *Compilation of algorithm-specific graph states for quantum circuits*, Madhav Krishnan Vijayan, Alexandru Paler, Jason Gavriel, Casey R. Myers, Peter P. Rohde & Simon J. Devitt (2022) [arXiv:2209.07345]
3. *Upper bounds for the clock speeds of fault-tolerant distributed quantum computation using satellites to supply entangled photon pairs*, Hudson Leone, S. Srikara, Peter P. Rohde & Simon Devitt (2022) [arXiv:2209.00151]
4. *A general framework for the composition of quantum homomorphic encryption & quantum error correction*, Yingkai Ouyang & Peter P. Rohde (2022) [arXiv:2204.10471]
5. *QuNet: Cost vector analysis & multi-path entanglement routing in quantum networks*, Hudson Leone, Nathaniel Miller, Deepesh Singh, Nathan K. Langford & Peter P. Rohde (2021) [arXiv:2105.00418]
6. *Quantum crypto-economics: Blockchain prediction markets for the evolution of quantum technology*, Peter P. Rohde, Vijay Mohan, Sinclair Davidson, Chris Berg, Darcy Allen, Gavin K. Brennen & Jason Potts (2021) [arXiv:2102.00659]
7. *Photonic quantum simulations of SSH-type topological insulators with perfect state transfer*, M. Stobińska, T. Sturges, A. Buraczewski, W. R. Clements, J. J. Renema, S. W. Nam, T. Gerrits, A. Lita, Peter P. Rohde, W. S. Kolthammer, A. Eckstein & I. A. Walmsley (2019) [arXiv:1906.00678]
8. *A quantum optics argument for the #P-hardness of a class of multidimensional integrals*, Peter P. Rohde, Dominic W. Berry, Keith R. Motes & Jonathan P. Dowling (2016) [arXiv:1607.04960]
9. *Bosonic interference as a complementary resource for implementation of quantum walks*, Magdalena Stobińska, Peter P. Rohde, Paweł Kurzyński & Anton Zeilinger (2015) [arXiv:1504.05480]
10. *Will boson-sampling ever disprove the Extended Church-Turing thesis?*, Peter P. Rohde, Keith R. Motes, Paul Knott & William J. Munro (2014) [arXiv:1401.2199]
11. *Optimising number resolving photo-detectors using classical post-processing*, Peter P. Rohde (2011) [arXiv:1107.2747]
12. *Are quantum walks the saviour of optical quantum computing?*, Peter P. Rohde (2010) [arXiv:1010.4608]
13. *Improving the fidelity of single photon preparation from conditional down-conversion via asymmetric multiport detection*, Peter P. Rohde (2006) [arXiv:quant-ph/0703238]
14. *Noise thresholds for entanglement purification*, Peter P. Rohde (2007) [arXiv:quant-ph/0702065]
15. *Error propagation in loss- and failure-tolerant quantum computation schemes*, Peter P. Rohde, Timothy C. Ralph & William J. Munro (2007) [arXiv:quant-ph/0701090]
16. *Quantum state tomography of single photon sources in the spectral degree of freedom*, Peter P. Rohde (2006) [arXiv:quant-ph/0609005]

Theses

1. *Towards optical quantum information processing*, Peter P. Rohde, PhD thesis, University of Queensland, Australia (2008)
2. *Non-idealized models in linear optics quantum computing*, Peter P. Rohde, Honours thesis, University of Queensland, Australia (2004)

Invited talks

1. *The vision of the global quantum internet*, Peter P. Rohde, Telstra Unconference, Sydney, Australia (2022)
2. *Optical quantum computing, boson-sampling & quantum networking*, Peter P. Rohde, ACM School on Quantum Computing, Indian Institute for Technology Madras, India (2022)
3. *Evolution of the quantum internet: Secure cloud quantum computation*, Peter P. Rohde, Inside Quantum Technology (IQT), New York, United States (2021)
4. *Quantum networking*, Peter P. Rohde, Quantum Communications Workshop (QCW), Bangalore, IEEE-IISc Communications Society, Bangalore, India (2021)
5. *The quantum internet*, Peter P. Rohde, Sydney Quantum Academy student series, Sydney, Australia (2021)
6. *Multi-path entanglement routing in the quantum internet*, Peter P. Rohde, Quantum Frontiers & Fundamentals (QFF), Raman Research Institute, Bangalore, India (2020)
7. *Geo-strategic politics in the quantum era*, Peter P. Rohde, Raman Research Institute, Bangalore, India (2020)
8. *The quantum internet — Towards the singularity*, Peter P. Rohde, Indian Institute of Science, Bangalore, India (2018)
9. *The quantum internet — Implications for society, the economy & international geo-strategic politics*, Peter P. Rohde, Quantum Frontiers & Foundations, Bangalore, India (2018)
10. *The quantum internet — Implications for society, the economy & international geo-strategic politics*, Peter P. Rohde, University of Science & Technology China, Shanghai, China (2018)
11. *The quantum internet — Implications for society, the economy & international geo-strategic politics*, Peter P. Rohde, International Workshop on Quantum Computing & Quantum Information Processing (QCQIP), Beijing, China (2017)
12. *Quantum computing — A gentle introduction*, Peter P. Rohde, Department of Nanoscience & Engineering, Indian Institute of Science, Bangalore, India (2017)
13. *Introduction to optical quantum computing*, Peter P. Rohde, Brainstorming Workshop on Quantum Computation, Information, Communications & Cryptography, Indian Institute of Science, Bangalore, India (2017)
14. *Optical quantum information processing — From beginnings to the cutting edge* (4 part series), Peter P. Rohde, Summer school in Optics & Photonics (SOAP), sponsored by IEEE Photonics, Indian Institute of Science, Bangalore, India (2017)
15. *Advances in linear optics quantum information processing*, Peter P. Rohde, Centre for Quantum Technologies (CQT), National University of Singapore, Singapore (2017)
16. *Encrypted optical quantum computation*, Peter P. Rohde, Si-Hui Tan, Yingkai Ouyang, Alexei Gilchrist & Joseph Fitzsimons, Centre for Quantum Computation & Communication Technology (CQC^2T) Quantum Optics Workshop, University of Queensland, Brisbane, Australia (2017)
17. *Introduction to optical quantum information processing*, Peter P. Rohde, COMMAD'2016, Optoeletronic & Microelectronic Materials & Devices, University of New South Wales, Sydney, Australia (2016)
18. *Post-classical quantum computation — A vision for the future*, Peter P. Rohde, Centre for Ultrahigh bandwidth Devices for Optical Systems (CUDOS) Quantum Photonics Connections Conference, Sydney, Australia (2016)
19. *Verification of boson-sampling devices*, Peter P. Rohde, University of Science & Technology China, Shanghai, China (2016)
20. *An introduction to boson-sampling*, Peter P. Rohde, University of Science & Technology China, Shanghai, China (2016)
21. *An introduction to computational complexity theory*, Peter P. Rohde, University of Science & Technology China, Shanghai, China (2016)
22. *Bitcoin, the Blockchain & smart contracts*, Peter P. Rohde, Australian Libertarian Society Friedman Conference, Sydney, Australia (2016)

23. *Strategies for the efficient preparation of large photon-number Fock states*, Keith R. Motes, Ryan L. Mann, Jonathan P. Olson, Nicholas M. Studer, E. Annelise Bergeron, Alexei Gilchrist, Jonathan P. Dowling, Dominic W. Berry & Peter P. Rohde, Centre for Quantum Computation & Intelligent Systems, University of Technology Sydney, Australia (2016)
24. *Errors and scalability in boson-sampling*, Peter P. Rohde, RMIT Photonic Quantum Computing Workshop, Melbourne, Australia (2016)
25. *Resource efficient schemes for linear optics quantum computing using fiber-loops*, Peter P. Rohde, Keith R. Motes, L. G. Helt, M. J. Steel, Jonathan P. Dowling & Alexei Gilchrist, University of Maryland, United States (2015)
26. *Resource efficient schemes for linear optics quantum computing using fiber-loops*, Peter P. Rohde, Keith R. Motes, L. G. Helt, M. J. Steel, Jonathan P. Dowling & Alexei Gilchrist, Macquarie University Quantum Science seminar, Sydney, Australia (2015)
27. *Linear optical quantum metrology with single photons — Exploiting spontaneously generated entanglement to beat the shotnoise limit*, Keith R. Motes, Jonathan P. Olson, Evan J. Rabeaux, S. Jay Olson, Jonathan P. Dowling & Peter P. Rohde, University of Sydney Quantum Optics group, Sydney, Australia (2015)
28. *Fiber-loop architectures for optical quantum information processing*, Keith R. Motes, Jonathan P. Dowling, Alexei Gilchrist & Peter P. Rohde, University of Sydney Quantum Optics group, Sydney, Australia (2015)
29. *Boson-sampling: the first post-classical quantum computer?*, Peter P. Rohde, Sydney Quantum Information Theory Workshop, Australia (2014)
30. *The role of charity in civil society*, Peter P. Rohde, Australian Libertarian Society Friedman Conference, Sydney, Australia (2014)
31. *Boson-sampling: a new route for optical quantum computing*, Peter P. Rohde, Centre for Engineered Quantum Systems, Macquarie University, Sydney, Australia (2014)
32. *Quantum walks with memory*, Peter P. Rohde, Gavin K. Brennen, Elizabeth Camilleri, Jason Twamley & Alexei Gilchrist, American Mathematical Society Special Session on Quantum Walks, Quantum Computation & Related Topics, Baltimore, United States (2014)
33. *An introduction to computational complexity theory*, Peter P. Rohde, Centre for Engineered Quantum Systems, Macquarie University, Sydney, Australia (2012)
34. *An introduction to boson-sampling*, Peter P. Rohde, Institute of Theoretical Physics & Astrophysics, University of Gdansk, Gdansk, Poland (2013)
35. *An introduction to wavelet theory*, Peter P. Rohde, Centre for Engineered Quantum Systems, Macquarie University, Sydney, Australia (2012)
36. *An introduction to quantum walks*, Peter P. Rohde, First Australian Quantum Walkshop, Sydney, Australia (2012)
37. *Advances in linear optics quantum computing*, Peter P. Rohde, Leibnitz University, Hannover, Germany (2011)
38. *What do we need to build an optical quantum computer?*, Peter P. Rohde, University of Paderborn, Paderborn, Germany (2011)
39. *Escher — A de novo genetic sequencing tool using graph theory*, Peter P. Rohde, Nicole Cloonan, Sean Grimmond, International Conference on De Novo Sequencing, Beijing, China (2009)
40. *Strategies for the preparation of cluster states using non-deterministic gates*, Peter P. Rohde & Sean D. Barrett, Oxford University, UK (2007)
41. *Mode-matching effects in linear optics quantum computing*, Peter P. Rohde & Timothy C. Ralph, International Conference on Quantum Optics (ICQO), Minsk, Belarus (2006)
42. *A theoretical introduction to quantum walks*, Peter P. Rohde, Max-Planck Institute for the Science of Light, Erlangen, Germany (2005)

Panel discussions & public debates

1. *Keeping data safe in a post quantum world*, Peter P. Rohde & Gavin Brennen, Gateway Network Governance Body (2022).
2. *Quantum Networking — A national quantum network: opportunities and challenges*, Peter P. Rohde, Vikram Sharma, Ping Koy Lam, Maria Spiropulu & Zixin Huang, Quantum Australia 2022, Sydney, Australia (2022)
3. *Why Quantum Communication?*, Peter P. Rohde, Stefano Pirandola, Mathias Van Den Bossche, David Shaw, Inside Quantum Technology (IQT) The Hague, Netherlands (2022)
4. *ASPI Presents: An Australian strategy for the quantum revolution*, Peter P. Rohde, Gavin Brennen, Simon Devitt, Tara Roberson & Danielle Cave, panel discussion & launch event hosted by the Australian Strategic Policy Institute (ASPI), Canberra, Australia (2021)
5. *Should Australia be a Republic or a Monarchy?* (invited public debate), Peter P. Rohde, Australian Libertarian Society Friedman Conference, Sydney, Australia (2018)

Contributed talks

1. *Optimising quantum networks robustness in adversarial scenarios*, Darcy Morgan, Hudson Leone, Madhav Krishnan Vijayan & Peter P. Rohde, Quantum Resource Estimation workshop (QRE2021), Valencia, Spain (2021)
2. *Photonic quantum error correction of qudits using W-state encoding*, Rohit K. Ramakrishnan, Aravinth Balaji Ravichandran, Srinivas Talabattula, Madhav Krishnan Vijayan, Austin P. Lund & Peter P. Rohde, CLEO PR, Sydney, Australia (2020)
3. *Fiber-loop architectures for optical quantum information processing*, Peter P. Rohde, Centre for Ultrahigh bandwidth Devices for Optical Systems (CUDOS) Workshop, University of Sydney, Australia (2015)
4. *Quantum walks with memory*, Peter P. Rohde, Gavin K. Brennen & Alexei Gilchrist, Quantum Simulation & Quantum Walks Workshop, Pisa, Italy (2013)
5. *A 2D quantum walk simulation of two-particle dynamics*, Andreas Schreiber, Aurél Gábris, Peter P. Rohde, Kaisa Laiho, Martin Štefaňák, Václav Potoček, Craig Hamilton, Igor Jex & Christine Silberhorn, Australian Institute of Physics Congress (AIPC), Sydney, Australia (2012)
6. *Optical multi-walker quantum walks*, Peter P. Rohde, Timothy Ralph, Andreas Schreiber, Martin Štefaňák, Igor Jex, Alexei Gilchrist & Christine Silberhorn, Quantum Dynamics & Quantum Walks Workshop, Okazaki, Japan (2012)

Poster presentations

1. *Compilation of algorithm-specific graph states for quantum circuits*, Madhav Krishnan Vijayan, Alexandru Paler, Jason Gavriel, Casey R. Myers, Peter P. Rohde & Simon J. Devitt, Quantum Australia (2022), Sydney, Australia.
2. *Tradeoff between located and unlocated errors in quantum error correction*, Henry L. Haselgrove, Peter P. Rohde, Timothy C. Ralph & William J. Munro, Quantum Information Processing 2007, Brisbane, Australia (QIP'07)
3. *Error tolerance and tradeoffs in loss- and failure-tolerant quantum computing schemes*, Peter P. Rohde, Timothy C. Ralph & William J. Munro, Australian Institute of Physics Congress (AIPC), Brisbane, Australia (2006)
4. *Error propagation in loss- and failure-tolerant cluster state protocols*, Peter P. Rohde, Timothy C. Ralph & William J. Munro, National Institute of Informatics (NII), Tokyo, Japan (2006)
5. *Quantum gate characterisation in an extended Hilbert space*, Peter P. Rohde, Timothy C. Ralph, Geoffrey J. Pryde & Jeremy L. O'Brien, Conference on Lasers and Electro-Optics & Quantum Electronics and Laser Science Conference (CLEO/QELS), Baltimore, Maryland, United States (2005)
6. *Error models for mode-mismatch in linear optics quantum computing*, Peter P. Rohde & Timothy C. Ralph, Australian Conference on Optics, Lasers and Spectroscopy (ACOLS), Rotorua, New Zealand (2005)
7. *Quantum gate characterisation in an extended Hilbert space*, Peter P. Rohde, Timothy C. Ralph, Geoffrey J. Pryde & Jeremy L. O'Brien, Australian Institute of Physics National Congress (AIPC), Australian National University, Canberra, Australia (2005)

8. *Temporal mode-matching effects in linear optical quantum computing*, Peter P. Rohde & Timothy C. Ralph, Australian Conference on Optical Fibre Technology and Australian Optical Society Conference (ACOFT/AOS), Australian National University, Canberra, Australia (2004)
9. *Frequency and temporal effects in linear optical quantum computation*, Peter P. Rohde & Timothy C. Ralph, Australian Conference on Optics, Lasers and Spectroscopy (ACOLS), University of Melbourne, Melbourne, Australia (2003)
10. *Non-idealised models in linear optical quantum computation*, Peter P. Rohde & Timothy C. Ralph, University of Queensland Innovation Expo., Brisbane, Australia (2003)