

List of Publications

Below is a list of my publications to date in reverse chronological order, totalling to 26 peer-reviewed publications. These papers have amassed 1221 citations, with an h-index of 17 (Google Scholar – June 14, 2021). The following table summarises the journals I have published in (1st Column), the total number of publications in each journal and where they occur in my list (2nd Column), and the Impact Factor of the journal (3rd Column).

Journal	No. of Publications [Citation]	Impact Factor (2018)
Physical Review X (PRX)	1 – [11]	12.211
Physical Review Letters (PRL)	7 – [4, 6, 13, 16, 18, 21, 22]	9.227
Physical Review Applied	1 – [7]	4.532
Optics Letters	2 – [1, 2, 15, 24]	3.866
New Journal of Physics (NJP)	3 – [10, 17, 20]	3.773
Physical Review A (PRA)	9 – [3, 5, 8, 9, 12, 14, 19, 22, 26]	2.907
Applied Optics	1 – [25]	1.973

Publications: Peer-reviewed

[1] M. Nicolle, J. N. Becker, C. Weinzetl, I. A. Walmsley, and **P. M. Ledingham**. Gigahertz-bandwidth optical memory in $\text{pr}^{3+}:\text{y}_2\text{si}_5\text{o}_5$. *Opt. Lett.*, 46(12):2948–2951, Jun 2021 [0 citations](#)

[2] D. Main, T. M. Hird, S. Gao, I. A. Walmsley, and **P. M. Ledingham**. Room temperature atomic frequency comb storage for light. *Opt. Lett.*, 46(12):2960–2963, Jun 2021 [0 citations](#)
Highlighted as an Editor's pick

[3] D. Main, T. M. Hird, S. Gao, E. Oguz, D. J. Saunders, I. A. Walmsley, and **P. M. Ledingham**. Preparing narrow velocity distributions for quantum memories in room-temperature alkali-metal vapors. *Phys. Rev. A*, 103:043105, Apr 2021 [0 citations](#)

[4] S. Gao, O. Lazo-Arjona, B. Brecht, K. T. Kaczmarek, S. E. Thomas, J. Nunn, **P. M. Ledingham**, D. J. Saunders, and I. A. Walmsley. Optimal coherent filtering for single noisy photons. *Phys. Rev. Lett.*, 123:213604, Nov 2019 [9 citations](#)

[5] S. E. Thomas, T. M. Hird, J. H. D. Munns, B. Brecht, D. J. Saunders, J. Nunn, I. A. Walmsley, and **P. M. Ledingham**. Raman quantum memory with built-in suppression of four-wave-mixing noise. *Phys. Rev. A*, 100:033801, Sep 2019 [10 citations](#)

[6] J. Klatzow, J. N. Becker, **P. M. Ledingham**, C. Weinzetl, K. T. Kaczmarek, D. J. Saunders, J. Nunn, I. A. Walmsley, R. Uzdin, and E. Poem. Experimental Demonstration of Quantum Effects in the Operation of Microscopic Heat Engines. *Phys. Rev. Lett.*, 122(11):110601, March 2019 [182 citations](#)
Editor's Suggestion; Selected for a Viewpoint in Physics; Highlighted in Nature News, New Scientist, physicsworld.com

[7] T. A. Wright, R. J. A. Francis-Jones, C. B. E. Gawith, J. N. Becker, **P. M. Ledingham**, P. G. R. Smith, J. Nunn, P. J. Mosley, B. Brecht, and I. A. Walmsley. Two-Way Photonic Interface for Linking the Sr^+ Transition at 422 nm to the Telecommunication C Band. *Phys. Rev. Applied*, 10(4):044012, October 2018 [17 citations](#)

[8] K. T. Kaczmarek, **P. M. Ledingham**, B. Brecht, S. E. Thomas, G. S. Thekkadath, O. Lazo-Arjona, J. H. D. Munns, E. Poem, A. Feizpour, D. J. Saunders, J. Nunn, and I. A. Walmsley. High-speed noise-free optical quantum memory. *Phys. Rev. A*, 97(4):042316, April 2018 [77 citations](#)

[9] J. Nunn, J. H. D. Munns, S. Thomas, K. T. Kaczmarek, C. Qiu, A. Feizpour, E. Poem, B. Brecht, D. J. Saunders, **P. M. Ledingham**, D. V. Reddy, M. G. Raymer, and I. A. Walmsley. Theory of noise suppression in Λ -type quantum memories by means of a cavity. *Phys. Rev. A*, 96(1):012338, July 2017 [31 citations](#)

[10] S. E. Thomas, J. H. D. Munns, K. T. Kaczmarek, C. Qiu, B. Brecht, A. Feizpour, **P. M. Ledingham**, I. A. Walmsley, J. Nunn, and D. J. Saunders. High efficiency Raman memory by suppressing radiation trapping. *New J. Phys.*, 19(6):063034, June 2017 [19 citations](#)

[11] A. Seri, A. Lenhard, D. Rieländer, M. Gündoğan, **P. M. Ledingham**, M. Mazzera, and H. de Riedmatten. Quantum Correlations between Single Telecom Photons and a Multimode On-Demand Solid-State Quantum Memory. *Phys. Rev. X*, 7(2):021028, May 2017 [73 citations](#)
Selected for a Viewpoint in Physics

- [12] K. Kutluer, M. F. Pascual-Winter, J. Dajczgewand, **P. M. Ledingham**, M. Mazzera, T. Chanelière, and H. de Riedmatten. Spectral-hole memory for light at the single-photon level. *Phys. Rev. A*, 93(4):040302, April 2016 [17 citations](#)
- [13] D. J. Saunders, J. H. D. Munns, T. F. M. Champion, C. Qiu, K. T. Kaczmarek, E. Poem, **P. M. Ledingham**, I. A. Walmsley, and J. Nunn. Cavity-Enhanced Room-Temperature Broadband Raman Memory. *Phys. Rev. Lett.*, 116(9):090501, March 2016 [89 citations](#)
- [14] J. H. D. Munns, C. Qiu, **P. M. Ledingham**, I. A. Walmsley, J. Nunn, and D. J. Saunders. In situ characterization of an optically thick atom-filled cavity. *Phys. Rev. A*, 93(1):013858, January 2016 [11 citations](#)
- [15] K. T. Kaczmarek, D. J. Saunders, M. R. Sprague, W. S. Kolthammer, A. Feizpour, **P. M. Ledingham**, B. Brecht, E. Poem, I. A. Walmsley, and J. Nunn. Ultrahigh and persistent optical depths of cesium in Kagomé-type hollow-core photonic crystal fibers. *Opt. Lett.*, OL, 40(23):5582–5585, December 2015 [31 citations](#)
- [16] M. Gündoğan, **P. M. Ledingham**, K. Kutluer, M. Mazzera, and H. de Riedmatten. Solid State Spin-Wave Quantum Memory for Time-Bin Qubits. *Phys. Rev. Lett.*, 114(23):230501, June 2015 [135 citations](#)
- [17] N. Maring, K. Kutluer, J. Cohen, M. Cristiani, M. Mazzera, **P. M. Ledingham**, and H. de Riedmatten. Storage of up-converted telecom photons in a doped crystal. *New J. Phys.*, 16(11):113021, November 2014 [46 citations](#)
- [18] D. Rieländer, K. Kutluer, **P. M. Ledingham**, M. Gündoğan, J. Fekete, M. Mazzera, and H. de Riedmatten. Quantum Storage of Heralded Single Photons in a Praseodymium-Doped Crystal. *Phys. Rev. Lett.*, 112(4):040504, January 2014 [84 citations](#)
- [19] J. W. Tay, W. G. Farr, **P. M. Ledingham**, D. Korystov, and J. J. Longdell. Hybrid optical and electronic laser locking using slow light due to spectral holes. *Phys. Rev. A*, 87(6):063824, June 2013 [12 citations](#)
- [20] M. Gündoğan, M. Mazzera, **P. M. Ledingham**, M. Cristiani, and H. de Riedmatten. Coherent storage of temporally multimode light using a spin-wave atomic frequency comb memory. *New J. Phys.*, 15(4):045012, April 2013 [64 citations](#)
- [21] **P. M. Ledingham**, W. R. Naylor, and J. J. Longdell. Experimental Realization of Light with Time-Separated Correlations by Rephasing Amplified Spontaneous Emission. *Phys. Rev. Lett.*, 109(9):093602, August 2012 [24 citations](#)
- [22] M. Gündoğan, **P. M. Ledingham**, A. Almasi, M. Cristiani, and H. de Riedmatten. Quantum Storage of a Photonic Polarization Qubit in a Solid. *Phys. Rev. Lett.*, 108(19):190504, May 2012 [116 citations](#)
Selected for a Synopsis in Physics; Highlighted in physicsworld.com.
- [23] D. L. McAuslan, **P. M. Ledingham**, W. R. Naylor, S. E. Beavan, M. P. Hedges, M. J. Sellars, and J. J. Longdell. Photon-echo quantum memories in inhomogeneously broadened two-level atoms. *Phys. Rev. A*, 84(2):022309, August 2011 [79 citations](#)
- [24] S. E. Beavan, **P. M. Ledingham**, J. J. Longdell, and M. J. Sellars. Photon echo without a free induction decay in a double- Λ system. *Opt. Lett.*, OL, 36(7):1272–1274, April 2011 [13 citations](#)
- [25] J. W. Tay, **P. M. Ledingham**, and J. J. Longdell. Coherent optical ultrasound detection with rare-earth ion dopants. *Appl. Opt.*, AO, 49(23):4331–4334, August 2010 [17 citations](#)
- [26] **P. M. Ledingham**, W. R. Naylor, J. J. Longdell, S. E. Beavan, and M. J. Sellars. Nonclassical photon streams using rephased amplified spontaneous emission. *Phys. Rev. A*, 81(1):012301, January 2010 [57 citations](#)

Below is a list of conference papers (limited to the abstracts that I prepared and submitted), with 16 oral presentations and 8 poster presentations. An asterisk indicates presentations that were given on my behalf [5, 7].

Conference Papers: Peer-reviewed

- [1] Atomic Frequency Comb Memory in a Room Temperature Alkali Vapour, **QTech 2020 - Quantum Technology International Conference**, Barcelona, Spain, (11/2020) Oral
- [2] Interfacing Quantum Dot Emission with Alkali Ensembles: Optimal Coherent Filtering for Single Photons, International Conference on Laser Spectroscopy, **ICOLS**, Queenstown, New Zealand, (07/2019), *Hot Topic Talk* Oral
- [3] Noise Suppression via Atomic Absorption in a Raman Quantum Memory, **CLEO/Europe-EQEC Conference**, Munich, Germany, (06/2019) Oral
- [4] Broadband Light-Matter Interactions with an Atomic Frequency Comb in a Rare-Earth-Ion-Doped Crystal, International Conference on Atomic Physics, **ICAP**, Barcelona, Spain, (07/2018) Poster
- [5] Genuine Quantum Memory for Broadband Light, Australia New Zealand Conference on Optics and Photonics, **ANZCOP**, Queenstown, New Zealand, (12/2017) Oral
- *[6] A Noiseless Quantum Optical Memory at Room Temperature, 24th Central European Workshop on Quantum Optics, **CEWQO**, Copenhagen, Denmark, (06/2017) Poster
- [7] A Noiseless Quantum Optical Memory at Room Temperature, **CLEO/Europe-EQEC Conference**, Munich, Germany, (06/2017) Oral
- *[8] A Cavity-Enhanced Room-Temperature Broadband Raman Memory, Conference on Lasers and Electro-Optics, **CLEO**, San Jose, United States of America (06/2016) Oral
- [9] A Cavity-Enhanced Room-Temperature Broadband Raman Memory, Asia-Pacific Conference and Workshop on Quantum Information Science 2015, **APCWQIS**, Auckland, New Zealand, (11/2015) Oral
- [10] A Solid-state Spin-Wave Optical Memory at the Single-Photon-Level, 21st Central European Workshop on Quantum Optics, **CEWQO**, Brussels, Belgium, (06/2014) Oral
- [11] Coupling Heralded Single Photons to a Solid-State Optical Memory, Quantum Information Processing and Communication International Conference, **QIPC**, Florence, Italy, (07/2013) Oral
- [12] Quantum Bit Storage in Atomic Frequency Comb Memories, 10th workshop on Continuous-Variable Quantum Information Processing **CVQIP 2013** and mid-term QSCALE-HIPERCOM meeting, Paris, France, (02/2013) Oral
- [13] Quantum Storage of Polarization Qubits in a Doped Solid, The 11th International Quantum Computation, Measurement and Communication conference, **QCMC**, Vienna, Austria, (07/2012) Poster
- [14] Time Correlated Photon Streams using Optical Rephasing and Cryogenic Rare Earth Ions, Third Annual **HOPE** Meeting, Tokyo, Japan, (03/2011) Poster
- [15] Time Correlated Photon Streams using Optical Rephasing and Cryogenic Rare Earth Ions, Conference on Lasers and Opto-Electronics, **CLEO**, Baltimore, Maryland, United States of America, (05/2011) Poster
- [16] Time Correlated Photons using Optical Rephasing Techniques and Rare Earth Ion Doped Solids, Quantum Information Processing In Rare-earth doped Solids, **QIP-REIDS**, Barcelona, Spain, (05/2011) Oral
- [17] Coherent Characterization of Amplified Spontaneous Emission, The 10th International Quantum Computation, Measurement and Communication conference, **QCMC**, The University of Queensland, Australia, (07/2010) Poster
- [18] Non-Classically Correlated Photon Streams using Rephased Amplified Spontaneous Emission, Australasian Conference on Optics, Lasers and Spectroscopy, **ACOLS**, The University of Adelaide, Australia, (12/2009) Oral

Conference Papers: Not peer-reviewed

- [19] Quantum Storage of a Photonic Polarization Qubit in a Doped-Crystal, Coherent Information Processing in Rare-Earth Ion Doped Solids **CIPRIS** annual meeting, Mainz, Germany, (06/2012) Oral
- [20] Quantum Correlations using Strong Optical Pulses in Rare Earth Ion Doped Crystals, Conference on Optics and Lasers Applications, **KOALA**, The University of Otago, New Zealand, (12/2010) Oral
- [21] Coherent Characterization of Amplified Spontaneous Emission, **Dodd-Walls Symposium**, Wellington, New Zealand, (01/2010) Oral

- [22] Non-Classically Correlated Photon Streams using Rephased Amplified Spontaneous Emission, Conference on Optics and Lasers Applications, **KOALA**, The University of Sydney, Australia, (11/2009) [Oral](#)
- [23] Coherent Characterization of the Two Pulse Photon Echo, **Dodd-Walls Symposium**, Queenstown, New Zealand, (12/2008) [Poster](#)
- [24] Coherent Characterization of the Two Pulse Photon Echo, Conference on Optics and Lasers Applications, **KOALA**, The University of Queensland, Australia, (11/2008) [Poster](#)