# Jeremy O Brien

## List of Publications by Year in Descending Order



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|---|---|---|---|
| 95 papers | 12,743 citations | 54 h-index | 112 g-index |
| 117 ext. papers | 15,920 ext. citations | 13.7 avg, IF | 6.38 L-index |

| # | Paper | IF | Citations |
|---|---|---|---|
| 95 | Topologically protected quantum entanglement emitters. *Nature Photonics*, **2022**, 16, 248-257 | 33.9 | 4 |
| 94 | A programmable qudit-based quantum processor.. *Nature Communications*, **2022**, 13, 1166 | 17.4 | 5 |
| 93 | Quantum Optical Metrology of Correlated Phase and Loss. *Physical Review Letters*, **2020**, 124, 140501 | 7.4 | 8 |
| 92 | Chip-to-chip quantum teleportation and multi-photon entanglement in silicon. *Nature Physics*, **2020**, 16, 148-153 | 16.2 | 77 |
| 91 | Multimode interferometry for entangling atoms in quantum networks. *Quantum Science and Technology*, **2019**, 4, 025008 | 5.5 | 2 |
| 90 | Multidimensional quantum entanglement with large-scale integrated optics. *Science*, **2018**, 360, 285-291 | 33.3 | 337 |
| 89 | Witnessing eigenstates for quantum simulation of Hamiltonian spectra. *Science Advances*, **2018**, 4, eaap9646 | 14.9 | 92 |
| 88 | Large-scale silicon quantum photonics implementing arbitrary two-qubit processing. *Nature Photonics*, **2018**, 12, 534-539 | 33.9 | 239 |
| 87 | Simulating the vibrational quantum dynamics of molecules using photonics. *Nature*, **2018**, 557, 660-667 | 50.4 | 93 |
| 86 | Quantum gambling based on Nash-equilibrium. *Npj Quantum Information*, **2017**, 3, | 8.6 | 5 |
| 85 | Experimental quantum Hamiltonian learning. *Nature Physics*, **2017**, 13, 551-555 | 16.2 | 87 |
| 84 | Experimental quantum hamiltonian learning using a silicon photonic chip and a nitrogen-vacancy electron spin in diamond **2017**, | | 3 |
| 83 | High-extinction ratio integrated photonic filters for silicon quantum photonics. *Optics Letters*, **2017**, 42, 815-818 | 3 | 48 |
| 82 | Modelling superconducting nanowire single photon detectors in a waveguide cavity. *Optics Express*, **2016**, 24, 8797-808 | 3.3 | 10 |
| 81 | Quantum Logic with Cavity Photons From Single Atoms. *Physical Review Letters*, **2016**, 117, 023602 | 7.4 | 7 |
| 80 | Towards practical quantum metrology with photon counting. *Npj Quantum Information*, **2016**, 2, | 8.6 | 46 |
| 79 | Silicon Quantum Photonics. *IEEE Journal of Selected Topics in Quantum Electronics*, **2016**, 22, 390-402 | 3.8 | 151 |

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| 78 | Chip-to-chip quantum photonic interconnect by path-polarization interconversion. *Optica*, **2016**, 3, 407 | 8.6 | 68 |
| 77 | Photon pair generation in hydrogenated amorphous silicon microring resonators. *Scientific Reports*, **2016**, 6, 38908 | 4.9 | 9 |
| 76 | Efficient quantum walk on a quantum processor. *Nature Communications*, **2016**, 7, 11511 | 17.4 | 40 |
| 75 | Testing randomness with photons by direct characterization of optical t-designs. *Physical Review A*, **2015**, 91, | 2.6 | 7 |
| 74 | QUANTUM OPTICS. Universal linear optics. *Science*, **2015**, 349, 711-6 | 33.3 | 504 |
| 73 | Continuous-variable entanglement on a chip. *Nature Photonics*, **2015**, 9, 316-319 | 33.9 | 73 |
| 72 | Effect of loss on multiplexed single-photon sources. *New Journal of Physics*, **2015**, 17, 043057 | 2.9 | 47 |
| 71 | Testing foundations of quantum mechanics with photons. *Nature Physics*, **2014**, 10, 278-286 | 16.2 | 52 |
| 70 | Reference-frame-independent quantum-key-distribution server with a telecom tether for an on-chip client. *Physical Review Letters*, **2014**, 112, 130501 | 7.4 | 56 |
| 69 | On-chip quantum interference between silicon photon-pair sources. *Nature Photonics*, **2014**, 8, 104-108 | 33.9 | 285 |
| 68 | A variational eigenvalue solver on a photonic quantum processor. *Nature Communications*, **2014**, 5, 4213 | 17.4 | 1030 |
| 67 | Quantum walks of correlated photon pairs in two-dimensional waveguide arrays. *Physical Review Letters*, **2014**, 112, 143604 | 7.4 | 82 |
| 66 | On the experimental verification of quantum complexity in linear optics. *Nature Photonics*, **2014**, 8, 621-626 | 33.9 | 138 |
| 65 | Fast electrical switching of orbital angular momentum modes using ultra-compact integrated vortex emitters. *Nature Communications*, **2014**, 5, 4856 | 17.4 | 121 |
| 64 | Boson sampling from a Gaussian state. *Physical Review Letters*, **2014**, 113, 100502 | 7.4 | 145 |
| 63 | Quantum key distribution with integrated optics **2014**, | | 2 |
| 62 | Gallium arsenide (GaAs) quantum photonic waveguide circuits. *Optics Communications*, **2014**, 327, 49-55 | 2 | 69 |
| 61 | On-chip manipulation of single photons from a diamond defect. *Physical Review Letters*, **2013**, 111, 213603 | 7.4 | 26 |

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| 60 | Two-photon quantum interference in integrated multi-mode interference devices. *Optics Express*, **2013**, 21, 23401-9 | 3.3 | 3 |
| 59 | Photon pair generation in a silicon micro-ring resonator with reverse bias enhancement. *Optics Express*, **2013**, 21, 27826-34 | 3.3 | 104 |
| 58 | Focus on integrated quantum optics. *New Journal of Physics*, **2013**, 15, 035016 | 2.9 | 12 |
| 57 | Observing fermionic statistics with photons in arbitrary processes. *Scientific Reports*, **2013**, 3, 1539 | 4.9 | 64 |
| 56 | Calculating unknown eigenvalues with a quantum algorithm. *Nature Photonics*, **2013**, 7, 223-228 | 33.9 | 34 |
| 55 | Experimental realization of Shor's quantum factoring algorithm using qubit recycling. *Nature Photonics*, **2012**, 6, 773-776 | 33.9 | 158 |
| 54 | A quantum delayed-choice experiment. *Science*, **2012**, 338, 634-7 | 33.3 | 158 |
| 53 | Solid immersion facilitates fluorescence microscopy with nanometer resolution and sub-Ångström emitter localization. *Advanced Materials*, **2012**, 24, OP309-13 | 24 | 94 |
| 52 | Integrated compact optical vortex beam emitters. *Science*, **2012**, 338, 363-6 | 33.3 | 561 |
| 51 | Fast path and polarization manipulation of telecom wavelength single photons in lithium niobate waveguide devices. *Physical Review Letters*, **2012**, 108, 053601 | 7.4 | 75 |
| 50 | Generating, manipulating and measuring entanglement and mixture with a reconfigurable photonic circuit. *Nature Photonics*, **2012**, 6, 45-49 | 33.9 | 174 |
| 49 | Observation of quantum interference as a function of Berry's phase in a complex Hadamard optical network. *Physical Review Letters*, **2012**, 108, 260505 | 7.4 | 9 |
| 48 | Measuring protein concentration with entangled photons. *Applied Physics Letters*, **2012**, 100, 233704 | 3.4 | 93 |
| 47 | Design and analysis of a gallium nitride-on-sapphire tunable photonic crystal directional coupler. *Journal of the Optical Society of America B: Optical Physics*, **2012**, 29, 1157 | 1.7 | 3 |
| 46 | Guaranteed violation of a Bell inequality without aligned reference frames or calibrated devices. *Scientific Reports*, **2012**, 2, 470 | 4.9 | 42 |
| 45 | Coherence properties of a single dipole emitter in diamond. *New Journal of Physics*, **2011**, 13, 055016 | 2.9 | 14 |
| 44 | Adding control to arbitrary unknown quantum operations. *Nature Communications*, **2011**, 2, 413 | 17.4 | 77 |
| 43 | Quantum interference in silicon waveguide circuits **2011**, | | 2 |

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| 42 | Reconfigurable controlled two-qubit operation on a quantum photonic chip. *New Journal of Physics*, **2011**, 13, 115009 | 2.9 | 11 |
| 41 | Heralding two-photon and four-photon path entanglement on a chip. *Physical Review Letters*, **2011**, 107, 163602 | 7.4 | 54 |
| 40 | Multimode quantum interference of photons in multiport integrated devices. *Nature Communications*, **2011**, 2, 224 | 17.4 | 112 |
| 39 | GaN directional couplers for integrated quantum photonics. *Applied Physics Letters*, **2011**, 99, 161119 | 3.4 | 46 |
| 38 | Nanofabricated solid immersion lenses registered to single emitters in diamond. *Applied Physics Letters*, **2011**, 98, 133107 | 3.4 | 77 |
| 37 | Violation of the Leggett-Garg inequality with weak measurements of photons. *Proceedings of the National Academy of Sciences of the United States of America*, **2011**, 108, 1256-61 | 11.5 | 197 |
| 36 | Realization of a Knill-Laflamme-Milburn controlled-NOT photonic quantum circuit combining effective optical nonlinearities. *Proceedings of the National Academy of Sciences of the United States of America*, **2011**, 108, 10067-71 | 11.5 | 55 |
| 35 | High-fidelity operation of quantum photonic circuits. *Applied Physics Letters*, **2010**, 97, 211109 | 3.4 | 60 |
| 34 | Strongly enhanced photon collection from diamond defect centers under microfabricated integrated solid immersion lenses. *Applied Physics Letters*, **2010**, 97, 241901 | 3.4 | 170 |
| 33 | Operating quantum waveguide circuits with superconducting single-photon detectors. *Applied Physics Letters*, **2010**, 96, 211101 | 3.4 | 34 |
| 32 | Quantum walks of correlated photons. *Science*, **2010**, 329, 1500-3 | 33.3 | 574 |
| 31 | Reference-frame-independent quantum key distribution. *Physical Review A*, **2010**, 82, | 2.6 | 119 |
| 30 | An entanglement filter. *Science*, **2009**, 323, 483-5 | 33.3 | 51 |
| 29 | Integrated Quantum Photonics. *IEEE Journal of Selected Topics in Quantum Electronics*, **2009**, 15, 1673-1684 | 3.8 | 103 |
| 28 | Photonic quantum technologies. *Nature Photonics*, **2009**, 3, 687-695 | 33.9 | 1288 |
| 27 | Manipulation of multiphoton entanglement in waveguide quantum circuits. *Nature Photonics*, **2009**, 3, 346-350 | 33.9 | 258 |
| 26 | Simplifying quantum logic using higher-dimensional Hilbert spaces. *Nature Physics*, **2009**, 5, 134-140 | 16.2 | 428 |
| 25 | Shor's quantum factoring algorithm on a photonic chip. *Science*, **2009**, 325, 1221 | 33.3 | 289 |

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| 24 | Laser written waveguide photonic quantum circuits. *Optics Express*, **2009**, 17, 12546-54 | 3.3 | 200 |
| 23 | All-optical-fiber polarization-based quantum logic gate. *Physical Review A*, **2009**, 79, | 2.6 | 46 |
| 22 | Experimental quantum process discrimination. *Physical Review Letters*, **2009**, 102, 160502 | 7.4 | 18 |
| 21 | A compiled version of Shor's quantum factoring algorithm on a waveguide chip **2009**, | | 1 |
| 20 | Silica-on-silicon waveguide quantum circuits. *Science*, **2008**, 320, 646-9 | 33.3 | 685 |
| 19 | Deterministic optical quantum computer using photonic modules. *Physical Review A*, **2008**, 78, | 2.6 | 37 |
| 18 | Beating the standard quantum limit: phase super-sensitivity ofN-photon interferometers. *New Journal of Physics*, **2008**, 10, 073033 | 2.9 | 66 |
| 17 | Entanglement-enhanced quantum key distribution. *Physical Review A*, **2008**, 78, | 2.6 | 15 |
| 16 | Photonic module: An on-demand resource for photonic entanglement. *Physical Review A*, **2007**, 76, | 2.6 | 58 |
| 15 | Nonclassical interference and entanglement generation using a photonic crystal fiber pair photon source. *Physical Review Letters*, **2007**, 99, 120501 | 7.4 | 130 |
| 14 | One-way quantum computation with four-dimensional photonic qudits. *Physical Review A*, **2007**, 76, | 2.6 | 15 |
| 13 | Time-reversal and super-resolving phase measurements. *Physical Review Letters*, **2007**, 98, 223601 | 7.4 | 179 |
| 12 | Entanglement generation by Fock-state filtration. *Physical Review Letters*, **2007**, 98, 203602 | 7.4 | 20 |
| 11 | Measuring two-qubit gates. *Journal of the Optical Society of America B: Optical Physics*, **2007**, 24, 172 | 1.7 | 91 |
| 10 | Physics. Precision without entanglement. *Science*, **2007**, 318, 1393-4 | 33.3 | 6 |
| 9 | Optical quantum computing. *Science*, **2007**, 318, 1567-70 | 33.3 | 552 |
| 8 | Beating the standard quantum limit with four-entangled photons. *Science*, **2007**, 316, 726-9 | 33.3 | 446 |
| 7 | Measurement of quantum weak values of photon polarization. *Physical Review Letters*, **2005**, 94, 220405 | 7.4 | 238 |

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| 6 | Demonstrating superior discrimination of locally prepared states using nonlocal measurements. *Physical Review Letters*, **2005**, 94, 220406 | 7.4 | 18 |
| 5 | Demonstration of a simple entangling optical gate and its use in bell-state analysis. *Physical Review Letters*, **2005**, 95, 210504 | 7.4 | 191 |
| 4 | Measuring a photonic qubit without destroying it. *Physical Review Letters*, **2004**, 92, 190402 | 7.4 | 105 |
| 3 | Towards the atomic-scale fabrication of a silicon-based solid state quantum computer. *Surface Science*, **2003**, 532-535, 1209-1218 | 1.8 | 23 |
| 2 | Scanning tunnelling microscope fabrication of arrays of phosphorus atom qubits for a silicon quantum computer. *Smart Materials and Structures*, **2002**, 11, 741-748 | 3.4 | 7 |
| 1 | L-K Treatment of the SdH Oscillations in the SDW state of Q1D Materials. *Synthetic Metals*, **1999**, 103, 2054-2055 | 3.6 | 1 |