Robert H Hadfield

List of Publications by Year
in descending order

146 papers	7,703 citations	71102 41 h-index	49909 87 g-index
148 all docs	148 docs citations	148 times ranked	6145 citing authors

#	Article	IF	Citations
1	Single-photon detectors for optical quantum information applications. Nature Photonics, 2009, 3, 696-705.	31.4	1,302
2	Superconducting nanowire single-photon detectors: physics and applications. Superconductor Science and Technology, 2012, 25, 063001.	3.5	731
3	Quantum key distribution over a 40-dB channel loss using superconducting single-photon detectors. Nature Photonics, 2007, 1, 343-348.	31.4	640
4	Quantum-dot spinâ€"photon entanglement via frequency downconversion to telecom wavelength. Nature, 2012, 491, 421-425.	27.8	423
5	On-chip quantum interference between silicon photon-pair sources. Nature Photonics, 2014, 8, 104-108.	31.4	407
6	Kilometer-range, high resolution depth imaging via 1560 nm wavelength single-photon detection. Optics Express, 2013, 21, 8904.	3.4	239
7	Chip-based quantum key distribution. Nature Communications, 2017, 8, 13984.	12.8	232
8	Single photon source characterization with a superconducting single photon detector. Optics Express, 2005, 13, 10846.	3.4	146
9	Photon pair generation in a silicon micro-ring resonator with reverse bias enhancement. Optics Express, 2013, 21, 27826.	3.4	137
10	Singlet oxygen luminescence detection with a fiber-coupled superconducting nanowire single-photon detector. Optics Express, 2013, 21, 5005.	3.4	125
11	Quantum key distribution at 1550nm with twin superconducting single-photon detectors. Applied Physics Letters, 2006, 89, 241129.	3.3	111
12	Photon-sparse microscopy: visible light imaging using infrared illumination. Optica, 2015, 2, 1049.	9.3	109
13	Chip-to-chip quantum photonic interconnect by path-polarization interconversion. Optica, 2016, 3, 407.	9.3	108
14	Subcentimeter depth resolution using a single-photon counting time-of-flight laser ranging system at 1550 nm wavelength. Optics Letters, 2007, 32, 2266.	3.3	105
15	Photon-number-discriminating detection using a quantum-dot, optically gated, field-effect transistor. Nature Photonics, 2007, 1, 585-588.	31.4	103
16	Large sensitive-area NbN nanowire superconducting single-photon detectors fabricated on single-crystal MgO substrates. Applied Physics Letters, 2008, 92, .	3.3	101
17	Enhanced telecom wavelength single-photon detection with NbTiN superconducting nanowires on oxidized silicon. Applied Physics Letters, 2010, 96, .	3.3	99
18	Gallium arsenide (GaAs) quantum photonic waveguide circuits. Optics Communications, 2014, 327, 49-55.	2.1	98

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19	Fast Path and Polarization Manipulation of Telecom Wavelength Single Photons in Lithium Niobate Waveguide Devices. Physical Review Letters, 2012, 108, 053601.	7.8	87
20	Long-distance entanglement-based quantum key distribution over optical fiber. Optics Express, 2008, 16, 19118.	3.4	82
21	High-resolution single-mode fiber-optic distributed Raman sensor for absolute temperature measurement using superconducting nanowire single-photon detectors. Applied Physics Letters, 2011, 99, .	3.3	82
22	Demonstration of a Quantum Controlled-NOT Gate in the Telecommunications Band. Physical Review Letters, 2008, 100, 133603.	7.8	77
23	Space-quest, experiments with quantum entanglement in space. Europhysics News, 2009, 40, 26-29.	0.3	77
24	Fast lifetime measurements of infrared emitters using a low-jitter superconducting single-photon detector. Applied Physics Letters, 2006, 89, 031109.	3.3	76
25	High-extinction ratio integrated photonic filters for silicon quantum photonics. Optics Letters, 2017, 42, 815.	3.3	72
26	Quantum interference and manipulation of entanglement in silicon wire waveguide quantum circuits. New Journal of Physics, 2012, 14, 045003.	2.9	71
27	Generation of degenerate, factorizable, pulsed squeezed light at telecom wavelengths. Optics Express, 2011, 19, 24434.	3.4	68
28	Fabrication of nanoscale heterostructure devices with a focused ion beam microscope. Nanotechnology, 2003, 14, 630-632.	2.6	63
29	Practical long-distance quantum key distribution system using decoy levels. New Journal of Physics, 2009, 11, 045009.	2.9	63
30	Generation of correlated photon pairs in a chalcogenide As2S3 waveguide. Applied Physics Letters, 2011, 98, .	3.3	62
31	Photon counting LIDAR at 23Âµm wavelength with superconducting nanowires. Optics Express, 2019, 27, 38147.	3.4	62
32	Quantum detector tomography of a time-multiplexed superconducting nanowire single-photon detector at telecom wavelengths. Optics Express, 2013, 21, 893.	3.4	58
33	Downconversion quantum interface for a single quantum dot spin and 1550-nm single-photon channel. Optics Express, 2012, 20, 27510.	3.4	57
34	Solid immersion lens applications for nanophotonic devices. Journal of Nanophotonics, 2008, 2, 021854.	1.0	55
35	Position controlled nanowires for infrared single photon emission. Applied Physics Letters, 2010, 97, .	3.3	55
36	Single-photon detection using a quantum dot optically gated field-effect transistor with high internal quantum efficiency. Applied Physics Letters, 2006, 89, 253505.	3.3	52

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37	Low-frequency phase locking in high-inductance superconducting nanowires. Applied Physics Letters, 2005, 87, 203505.	3.3	48
38	Linewidth narrowing and Purcell enhancement in photonic crystal cavities on an Er-doped silicon nitride platform. Optics Express, 2010, 18, 2601.	3.4	45
39	Characterisation of amorphous molybdenum silicide (MoSi) superconducting thin films and nanowires. Superconductor Science and Technology, 2017, 30, 084010.	3.5	45
40	Operating quantum waveguide circuits with superconducting single-photon detectors. Applied Physics Letters, 2010, 96, 211101.	3.3	42
41	Two-photon quantum interference and entanglement at 2.1 Î¼m. Science Advances, 2020, 6, eaay5195.	10.3	42
42	Gigahertz bandwidth electrical control over a dark exciton-based memory bit in a single quantum dot. Applied Physics Letters, 2009, 94, .	3.3	41
43	Analysis of a distributed fiber-optic temperature sensor using single-photon detectors. Optics Express, 2012, 20, 3456.	3.4	41
44	Optical properties of refractory metal based thin films. Optical Materials Express, 2018, 8, 2072.	3.0	41
45	Optimised quantum hacking of superconducting nanowire single-photon detectors. Optics Express, 2014, 22, 6734.	3.4	39
46	A superconducting nanowire single photon detector on lithium niobate. Nanotechnology, 2012, 23, 505201.	2.6	38
47	Characterization of fiber-generated entangled photon pairs with superconducting single-photon detectors. Optics Express, 2007, 15, 1322.	3.4	37
48	Space QUEST mission proposal: experimentally testing decoherence due to gravity. New Journal of Physics, 2018, 20, 063016.	2.9	36
49	Spatial dependence of output pulse delay in a niobium nitride nanowire superconducting single-photon detector. Applied Physics Letters, 2011, 98, 201116.	3.3	34
50	Complete tomography of a high-fidelity solid-state entangled spinâ€“photon qubit pair. Nature Communications, 2013, 4, 2228.	12.8	31
51	Two-photon interference at telecom wavelengths for time-bin-encoded single photons from quantum-dot spin qubits. Nature Communications, 2015, 6, 8955.	12.8	31
52	Submicrometer photoresponse mapping of nanowire superconducting single-photon detectors. Applied Physics Letters, 2007, 91, .	3.3	29
53	Nano-optical single-photon response mapping of waveguide integrated molybdenum silicide (MoSi) superconducting nanowires. Optics Express, 2016, 24, 13931.	3.4	29
54	A miniaturized 4 K platform for superconducting infrared photon counting detectors. Superconductor Science and Technology, 2017, 30, 11LT01.	3.5	29

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55	Silicon photonic processor of two-qubit entangling quantum logic. Journal of Optics (United) Tj ETQq1 1 0.784314 rgBT /Overlock 10 Tf	2.2	29
56	Single-photon source characterization with twin infrared-sensitive superconducting single-photon detectors. Journal of Applied Physics, 2007, 101, 103104.	2.5	28
57	Nanoantenna Enhancement for Telecom-Wavelength Superconducting Single Photon Detectors. Nano Letters, 2015, 15, 819-822.	9.1	28
58	Niobium diselenide superconducting photodetectors. Applied Physics Letters, 2019, 114, .	3.3	28
59	Correlated photon-pair generation in a periodically poled MgO doped stoichiometric lithium tantalate reverse proton exchanged waveguide. Applied Physics Letters, 2011, 99, .	3.3	27
60	Analysis of detector performance in a gigahertz clock rate quantum key distribution system. New Journal of Physics, 2011, 13, 075008.	2.9	27
61	A Comparison of Singlet Oxygen Explicit Dosimetry (SOED) and Singlet Oxygen Luminescence Dosimetry (SOLD) for Photofrin-Mediated Photodynamic Therapy. Cancers, 2016, 8, 109.	3.7	23
62	A compact fiberâ€optic probeâ€based singlet oxygen luminescence detection system. Journal of Biophotonics, 2017, 10, 320-326.	2.3	22
63	Superconducting nanowire single-photon detectors with non-periodic dielectric multilayers. Scientific Reports, 2016, 6, 35240.	3.3	20
64	Strong magnonâ€"photon coupling with chip-integrated YIG in the zero-temperature limit. Applied Physics Letters, 2021, 119, .	3.3	20
65	Superconducting photon detectors. Contemporary Physics, 2021, 62, 69-91.	1.8	20
66	Heralding of telecommunication photon pairs with a superconducting single photon detector. Applied Physics Letters, 2006, 89, 031112.	3.3	19
67	Resonance fluorescence from a telecom-wavelength quantum dot. Applied Physics Letters, 2016, 109, .	3.3	17
68	Superconducting coincidence photon detector with short timing jitter. Applied Physics Letters, 2018, 112, .	3.3	17
69	Operational Analysis of a Quantum Dot Optically Gated Field-Effect Transistor as a Single-Photon Detector. IEEE Journal of Selected Topics in Quantum Electronics, 2007, 13, 967-977.	2.9	14
70	Investigations of afterpulsing and detection efficiency recovery in superconducting nanowire single-photon detectors. Journal of Applied Physics, 2013, 113, 213102.	2.5	14
71	Current distribution in a parallel configuration superconducting strip-line detector. Applied Physics Letters, 2013, 103, .	3.3	14
72	Nano-optical observation of cascade switching in a parallel superconducting nanowire single photon detector. Applied Physics Letters, 2014, 104, .	3.3	12

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73	Amorphous molybdenum silicon superconducting thin films. AIP Advances, 2015, 5, .	1.3	12
74	Infrared single-photon sensitivity in atomic layer deposited superconducting nanowires. Applied Physics Letters, 2021, 118, 191106.	3.3	12
75	Nanoscale SNS junction fabrication in superconductor-normal metal bilayers. IEEE Transactions on Applied Superconductivity, 2001, 11, 1126-1129.	1.7	11
76	Capacitance as a probe of high angle grain boundary transport in oxide superconductors. IEEE Transactions on Applied Superconductivity, 2001, 11, 418-421.	1.7	11
77	A superconducting antenna-coupled microbolometer for THz applications. , 2004, , .		10
78	Quantum Dot Single Photon Sources Studied with Superconducting Single Photon Detectors. IEEE Journal of Selected Topics in Quantum Electronics, 2006, 12, 1255-1268.	2.9	9
79	Nano-optical photoresponse mapping of superconducting nanowires with enhanced near infrared absorption. Superconductor Science and Technology, 2018, 31, 125012.	3.5	9
80	Designing high electron mobility transistor heterostructures with quantum dots for efficient, number-resolving photon detection. Journal of Vacuum Science & Technology B, 2008, 26, 1174.	1.3	8
81	Commentary: New developments in single photon detection in the short wavelength infrared regime. Journal of Nanophotonics, 2010, 4, 040301.	1.0	8
82	Experimental evidence of photoinduced vortex crossing in current carrying superconducting strips. Physical Review B, 2015, 92, .	3.2	8
83	Enhanced Optics for Time-Resolved Singlet Oxygen Luminescence Detection. IEEE Journal of Selected Topics in Quantum Electronics, 2019, 25, 1-7.	2.9	8
84	Superfast photon counting. Nature Photonics, 2020, 14, 201-202.	31.4	8
85	Corbino geometry Josephson junction. Physical Review B, 2003, 67, .	3.2	7
86	Josephson junctions with hysteretic current voltage characteristics at high temperatures. IEEE Transactions on Applied Superconductivity, 1999, 9, 3468-3471.	1.7	6
87	Infrared wavelength-dependent optical characterization of NbN nanowire superconducting single-photon detectors. Journal of Modern Optics, 2009, 56, 358-363.	1.3	6
88	Analysis of Excitability in Resonant Tunneling Diode-Photodetectors. Nanomaterials, 2021, 11, 1590.	4.1	6
89	Parallel superconducting strip-line detectors: reset behaviour in the single-strip switch regime. Superconductor Science and Technology, 2014, 27, 044029.	3.5	6
90	Nanofabricated SNS junction series arrays in superconductor-normal metal bilayers. Superconductor Science and Technology, 2001, 14, 1086-1089.	3.5	5

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91	Asymmetry modulated SQUIDs made by direct focused ion beam milling. Physica C: Superconductivity and Its Applications, 2002, 368, 241-245.	1.2	4
92	Nanoscale superconductorâ€“normal metalâ€“superconductor junctions fabricated by focused ion beam. Physica C: Superconductivity and Its Applications, 2002, 372-376, 14-17.	1.2	4
93	Fast electro-optics of a single self-assembled quantum dot in a charge-tunable device. Journal of Applied Physics, 2012, 111, 043112.	2.5	4
94	A feasibility study of singlet oxygen explicit dosmietry (SOED) of PDT by intercomparison with a singlet oxygen luminescence dosimetry (SOLD) system. , 2016, 9694, .		4
95	Design and Characterisation of Titanium Nitride Subarrays of Kinetic Inductance Detectors for Passive Terahertz Imaging. Journal of Low Temperature Physics, 2018, 193, 196-202.	1.4	4
96	A compact 4 K cooling system for superconducting nanowire single photon detectors. IOP Conference Series: Materials Science and Engineering, 2019, 502, 012193.	0.6	4
97	Long Distance Quantum Key Distribution in Optical Fiber. , 2008, , .		3
98	Biexciton cascade in telecommunication wavelength quantum dots. Journal of Physics: Conference Series, 2010, 210, 012036.	0.4	3
99	A tunable fiber-coupled optical cavity for agile enhancement of detector absorption. Journal of Applied Physics, 2016, 120, .	2.5	3
100	Integrated Joule switches for the control of current dynamics in parallel superconducting strips. Superconductor Science and Technology, 2018, 31, 06LT01.	3.5	3
101	Near-Maximal Two-Photon Entanglement for Optical Quantum Communication at <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" overflow="scroll"><mml:mn>2.1</mml:mn><mml:mspace width="0.2em" /><mml:mi>Î¼</mml:mi><mml:mi mathvariant="normal">m</mml:mi></mml:math>. Physical Review Applied, 2021, 16, .	3.8	3
102	Time-correlated single-photon counting with superconducting single-photon detectors. , 2006, , .		2
103	Publisherâ€™s Note: Demonstration of a Quantum Controlled-NOT Gate in the Telecommunications Band [Phys. Rev. Lett.100, 133603 (2008)]. Physical Review Letters, 2008, 100, .	7.8	2
104	High Spatial Resolution Distributed Fiber Sensor Using Raman Scattering in Single-Mode Fiber. , 2010, , .		2
105	Quantum interference in silicon waveguide circuits. , 2011, , .		2
106	Depth imaging at kilometer range using time-correlated single-photon counting at wavelengths of 850 nm and 1560 nm. , 2012, , .		2
107	Superconducting Nanowire Single-Photon Detectors for Quantum Communication Applications. Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering, 2010, , 225-232.	0.3	2
108	Single photon detector comparison in a quantum key distribution test. , 2006, , .		1

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109	Nano-optical studies of superconducting nanowire single-photon detectors. Proceedings of SPIE, 2009, , .	0.8	1
110	Kilometer range depth imaging using time-correlated single-photon counting. , 2011, , .		1
111	Chip-to-chip quantum entanglement distribution. , 2015, , .		1
112	Timing Jitter Characterization of the SFQ Coincidence Circuit by Optically Time-Controlled Signals From SSPDs. IEEE Transactions on Applied Superconductivity, 2019, 29, 1-4.	1.7	1
113	2.3Î¼m wavelength single photon LIDAR with superconducting nanowire detectors. , 2019, , .		1
114	Singlet Oxygen luminescence detection with a fiber-coupled superconducting nanowire single-photon detector. , 2013, , .		1
115	Passive High-Extinction Integrated Photonic Filters for Silicon Quantum Photonics. , 2016, , .		1
116	Long-range depth imaging with 13ps temporal resolution using a superconducting nanowire singlephoton detector. , 2020, , .		1
117	Antenna Coupled Niobium Bolometers for 10<tex>$murm m$</tex>Wavelength Radiation Detection. IEEE Transactions on Applied Superconductivity, 2005, 15, 541-544.	1.7	0
118	A superconducting nanowire single-photon detector system for single-photon source characterization. , 2010, , .		0
119	Nano-Optical Studies of Superconducting Nanowire Single Photon Detectors. Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering, 2010, , 158-166.	0.3	0
120	An Analysis of Single-Photon Detectors in an Environmentally Robust GigaHertz Clock Rate Quantum Key Distribution System. , 2011, , .		0
121	Characterization of high-purity, pulsed squeezed light at telecom wavelengths from pp-KTP for quantum information applications. , 2011, , .		0
122	Single-photon detection in time-of-flight-depth imaging and quantum key distribution. Proceedings of SPIE, 2011, , .	0.8	0
123	Single-photon counting imaging systems. , 2011, , .		0
124	Silicon Quantum Photonic Sources and Circuits. , 2012, , .		0
125	Single spins in semiconductor quantum dot microcavities. , 2013, , .		0
126	Infrared photon counting with superconducting nanowire single-photon detectors. , 2013, , .		0

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127	Singlet oxygen luminescence detection with a fibre-coupled superconducting nanowire single-photon detector. , 2013, , .		0
128	Kilometre-range, high resolution depth imaging using 1560 nm wavelength single-photon detection. , 2013, , .		0
129	Monolithic generation and manipulation of nondegenerate photon pairs within a silicon-on-insulator quantum photonic circuit. , 2013, , .		0
130	Photon pair generation and manipulation in an integrated silicon chip. , 2013, , .		0
131	Ultrafast optical control of individual electron and hole spin qubits: entanglement between a single quantum dot electron spin and a downconverted 1560-nm single photon. Proceedings of SPIE, 2013, , .	0.8	0
132	Integrated Photonic Devices for Quantum Key Distribution. , 2015, , .		0
133	Photon-sparse microscopy: Trans-wavelength ghost imaging. Proceedings of SPIE, 2016, , .	0.8	0
134	Integration of Molybdenum Silicide Superconducting Nanowires with Quantum Photonic Circuits for On-Chip Single Photon Detection. , 2017, , .		0
135	Modelling of a Two-Signal SFQ Detection Scheme for the Readout of Superconducting Nanowire Single Photon Detectors. , 2017, , .		0
136	Photon Pair Generation at 2.080Î¼m by Down-Conversion. , 2019, , .		0
137	Generation and characterization of two-photon entanglement in the mid infrared. , 2021, , .		0
138	Ultrafast downconversion quantum interface for a single quantum dot spin and 1550-nm single-photon channel. , 2013, , .		0
139	Background-free Quantum Frequency Downconversion for Two-photon Interference of Heterogeneous Photon Sources. , 2015, , .		0
140	Entanglement distribution between integrated silicon photonic chips. , 2015, , .		0
141	A Compact Fiber Optic Based Singlet Oxygen Luminescence Sensor. , 2016, , .		0
142	Comparison of Photon Pair Generation in a-Si:H and c-Si Microring Resonators. , 2016, , .		0
143	A Compact Fiber Optic Based Singlet Oxygen Luminescence Sensor. , 2016, , .		0
144	Near-maximal Polarization Entanglement for Quantum Communications at 2.1 Âµm. , 2021, , .		0

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145	Measurement of Near-maximal Polarization Entanglement at 2.1 Î¼ m. , 2021, , .		0
146	Viewpoint: Compact cryogenics for superconducting photon detectors. Superconductor Science and Technology, 0, , .	3.5	0