Jacob M Taylor

List of Publications by Year
in descending order

155	19,278	31976	11607
papers	citations	53 h-index	135 g-index

157	157	157	11355
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Coherent Manipulation of Coupled Electron Spins in Semiconductor Quantum Dots. Science, 2005, 309, 2180-2184.	12.6	2,674
2	Nanoscale magnetic sensing with an individual electronic spin in diamond. Nature, 2008, 455, 644-647.	27.8	1,554
3	High-sensitivity diamond magnetometer with nanoscale resolution. Nature Physics, 2008, 4, 810-816.	16.7	1,409
4	Imaging topological edge states in silicon photonics. Nature Photonics, 2013, 7, 1001-1005.	31.4	1,264
5	Robust optical delay lines with topological protection. Nature Physics, 2011, 7, 907-912.	16.7	1,110
6	Coherent Dynamics of Coupled Electron and Nuclear Spin Qubits in Diamond. Science, 2006, 314, 281-285.	12.6	1,030
7	Tripletâ€“singlet spin relaxation via nuclei in a double quantum dot. Nature, 2005, 435, 925-928.	27.8	458
8	Resonantly driven CNOT gate for electron spins. Science, 2018, 359, 439-442.	12.6	407
9	Circuit quantum electrodynamics with a spin qubit. Nature, 2012, 490, 380-383.	27.8	384
10	Optical detection of radio waves through a nanomechanical transducer. Nature, 2014, 507, 81-85.	27.8	382
11	Fault-tolerant architecture for quantum computation using electrically controlled semiconductor spins. Nature Physics, 2005, 1, 177-183.	16.7	357
12	Tunable Nonlocal Spin Control in a Coupled-Quantum Dot System. Science, 2004, 304, 565-567.	12.6	320
13	Relaxation, dephasing, and quantum control of electron spins in double quantum dots. Physical Review B, 2007, 76, .	3.2	302
14	Fault-Tolerant Quantum Communication Based on Solid-State Photon Emitters. Physical Review Letters, 2006, 96, 070504.	7.8	297
15	A coherent spinâ€“photon interface in silicon. Nature, 2018, 555, 599-603.	27.8	296
16	Repetitive Readout of a Single Electronic Spin via Quantum Logic with Nuclear Spin Ancillae. Science, 2009, 326, 267-272.	12.6	277
17	Quantum-Enhanced Machine Learning. Physical Review Letters, 2016, 117, 130501.	7.8	250
18	Fault-tolerant quantum repeaters with minimal physical resources and implementations based on single-photon emitters. Physical Review A, 2005, 72, .	2.5	239

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19	Long-Lived Memory for Mesoscopic Quantum Bits. Physical Review Letters, 2003, 90, 206803.	7.8	231
20	Suppressing Spin Qubit Dephasing by Nuclear State Preparation. Science, 2008, 321, 817-821.	12.6	229
21	Quantum repeater with encoding. Physical Review A, 2009, 79, .	2.5	224
22	Coupling Nitrogen-Vacancy Centers in Diamond to Superconducting Flux Qubits. Physical Review Letters, 2010, 105, 210501.	7.8	215
23	Topologically Robust Transport of Photons in a Synthetic Gauge Field. Physical Review Letters, 2014, 113, 087403.	7.8	214
24	Self-consistent measurement and state tomography of an exchange-only spin qubit. Nature Nanotechnology, 2013, 8, 654-659.	31.5	204
25	Coherent spin manipulation in an exchange-only qubit. Physical Review B, 2010, 82, .	3.2	203
26	Quantum-Dot-Based Resonant Exchange Qubit. Physical Review Letters, 2013, 111, 050501.	7.8	202
27	Atomic Three-Body Loss as a Dynamical Three-Body Interaction. Physical Review Letters, 2009, 102, 040402.	7.8	200
28	Distributed quantum computation based on small quantum registers. Physical Review A, 2007, 76, .	2.5	188
29	Electron spin decoherence of single nitrogen-vacancy defects in diamond. Physical Review B, 2008, 78, .	3.2	168
30	Dynamic Nuclear Polarization with Single Electron Spins. Physical Review Letters, 2008, 100, 067601.	7.8	118
31	Ultra-sensitive chip-based photonic temperature sensor using ring resonator structures. Optics Express, 2014, 22, 3098.	3.4	118
32	Quantum correlations from a room-temperature optomechanical cavity. Science, 2017, 356, 1265-1268.	12.6	116
33	Semiconductor double quantum dot micromaser. Science, 2015, 347, 285-287.	12.6	115
34	Photon Emission from a Cavity-Coupled Double Quantum Dot. Physical Review Letters, 2014, 113, 036801.	7.8	110
35	A classical channel model for gravitational decoherence. New Journal of Physics, 2014, 16, 065020.	2.9	106
36	Fast and robust approach to long-distance quantum communication with atomic ensembles. Physical Review A, 2007, 76, .	2.5	104

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37	High sensitivity optomechanical reference accelerometer over 10 kHz. Applied Physics Letters, 2014, 104, .	3.3	102
38	Tabletop experiments for quantum gravity: a userâ€™s manual. Classical and Quantum Gravity, 2019, 36, 034001.	4.0	101
39	Controlling a Mesoscopic Spin Environment by Quantum Bit Manipulation. Physical Review Letters, 2003, 91, 246802.	7.8	99
40	Measurement of Temporal Correlations of the Overhauser Field in a Double Quantum Dot. Physical Review Letters, 2008, 101, 236803.	7.8	95
41	Atomic interface between microwave and optical photons. Physical Review A, 2012, 85, .	2.5	90
42	Electrically Protected Resonant Exchange Qubits in Triple Quantum Dots. Physical Review Letters, 2013, 111, 050502.	7.8	87
43	Non-equilibrium fractional quantum Hall state of light. New Journal of Physics, 2013, 15, 063001.	2.9	82
44	High-fidelity quantum gates in Si/SiGe double quantum dots. Physical Review B, 2018, 97, .	3.2	73
45	Quantum measurement of a mesoscopic spin ensemble. Physical Review A, 2006, 74, .	2.5	71
46	Environment-assisted quantum control of a solid-state spin via coherent dark states. Nature Physics, 2014, 10, 725-730.	16.7	71
47	Laser Cooling and Optical Detection of Excitations in aLCElectrical Circuit. Physical Review Letters, 2011, 107, 273601.	7.8	68
48	Mechanical quantum sensing in the search for dark matter. Quantum Science and Technology, 2021, 6, 024002.	5.8	67
49	Quantum computing at the frontiers of biological sciences. Nature Methods, 2021, 18, 701-709.	19.0	64
50	Input-output theory for spin-photon coupling in Si double quantum dots. Physical Review B, 2017, 96, .	3.2	62
51	Squeezing in a coupled two-mode optomechanical system for force sensing below the standard quantum limit. Physical Review A, 2014, 90, .	2.5	58
52	Equilibrium states of open quantum systems in the strong coupling regime. Physical Review E, 2012, 86, 061132.	2.1	57
53	Solid-State Circuit for Spin Entanglement Generation and Purification. Physical Review Letters, 2005, 94, 236803.	7.8	54
54	Optimal approach to quantum communication using dynamic programming. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 17291-17296.	7.1	53

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55	Machine learning techniques for state recognition and auto-tuning in quantum dots. Npj Quantum Information, 2019, 5, .	6.7	53
56	Chemical potential for light by parametric coupling. Physical Review B, 2015, 92, .	3.2	52
57	Coherence of an Optically Illuminated Single Nuclear Spin Qubit. Physical Review Letters, 2008, 100, 073001.	7.8	51
58	Faster Digital Quantum Simulation by Symmetry Protection. PRX Quantum, 2021, 2, .	9.2	50
59	Helium White Dwarfs and BY Draconis Binaries in the Globular Cluster NGC 6397. Astrophysical Journal, 2001, 553, L169-L172.	4.5	50
60	Dynamic Nuclear Polarization in Double Quantum Dots. Physical Review Letters, 2010, 104, 226807.	7.8	47
61	Using an Atom Interferometer to Infer Gravitational Entanglement Generation. PRX Quantum, 2021, 2, .	9.2	46
62	Coupling artificial molecular spin states by photon-assisted tunnelling. Nature Communications, 2011, 2, 556.	12.8	45
63	Nanoscale Optical Electrometer. Physical Review Letters, 2011, 107, 166802.	7.8	45
64	Trapping atoms using nanoscale quantum vacuum forces. Nature Communications, 2014, 5, 4343.	12.8	44
65	Optomechanical reference accelerometer. Metrologia, 2015, 52, 654-665.	1.2	42
66	Phonon-Assisted Gain in a Semiconductor Double Quantum Dot Maser. Physical Review Letters, 2015, 114, 196802.	7.8	42
67	Tunable Spin-Qubit Coupling Mediated by a Multielectron Quantum Dot. Physical Review Letters, 2015, 114, 226803.	7.8	41
68	Entangling distant resonant exchange qubits via circuit quantum electrodynamics. Physical Review B, 2016, 94, .	3.2	41
69	Engineering three-body interaction and Pfaffian states in circuit QED systems. Physical Review B, 2014, 90, .	3.2	40
70	Qubit Protection in Nuclear-Spin Quantum Dot Memories. Physical Review Letters, 2009, 103, 010502.	7.8	38
71	Exchange Control of Nuclear Spin Diffusion in a Double Quantum Dot. Physical Review Letters, 2010, 104, 236802.	7.8	38
72	Autotuning of Double-Dot Devices In Situ with Machine Learning. Physical Review Applied, 2020, 13, .	3.8	38

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73	Beyond spontaneous emission: Giant atom bounded in the continuum. Physical Review A, 2020, 102, .	2.5	37
74	Simultaneous Spin-Charge Relaxation in Double Quantum Dots. Physical Review Letters, 2013, 110, 196803.	7.8	35
75	Wigner crystals of ions as quantum hard drives. Physical Review A, 2008, 78, .	2.5	34
76	Single-layer graphene on silicon nitride micromembrane resonators. Journal of Applied Physics, 2014, 115, 054513.	2.5	33
77	Bounds on quantum communication via Newtonian gravity. New Journal of Physics, 2015, 17, 015006.	2.9	33
78	Variational calculations on the hydrogen molecular ion. Molecular Physics, 1999, 97, 25-33.	1.7	32
79	Quantum nonlinear optics near optomechanical instabilities. Physical Review A, 2015, 91, .	2.5	31
80	The U.S. National Quantum Initiative: From Act to action. Science, 2019, 364, 440-442.	12.6	31
81	Proposal for gravitational direct detection of dark matter. Physical Review D, 2020, 102, .	4.7	31
82	Quantum Interface between an Electrical Circuit and a Single Atom. Physical Review Letters, 2012, 108, 130504.	7.8	30
83	Figures of merit for quantum transducers. Quantum Science and Technology, 2020, 5, 034009.	5.8	30
84	Dynamically induced robust phonon transport and chiral cooling in an optomechanical system. Nature Communications, 2017, 8, 205.	12.8	28
85	Dipole polarizability of the hydrogen molecular ion. Physical Review A, 1999, 60, R2630-R2632.	2.5	27
86	Observation of optomechanical buckling transitions. Nature Communications, 2017, 8, 14481.	12.8	26
87	From membraneâ€inâ€theâ€middle to mirrorâ€inâ€theâ€middle with a highâ€reflectivity subâ€wavelength grating. Annalen Der Physik, 2015, 527, 81-88.	2.4	25
88	Threshold Dynamics of a Semiconductor Single Atom Maser. Physical Review Letters, 2017, 119, 097702.	7.8	25
89	Dephasing of Quantum Bits by a Quasi-Static Mesoscopic Environment. Quantum Information Processing, 2006, 5, 503-536.	2.2	24
90	Efimov States of Strongly Interacting Photons. Physical Review Letters, 2017, 119, 233601.	7.8	24

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91	Cooling a Harmonic Oscillator by Optomechanical Modification of Its Bath. Physical Review Letters, 2017, 118, 223602.	7.8	22
92	Electro-mechano-optical detection of nuclear magnetic resonance. Optica, 2018, 5, 152.	9.3	22
93	Long-lived memory for electronic spin in a quantum dot: Numerical analysis. Physical Review B, 2006, 73, .	3.2	21
94	Single-photon transistor based on superconducting systems. Physical Review B, 2014, 89, .	3.2	20
95	Serialized quantum error correction protocol for high-bandwidth quantum repeaters. New Journal of Physics, 2016, 18, 093008.	2.9	20
96	Interacting Atomic Interferometry for Rotation Sensing Approaching the Heisenberg Limit. Physical Review Letters, 2016, 117, 203002.	7.8	20
97	Injection locking of a semiconductor double-quantum-dot micromaser. Physical Review A, 2015, 92, .	2.5	18
98	Nonlinear Optics Quantum Computing with Circuit QED. Physical Review Letters, 2013, 110, 060503.	7.8	17
99	Capacitively coupled singlet-triplet qubits in the double charge resonant regime. Physical Review B, 2015, 92, .	3.2	17
100	QFlow lite dataset: A machine-learning approach to the charge states in quantum dot experiments. PLoS ONE, 2018, 13, e0205844.	2.5	17
101	An autonomous single-piston engine with a quantum rotor. Quantum Science and Technology, 2018, 3, 035008.	5.8	17
102	Dynamic suppression of Rayleigh backscattering in dielectric resonators. Optica, 2019, 6, 1016.	9.3	17
103	Coherent optical manipulation of triplet-singlet states in coupled quantum dots. Physical Review B, 2007, 75, .	3.2	16
104	Thin-film superconducting resonator tunable to the ground-state hyperfine splitting of 87Rb. AIP Advances, 2011, 1, .	1.3	15
105	Preparation of nonequilibrium nuclear spin states in double quantum dots. Physical Review B, 2013, 88, .	3.2	14
106	Sisyphus Thermalization of Photons in a Cavity-Coupled Double Quantum Dot. Physical Review Letters, 2016, 117, 056801.	7.8	14
107	Topological physics with light. Physics Today, 2014, 67, 68-69.	0.3	13
108	Scanning Localized Magnetic Fields in a Microfluidic Device with a Single Nitrogen Vacancy Center. Nano Letters, 2015, 15, 1481-1486.	9.1	12

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109	Probing electron-phonon interactions in the charge-photon dynamics of cavity-coupled double quantum dots. Physical Review B, 2018, 97, .	3.2	12
110	Spin-Photon Entangling Diode. Physical Review Letters, 2007, 98, 240501.	7.8	11
111	Electrooptomechanical Equivalent Circuits for Quantum Transduction. Physical Review Applied, 2018, 10, .	3.8	11
112	Trapped Electrons and Ions as Particle Detectors. Physical Review Letters, 2021, 127, 061804.	7.8	11
113	Fast and robust quantum computation with ionic Wigner crystals. Physical Review A, 2011, 83, .	2.5	10
114	Interferometry with synthetic gauge fields. Physical Review A, 2011, 83, .	2.5	10
115	Optical control of donor spin qubits in silicon. Physical Review B, 2015, 92, .	3.2	9
116	Backaction-evading impulse measurement with mechanical quantum sensors. Physical Review A, 2020, 102, .	2.5	9
117	Ray-Based Framework for State Identification in Quantum Dot Devices. PRX Quantum, 2021, 2, .	9.2	9
118	Optimal two-qubit circuits for universal fault-tolerant quantum computation. Npj Quantum Information, 2021, 7, .	6.7	9
119	Landauer formulation of photon transport in driven systems. Physical Review B, 2016, 94, .	3.2	8
120	Circuit-QED-based measurement of vortex lattice order in a Josephson junction array. Physical Review B, 2018, 98, .	3.2	8
121	An optomechanical accelerometer with a high-finesse hemispherical optical cavity. , 2016, , .		7
122	High-order multipole radiation from quantum Hall states in Dirac materials. Physical Review B, 2017, 95, .	3.2	7
123	Probing XY phase transitions in a Josephson junction array with tunable frustration. Physical Review B, 2020, 102, .	3.2	6
124	Unified approach to topological quantum computation with anyons: From qubit encoding to Toffoli gate. Physical Review A, 2011, 84, .	2.5	5
125	Photonic temperature sensor based on microring resonators. , 2013, , .		4
126	Quantum leaps in the solid state. Nature, 2010, 467, 278-279.	27.8	3

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127	SCALABLE QUANTUM NETWORKS BASED ON FEW-QUBIT REGISTERS. International Journal of Quantum Information, 2010, 08, 93-104.	1.1	3
128	Theory of Bose condensation of light via laser cooling of atoms. Physical Review A, 2019, 99, .	2.5	3
129	Circulation by Microwave-Induced Vortex Transport for Signal Isolation. PRX Quantum, 2021, 2, .	9.2	3
130	Optical Detection of Radio Waves Through a Nanomechanical Transducer. , 2014, , .		3
131	Theoretical Bounds on Data Requirements for the Ray-Based Classification. SN Computer Science, 2022, 3, 1.	3.6	3
132	Nanoscale magnetic sensing using spin qubits in diamond. , 2009, , .		2
133	Dynamics of an ion coupled to a parametric superconducting circuit. Physical Review A, 2016, 93, .	2.5	2
134	Quantum model for entropic springs. Physical Review B, 2016, 93, .	3.2	2
135	Valley blockade in a silicon double quantum dot. Physical Review B, 2017, 96, .	3.2	2
136	Optomechanical approach to controlling the temperature and chemical potential of light. Physical Review A, 2018, 97, .	2.5	2
137	Topological Edge States in Silicon Photonics. , 2014, , .		1
138	Optomechanics with high-contrast gratings. , 2014, , .		1
139	A quantum future awaits. Science, 2018, 361, 313-313.	12.6	1
140	Optomechanical Quantum Thermometry. , 2018, , .		1
141	Quantum control of electron and nuclear spin qubits in the solid-state. AIP Conference Proceedings, 2006, , .	0.4	0
142	Return-roll stacker. , 2008, , .		0
143	Optical readout of coupling between a nanomembrane and an LC circuit at room temperature. , 2013, , .		0
144	Optical magnetometry of single NV center scanning local magnetic field in micro fluid devices. , 2014, , .		0

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145	Scanning localized magnetic fields in microfluidic system using single spin in diamond nanocrystal.. , 2015, , .		0
146	Topological Physics with Photons. Quantum Science and Technology, 2017, , 71-89.	2.6	0
147	Thermodynamic limits for optomechanical systems with conservative potentials. Physical Review B, 2017, 96, .	3.2	0
148	Optomechanical Analogy for Toy Cosmology with Quantized Scale Factor. Entropy, 2017, 19, 485.	2.2	0
149	QUANTUM CONTROL OF SPINS AND PHOTONS AT NANOSCALES. , 2009, , .		0
150	QUANTUM METROLOGY AND SIMULATION. , 2009, , .		0
151	Cold Atoms Coupled to a Superconducting Flux Qubit. , 2011, , .		0
152	Reservoir-assisted coherent control of a quantum dot spin. , 2014, , .		0
153	Symmetry breaking in membrane optomechanics. , 2016, , .		0
154	Thermometry with Optomechanical Cavities. , 2016, , .		0
155	Phonon Chirality and Indirect Cooling in an Optomechanical System. , 2017, , .		0