

Jacob M Taylor

List of Publications by Year in descending order

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155
papers

19,278
citations

31976

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11607

135
g-index

157
all docs

157
docs citations

157
times ranked

11355
citing authors

#	ARTICLE	IF	CITATIONS
1	Theoretical Bounds on Data Requirements for the Ray-Based Classification. SN Computer Science, 2022, 3, 1.	3.6	3
2	Quantum computing at the frontiers of biological sciences. Nature Methods, 2021, 18, 701-709.	19.0	64
3	Mechanical quantum sensing in the search for dark matter. Quantum Science and Technology, 2021, 6, 024002.	5.8	67
4	Faster Digital Quantum Simulation by Symmetry Protection. PRX Quantum, 2021, 2, .	9.2	50
5	Ray-Based Framework for State Identification in Quantum Dot Devices. PRX Quantum, 2021, 2, .	9.2	9
6	Optimal two-qubit circuits for universal fault-tolerant quantum computation. Npj Quantum Information, 2021, 7, .	6.7	9
7	Circulation by Microwave-Induced Vortex Transport for Signal Isolation. PRX Quantum, 2021, 2, .	9.2	3
8	Using an Atom Interferometer to Infer Gravitational Entanglement Generation. PRX Quantum, 2021, 2, .	9.2	46
9	Trapped Electrons and Ions as Particle Detectors. Physical Review Letters, 2021, 127, 061804.	7.8	11
10	Proposal for gravitational direct detection of dark matter. Physical Review D, 2020, 102, .	4.7	31
11	Beyond spontaneous emission: Giant atom bounded in the continuum. Physical Review A, 2020, 102, .	2.5	37
12	Probing XY phase transitions in a Josephson junction array with tunable frustration. Physical Review B, 2020, 102, .	3.2	6
13	Backaction-evading impulse measurement with mechanical quantum sensors. Physical Review A, 2020, 102, .	2.5	9
14	Autotuning of Double-Dot Devices <i>in Situ</i> with Machine Learning. Physical Review Applied, 2020, 13, .	3.8	38
15	Figures of merit for quantum transducers. Quantum Science and Technology, 2020, 5, 034009.	5.8	30
16	Machine learning techniques for state recognition and auto-tuning in quantum dots. Npj Quantum Information, 2019, 5, .	6.7	53
17	The U.S. National Quantum Initiative: From Act to action. Science, 2019, 364, 440-442.	12.6	31
18	Theory of Bose condensation of light via laser cooling of atoms. Physical Review A, 2019, 99, .	2.5	3

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19	Tabletop experiments for quantum gravity: a user's manual. <i>Classical and Quantum Gravity</i> , 2019, 36, 034001.	4.0	101
20	Dynamic suppression of Rayleigh backscattering in dielectric resonators. <i>Optica</i> , 2019, 6, 1016.	9.3	17
21	High-fidelity quantum gates in Si/SiGe double quantum dots. <i>Physical Review B</i> , 2018, 97, .	3.2	73
22	A coherent spin-photon interface in silicon. <i>Nature</i> , 2018, 555, 599-603.	27.8	296
23	Probing electron-phonon interactions in the charge-photon dynamics of cavity-coupled double quantum dots. <i>Physical Review B</i> , 2018, 97, .	3.2	12
24	Optomechanical approach to controlling the temperature and chemical potential of light. <i>Physical Review A</i> , 2018, 97, .	2.5	2
25	Resonantly driven CNOT gate for electron spins. <i>Science</i> , 2018, 359, 439-442.	12.6	407
26	QFlow lite dataset: A machine-learning approach to the charge states in quantum dot experiments. <i>PLoS ONE</i> , 2018, 13, e0205844.	2.5	17
27	Electrooptomechanical Equivalent Circuits for Quantum Transduction. <i>Physical Review Applied</i> , 2018, 10, .	3.8	11
28	Circuit-QED-based measurement of vortex lattice order in a Josephson junction array. <i>Physical Review B</i> , 2018, 98, .	3.2	8
29	Electro-mechano-optical detection of nuclear magnetic resonance. <i>Optica</i> , 2018, 5, 152.	9.3	22
30	A quantum future awaits. <i>Science</i> , 2018, 361, 313-313.	12.6	1
31	Optomechanical Quantum Thermometry. , 2018, , .		1
32	An autonomous single-piston engine with a quantum rotor. <i>Quantum Science and Technology</i> , 2018, 3, 035008.	5.8	17
33	Observation of optomechanical buckling transitions. <i>Nature Communications</i> , 2017, 8, 14481.	12.8	26
34	Topological Physics with Photons. <i>Quantum Science and Technology</i> , 2017, , 71-89.	2.6	0
35	Quantum correlations from a room-temperature optomechanical cavity. <i>Science</i> , 2017, 356, 1265-1268.	12.6	116
36	Threshold Dynamics of a Semiconductor Single Atom Maser. <i>Physical Review Letters</i> , 2017, 119, 097702.	7.8	25

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37	High-order multipole radiation from quantum Hall states in Dirac materials. <i>Physical Review B</i> , 2017, 95, .	3.2	7
38	Dynamically induced robust phonon transport and chiral cooling in an optomechanical system. <i>Nature Communications</i> , 2017, 8, 205.	12.8	28
39	Thermodynamic limits for optomechanical systems with conservative potentials. <i>Physical Review B</i> , 2017, 96, .	3.2	0
40	Valley blockade in a silicon double quantum dot. <i>Physical Review B</i> , 2017, 96, .	3.2	2
41	Cooling a Harmonic Oscillator by Optomechanical Modification of Its Bath. <i>Physical Review Letters</i> , 2017, 118, 223602.	7.8	22
42	Input-output theory for spin-photon coupling in Si double quantum dots. <i>Physical Review B</i> , 2017, 96, .	3.2	62
43	Optomechanical Analogy for Toy Cosmology with Quantized Scale Factor. <i>Entropy</i> , 2017, 19, 485.	2.2	0
44	Efimov States of Strongly Interacting Photons. <i>Physical Review Letters</i> , 2017, 119, 233601.	7.8	24
45	Phonon Chirality and Indirect Cooling in an Optomechanical System. , 2017, , .		0
46	Serialized quantum error correction protocol for high-bandwidth quantum repeaters. <i>New Journal of Physics</i> , 2016, 18, 093008.	2.9	20
47	Entangling distant resonant exchange qubits via circuit quantum electrodynamics. <i>Physical Review B</i> , 2016, 94, .	3.2	41
48	Sisyphus Thermalization of Photons in a Cavity-Coupled Double Quantum Dot. <i>Physical Review Letters</i> , 2016, 117, 056801.	7.8	14
49	Quantum-Enhanced Machine Learning. <i>Physical Review Letters</i> , 2016, 117, 130501.	7.8	250
50	Dynamics of an ion coupled to a parametric superconducting circuit. <i>Physical Review A</i> , 2016, 93, .	2.5	2
51	Quantum model for entropic springs. <i>Physical Review B</i> , 2016, 93, .	3.2	2
52	Interacting Atomic Interferometry for Rotation Sensing Approaching the Heisenberg Limit. <i>Physical Review Letters</i> , 2016, 117, 203002.	7.8	20
53	Landauer formulation of photon transport in driven systems. <i>Physical Review B</i> , 2016, 94, .	3.2	8
54	An optomechanical accelerometer with a high-finesse hemispherical optical cavity. , 2016, , .		7

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55	Symmetry breaking in membrane optomechanics. , 2016, , .		0
56	Thermometry with Optomechanical Cavities. , 2016, , .		0
57	Injection locking of a semiconductor double-quantum-dot micromaser. Physical Review A, 2015, 92, .	2.5	18
58	Chemical potential for light by parametric coupling. Physical Review B, 2015, 92, .	3.2	52
59	Optical control of donor spin qubits in silicon. Physical Review B, 2015, 92, .	3.2	9
60	Capacitively coupled singlet-triplet qubits in the double charge resonant regime. Physical Review B, 2015, 92, .	3.2	17
61	Optomechanical reference accelerometer. Metrologia, 2015, 52, 654-665.	1.2	42
62	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
63	Scanning Localized Magnetic Fields in a Microfluidic Device with a Single Nitrogen Vacancy Center. Nano Letters, 2015, 15, 1481-1486.	9.1	12
64	Quantum nonlinear optics near optomechanical instabilities. Physical Review A, 2015, 91, .	2.5	31
65	Semiconductor double quantum dot micromaser. Science, 2015, 347, 285-287.	12.6	115
66	Tunable Spin-Qubit Coupling Mediated by a Multielectron Quantum Dot. Physical Review Letters, 2015, 114, 226803.	7.8	41
67	Phonon-Assisted Gain in a Semiconductor Double Quantum Dot Maser. Physical Review Letters, 2015, 114, 196802.	7.8	42
68	Bounds on quantum communication via Newtonian gravity. New Journal of Physics, 2015, 17, 015006.	2.9	33
69	Scanning localized magnetic fields in microfluidic system using single spin in diamond nanocrystal.. , 2015, , .		0
70	Trapping atoms using nanoscale quantum vacuum forces. Nature Communications, 2014, 5, 4343.	12.8	44
71	Optical magnetometry of single NV center scanning local magnetic field in micro fluid devices. , 2014, , .		0
72	Topological Edge States in Silicon Photonics. , 2014, , .		1

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73	High sensitivity optomechanical reference accelerometer over 10 kHz. Applied Physics Letters, 2014, 104, .	3.3	102
74	Squeezing in a coupled two-mode optomechanical system for force sensing below the standard quantum limit. Physical Review A, 2014, 90, .	2.5	58
75	Optomechanics with high-contrast gratings. , 2014, , .		1
76	Ultra-sensitive chip-based photonic temperature sensor using ring resonator structures. Optics Express, 2014, 22, 3098.	3.4	118
77	Optical detection of radio waves through a nanomechanical transducer. Nature, 2014, 507, 81-85.	27.8	382
78	Single-layer graphene on silicon nitride micromembrane resonators. Journal of Applied Physics, 2014, 115, 054513.	2.5	33
79	Engineering three-body interaction and Pfaffian states in circuit QED systems. Physical Review B, 2014, 90, .	3.2	40
80	Environment-assisted quantum control of a solid-state spin via coherent dark states. Nature Physics, 2014, 10, 725-730.	16.7	71
81	Photon Emission from a Cavity-Coupled Double Quantum Dot. Physical Review Letters, 2014, 113, 036801.	7.8	110
82	A classical channel model for gravitational decoherence. New Journal of Physics, 2014, 16, 065020.	2.9	106
83	Topologically Robust Transport of Photons in a Synthetic Gauge Field. Physical Review Letters, 2014, 113, 087403.	7.8	214
84	Single-photon transistor based on superconducting systems. Physical Review B, 2014, 89, .	3.2	20
85	Topological physics with light. Physics Today, 2014, 67, 68-69.	0.3	13
86	Reservoir-assisted coherent control of a quantum dot spin. , 2014, , .		0
87	Optical Detection of Radio Waves Through a Nanomechanical Transducer. , 2014, , .		3
88	Imaging topological edge states in silicon photonics. Nature Photonics, 2013, 7, 1001-1005.	31.4	1,264
89	Quantum-Dot-Based Resonant Exchange Qubit. Physical Review Letters, 2013, 111, 050501.	7.8	202
90	Self-consistent measurement and state tomography of an exchange-only spin qubit. Nature Nanotechnology, 2013, 8, 654-659.	31.5	204

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91	Nonlinear Optics Quantum Computing with Circuit QED. Physical Review Letters, 2013, 110, 060503.	7.8	17
92	Non-equilibrium fractional quantum Hall state of light. New Journal of Physics, 2013, 15, 063001.	2.9	82
93	Simultaneous Spin-Charge Relaxation in Double Quantum Dots. Physical Review Letters, 2013, 110, 196803.	7.8	35
94	Photonic temperature sensor based on microring resonators. , 2013, , .		4
95	Electrically Protected Resonant Exchange Qubits in Triple Quantum Dots. Physical Review Letters, 2013, 111, 050502.	7.8	87
96	Optical readout of coupling between a nanomembrane and an LC circuit at room temperature. , 2013, , .		0
97	Preparation of nonequilibrium nuclear spin states in double quantum dots. Physical Review B, 2013, 88, .	3.2	14
98	Equilibrium states of open quantum systems in the strong coupling regime. Physical Review E, 2012, 86, 061132.	2.1	57
99	Quantum Interface between an Electrical Circuit and a Single Atom. Physical Review Letters, 2012, 108, 130504.	7.8	30
100	Circuit quantum electrodynamics with a spin qubit. Nature, 2012, 490, 380-383.	27.8	384
101	Atomic interface between microwave and optical photons. Physical Review A, 2012, 85, .	2.5	90
102	Coupling artificial molecular spin states by photon-assisted tunnelling. Nature Communications, 2011, 2, 556.	12.8	45
103	Robust optical delay lines with topological protection. Nature Physics, 2011, 7, 907-912.	16.7	1,110
104	Nanoscale Optical Electrometer. Physical Review Letters, 2011, 107, 166802.	7.8	45
105	Thin-film superconducting resonator tunable to the ground-state hyperfine splitting of ⁸⁷ Rb. AIP Advances, 2011, 1, .	1.3	15
106	Laser Cooling and Optical Detection of Excitations in a LCElectrical Circuit. Physical Review Letters, 2011, 107, 273601.	7.8	68
107	Fast and robust quantum computation with ionic Wigner crystals. Physical Review A, 2011, 83, .	2.5	10
108	Unified approach to topological quantum computation with anyons: From qubit encoding to Toffoli gate. Physical Review A, 2011, 84, .	2.5	5

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109	Interferometry with synthetic gauge fields. <i>Physical Review A</i> , 2011, 83, .	2.5	10
110	Cold Atoms Coupled to a Superconducting Flux Qubit. , 2011, , .		0
111	Quantum leaps in the solid state. <i>Nature</i> , 2010, 467, 278-279.	27.8	3
112	Coherent spin manipulation in an exchange-only qubit. <i>Physical Review B</i> , 2010, 82, .	3.2	203
113	Exchange Control of Nuclear Spin Diffusion in a Double Quantum Dot. <i>Physical Review Letters</i> , 2010, 104, 236802.	7.8	38
114	Coupling Nitrogen-Vacancy Centers in Diamond to Superconducting Flux Qubits. <i>Physical Review Letters</i> , 2010, 105, 210501.	7.8	215
115	SCALABLE QUANTUM NETWORKS BASED ON FEW-QUBIT REGISTERS. <i>International Journal of Quantum Information</i> , 2010, 08, 93-104.	1.1	3
116	Dynamic Nuclear Polarization in Double Quantum Dots. <i>Physical Review Letters</i> , 2010, 104, 226807.	7.8	47
117	Qubit Protection in Nuclear-Spin Quantum Dot Memories. <i>Physical Review Letters</i> , 2009, 103, 010502.	7.8	38
118	Repetitive Readout of a Single Electronic Spin via Quantum Logic with Nuclear Spin Ancillae. <i>Science</i> , 2009, 326, 267-272.	12.6	277
119	Atomic Three-Body Loss as a Dynamical Three-Body Interaction. <i>Physical Review Letters</i> , 2009, 102, 040402.	7.8	200
120	Quantum repeater with encoding. <i>Physical Review A</i> , 2009, 79, .	2.5	224
121	Nanoscale magnetic sensing using spin qubits in diamond. , 2009, , .		2
122	QUANTUM CONTROL OF SPINS AND PHOTONS AT NANOSCALES. , 2009, , .		0
123	QUANTUM METROLOGY AND SIMULATION. , 2009, , .		0
124	Electron spin decoherence of single nitrogen-vacancy defects in diamond. <i>Physical Review B</i> , 2008, 78, .	3.2	168
125	Measurement of Temporal Correlations of the Overhauser Field in a Double Quantum Dot. <i>Physical Review Letters</i> , 2008, 101, 236803.	7.8	95
126	High-sensitivity diamond magnetometer with nanoscale resolution. <i>Nature Physics</i> , 2008, 4, 810-816.	16.7	1,409

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127	Nanoscale magnetic sensing with an individual electronic spin in diamond. <i>Nature</i> , 2008, 455, 644-647.	27.8	1,554
128	Return-roll stacker. , 2008, , .		0
129	Suppressing Spin Qubit Dephasing by Nuclear State Preparation. <i>Science</i> , 2008, 321, 817-821.	12.6	229
130	Wigner crystals of ions as quantum hard drives. <i>Physical Review A</i> , 2008, 78, .	2.5	34
131	Dynamic Nuclear Polarization with Single Electron Spins. <i>Physical Review Letters</i> , 2008, 100, 067601.	7.8	118
132	Coherence of an Optically Illuminated Single Nuclear Spin Qubit. <i>Physical Review Letters</i> , 2008, 100, 073001.	7.8	51
133	Optimal approach to quantum communication using dynamic programming. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2007, 104, 17291-17296.	7.1	53
134	Spin-Photon Entangling Diode. <i>Physical Review Letters</i> , 2007, 98, 240501.	7.8	11
135	Fast and robust approach to long-distance quantum communication with atomic ensembles. <i>Physical Review A</i> , 2007, 76, .	2.5	104
136	Distributed quantum computation based on small quantum registers. <i>Physical Review A</i> , 2007, 76, .	2.5	188
137	Coherent optical manipulation of triplet-singlet states in coupled quantum dots. <i>Physical Review B</i> , 2007, 75, .	3.2	16
138	Relaxation, dephasing, and quantum control of electron spins in double quantum dots. <i>Physical Review B</i> , 2007, 76, .	3.2	302
139	Fault-Tolerant Quantum Communication Based on Solid-State Photon Emitters. <i>Physical Review Letters</i> , 2006, 96, 070504.	7.8	297
140	Coherent Dynamics of Coupled Electron and Nuclear Spin Qubits in Diamond. <i>Science</i> , 2006, 314, 281-285.	12.6	1,030
141	Quantum control of electron and nuclear spin qubits in the solid-state. <i>AIP Conference Proceedings</i> , 2006, , .	0.4	0
142	Dephasing of Quantum Bits by a Quasi-Static Mesoscopic Environment. <i>Quantum Information Processing</i> , 2006, 5, 503-536.	2.2	24
143	Long-lived memory for electronic spin in a quantum dot: Numerical analysis. <i>Physical Review B</i> , 2006, 73, .	3.2	21
144	Quantum measurement of a mesoscopic spin ensemble. <i>Physical Review A</i> , 2006, 74, .	2.5	71

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145	Fault-tolerant architecture for quantum computation using electrically controlled semiconductor spins. <i>Nature Physics</i> , 2005, 1, 177-183.	16.7	357
146	Triplet-singlet spin relaxation via nuclei in a double quantum dot. <i>Nature</i> , 2005, 435, 925-928.	27.8	458
147	Fault-tolerant quantum repeaters with minimal physical resources and implementations based on single-photon emitters. <i>Physical Review A</i> , 2005, 72, .	2.5	239
148	Solid-State Circuit for Spin Entanglement Generation and Purification. <i>Physical Review Letters</i> , 2005, 94, 236803.	7.8	54
149	Coherent Manipulation of Coupled Electron Spins in Semiconductor Quantum Dots. <i>Science</i> , 2005, 309, 2180-2184.	12.6	2,674
150	Tunable Nonlocal Spin Control in a Coupled-Quantum Dot System. <i>Science</i> , 2004, 304, 565-567.	12.6	320
151	Controlling a Mesoscopic Spin Environment by Quantum Bit Manipulation. <i>Physical Review Letters</i> , 2003, 91, 246802.	7.8	99
152	Long-Lived Memory for Mesoscopic Quantum Bits. <i>Physical Review Letters</i> , 2003, 90, 206803.	7.8	231
153	Helium White Dwarfs and BY Draconis Binaries in the Globular Cluster NGC 6397. <i>Astrophysical Journal</i> , 2001, 553, L169-L172.	4.5	50
154	Dipole polarizability of the hydrogen molecular ion. <i>Physical Review A</i> , 1999, 60, R2630-R2632.	2.5	27
155	Variational calculations on the hydrogen molecular ion. <i>Molecular Physics</i> , 1999, 97, 25-33.	1.7	32