

Hideo Mabuchi

List of Publications by Year in descending order

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93
papers

7,532
citations

109137

35
h-index

51492

86
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94
all docs

94
docs citations

94
times ranked

5241
citing authors

#	ARTICLE	IF	CITATIONS
1	Quantum State Transfer and Entanglement Distribution among Distant Nodes in a Quantum Network. <i>Physical Review Letters</i> , 1997, 78, 3221-3224.	2.9	1,845
2	Cavity Quantum Electrodynamics: Coherence in Context. <i>Science</i> , 2002, 298, 1372-1377.	6.0	588
3	High-Q measurements of fused-silica microspheres in the near infrared. <i>Optics Letters</i> , 1998, 23, 247.	1.7	443
4	A fully programmable 100-spin coherent Ising machine with all-to-all connections. <i>Science</i> , 2016, 354, 614-617.	6.0	427
5	Quantum feedback control and classical control theory. <i>Physical Review A</i> , 2000, 62, .	1.0	290
6	Adaptive Homodyne Measurement of Optical Phase. <i>Physical Review Letters</i> , 2002, 89, 133602.	2.9	245
7	Feedback control of quantum state reduction. <i>IEEE Transactions on Automatic Control</i> , 2005, 50, 768-780.	3.6	223
8	Optimization of the Q factor in photonic crystal microcavities. <i>IEEE Journal of Quantum Electronics</i> , 2002, 38, 850-856.	1.0	207
9	Experimental investigation of performance differences between coherent Ising machines and a quantum annealer. <i>Science Advances</i> , 2019, 5, eaau0823.	4.7	169
10	Coherent-feedback quantum control with a dynamic compensator. <i>Physical Review A</i> , 2008, 78, .	1.0	160
11	Principles and applications of control in quantum systems. <i>International Journal of Robust and Nonlinear Control</i> , 2005, 15, 647-667.	2.1	126
12	Deterministic Dicke-state preparation with continuous measurement and control. <i>Physical Review A</i> , 2004, 70, .	1.0	125
13	Quantum Kalman Filtering and the Heisenberg Limit in Atomic Magnetometry. <i>Physical Review Letters</i> , 2003, 91, 250801.	2.9	119
14	Designing Quantum Memories with Embedded Control: Photonic Circuits for Autonomous Quantum Error Correction. <i>Physical Review Letters</i> , 2010, 105, 040502.	2.9	115
15	Integration of fiber-coupled high-Q SiNx microdisks with atom chips. <i>Applied Physics Letters</i> , 2006, 89, 131108.	1.5	112
16	Quantum Dot Photon Statistics Measured by Three-Dimensional Particle Tracking. <i>Nano Letters</i> , 2007, 7, 3535-3539.	4.5	105
17	Advantages of Coherent Feedback for Cooling Quantum Oscillators. <i>Physical Review Letters</i> , 2012, 109, 173602.	2.9	100
18	Full observation of single-atom dynamics in cavity QED. <i>Applied Physics B: Lasers and Optics</i> , 1999, 68, 1095-1108.	1.1	98

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19	Quantum Feedback Control of Atomic Motion in an Optical Cavity. <i>Physical Review Letters</i> , 2004, 92, 223004.	2.9	97
20	Inversion of Quantum Jumps in Quantum Optical Systems under Continuous Observation. <i>Physical Review Letters</i> , 1996, 76, 3108-3111.	2.9	93
21	Robust quantum parameter estimation: Coherent magnetometry with feedback. <i>Physical Review A</i> , 2004, 69, .	1.0	87
22	Single Molecule Analysis Research Tool (SMART): An Integrated Approach for Analyzing Single Molecule Data. <i>PLoS ONE</i> , 2012, 7, e30024.	1.1	81
23	Modelling and feedback control design for quantum state preparation. <i>Journal of Optics B: Quantum and Semiclassical Optics</i> , 2005, 7, S179-S197.	1.4	78
24	Tracking-FCS: Fluorescence correlation spectroscopy of individual particles. <i>Optics Express</i> , 2005, 13, 8069.	1.7	72
25	Photon Statistics and Dynamics of Fluorescence Resonance Energy Transfer. <i>Physical Review Letters</i> , 2002, 89, 068101.	2.9	67
26	Protein flexibility is required for vesicle tethering at the Golgi. <i>ELife</i> , 2015, 4, .	2.8	59
27	Feedback controller design for tracking a single fluorescent molecule. <i>Applied Physics B: Lasers and Optics</i> , 2004, 78, 653-659.	1.1	52
28	Feasibility of detecting single atoms using photonic bandgap cavities. <i>Nanotechnology</i> , 2004, 15, S556-S561.	1.3	51
29	Squeezed light in an optical parametric oscillator network with coherent feedback quantum control. <i>Optics Express</i> , 2013, 21, 18371.	1.7	43
30	Spin transfer between laser-polarized ¹²⁹ Xe nuclei and surface protons. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1993, 184, 88-92.	0.9	42
31	Feedback cooling of atomic motion in cavity QED. <i>Physical Review A</i> , 2006, 74, .	1.0	42
32	Coherent controllers for optical-feedback cooling of quantum oscillators. <i>Physical Review A</i> , 2013, 87, .	1.0	42
33	Specification of photonic circuits using quantum hardware description language. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2012, 370, 5270-5290.	1.6	41
34	Physical model of continuous two-qubit parity measurement in a cavity-QED network. <i>Physical Review A</i> , 2009, 79, .	1.0	38
35	Quantum Noise in Large-Scale Coherent Nonlinear Photonic Circuits. <i>Physical Review Applied</i> , 2014, 1, .	1.5	37
36	Feedback localization of freely diffusing fluorescent particles near the optical shot-noise limit. <i>Optics Letters</i> , 2007, 32, 145.	1.7	36

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37	Mid-infrared nonlinear optics in thin-film lithium niobate on sapphire. <i>Optica</i> , 2021, 8, 921.	4.8	36
38	Quantum projection filter for a highly nonlinear model in cavity QED. <i>Journal of Optics B: Quantum and Semiclassical Optics</i> , 2005, 7, S226-S236.	1.4	35
39	Remnants of semiclassical bistability in the few-photon regime of cavity QED. <i>Optics Express</i> , 2011, 19, 24468.	1.7	35
40	Polarization-dependent frequency shifts from Rb ³ He collisions. <i>Physical Review A</i> , 1993, 48, 558-568.	1.0	34
41	Engineering a Kerr-Based Deterministic Cubic Phase Gate via Gaussian Operations. <i>Physical Review Letters</i> , 2020, 124, 240503.	2.9	32
42	Quantum Information Processing in Cavity-QED. <i>Quantum Information Processing</i> , 2004, 3, 75-90.	1.0	31
43	Topological defect formation in 1D and 2D spin chains realized by network of optical parametric oscillators. <i>International Journal of Modern Physics B</i> , 2016, 30, 1630014.	1.0	31
44	Femtojoule-Scale All-Optical Latching and Modulation via Cavity Nonlinear Optics. <i>Physical Review Letters</i> , 2013, 111, 203002.	2.9	30
45	Reduced models and design principles for half-harmonic generation in synchronously pumped optical parametric oscillators. <i>Physical Review A</i> , 2016, 94, .	1.0	30
46	Retroactive Quantum Jumps in a Strongly Coupled Atom-Field System. <i>Physical Review Letters</i> , 1998, 81, 4620-4623.	2.9	28
47	Performance bounds on single-particle tracking by fluorescence modulation. <i>Applied Physics B: Lasers and Optics</i> , 2006, 83, 127-133.	1.1	28
48	Precise Characterization of the Conformation Fluctuations of Freely Diffusing DNA: Beyond Rouse and Zimm. <i>Journal of the American Chemical Society</i> , 2009, 131, 17901-17907.	6.6	28
49	Continuous quantum error correction as classical hybrid control. <i>New Journal of Physics</i> , 2009, 11, 105044.	1.2	27
50	Nonlinear interferometry approach to photonic sequential logic. <i>Applied Physics Letters</i> , 2011, 99, .	1.5	27
51	Programmable logic devices in experimental quantum optics. <i>Journal of the Optical Society of America B: Optical Physics</i> , 2002, 19, 3019.	0.9	26
52	Coherent Ising machines—Quantum optics and neural network Perspectives. <i>Applied Physics Letters</i> , 2020, 117, .	1.5	26
53	Rovibrational spectroscopy of the $v=6$ manifold in $^{12}\text{C}_2\text{H}_2$ and $^{13}\text{C}_2\text{H}_2$. <i>Journal of Chemical Physics</i> , 2000, 113, 7376-7383.	1.2	24
54	Finesse and sensitivity gain in cavity-enhanced absorption spectroscopy of biomolecules in solution. <i>Optics Express</i> , 2006, 14, 10441.	1.7	24

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55	Calculation of divergent photon absorption in ultrathin films of a topological insulator. <i>Physical Review B</i> , 2013, 88, .	1.1	24
56	Quantum networks based on cavity QED. <i>Quantum Information and Computation</i> , 2001, 1, 7-12.	0.1	22
57	Qubit limit of cavity nonlinear optics. <i>Physical Review A</i> , 2012, 85, .	1.0	20
58	Kinetic and thermodynamic framework for P4-P6 RNA reveals tertiary motif modularity and modulation of the folding preferred pathway. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016, 113, E4956-E4965.	3.3	20
59	Standard quantum limits for broadband position measurement. <i>Physical Review A</i> , 1998, 58, 123-127.	1.0	19
60	Fluctuations in closed-loop fluorescent particle tracking. <i>Optics Express</i> , 2007, 15, 7752.	1.7	19
61	Quantum filter reduction for measurement-feedback control via unsupervised manifold learning. <i>New Journal of Physics</i> , 2009, 11, 105043.	1.2	19
62	Derivation of Maxwell-Bloch-type equations by projection of quantum models. <i>Physical Review A</i> , 2008, 78, .	1.0	18
63	Proposed magneto-electrostatic ring trap for neutral atoms. <i>Physical Review A</i> , 2004, 70, .	1.0	17
64	Quantum noise of free-carrier dispersion in semiconductor optical cavities. <i>Physical Review A</i> , 2015, 92, .	1.0	17
65	Optical Devices Based on Limit Cycles and Amplification in Semiconductor Optical Cavities. <i>Physical Review Applied</i> , 2015, 4, .	1.5	17
66	Single-molecule dataset (SMD): a generalized storage format for raw and processed single-molecule data. <i>BMC Bioinformatics</i> , 2015, 16, 3.	1.2	17
67	Quantitative tests of a reconstitution model for RNA folding thermodynamics and kinetics. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017, 114, E7688-E7696.	3.3	17
68	Highly polarized muonic He produced by collisions with laser optically pumped Rb. <i>Physical Review Letters</i> , 1993, 70, 758-761.	2.9	16
69	Atom mirror etched from a hard drive. <i>Applied Physics Letters</i> , 2003, 83, 395-397.	1.5	16
70	Bayesian Estimation for Species Identification in Single-Molecule Fluorescence Microscopy. <i>Biophysical Journal</i> , 2004, 86, 3409-3422.	0.2	16
71	A coherent perceptron for all-optical learning. <i>EPJ Quantum Technology</i> , 2015, 2, .	2.9	16
72	Quantum manipulation and measurement of single atoms in optical cavity QED. <i>IEEE Transactions on Instrumentation and Measurement</i> , 1999, 48, 608-612.	2.4	15

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73	Adiabatic Fock-state-generation scheme using Kerr nonlinearity. <i>Physical Review A</i> , 2019, 100, .	1.0	15
74	Single-Molecule Fluorescence Reveals Commonalities and Distinctions among Natural and <i>in Vitro</i> -Selected RNA Tertiary Motifs in a Multistep Folding Pathway. <i>Journal of the American Chemical Society</i> , 2017, 139, 18576-18589.	6.6	14
75	The dressed atom as binary phase modulator: towards attojoule/edge optical phase-shift keying. <i>Optics Express</i> , 2011, 19, 6478.	1.7	11
76	Efficient sampling of ground and low-energy Ising spin configurations with a coherent Ising machine. <i>Physical Review Research</i> , 2022, 4, .	1.3	11
77	Transformation of Quantum Photonic Circuit Models by Term Rewriting. <i>IEEE Photonics Journal</i> , 2013, 5, 7500111-7500111.	1.0	7
78	Photonic circuits for iterative decoding of a class of low-density parity-check codes. <i>New Journal of Physics</i> , 2014, 16, 105017.	1.2	6
79	Efficient simulation of ultrafast quantum nonlinear optics with matrix product states. <i>Optica</i> , 0, , .	4.8	6
80	A sub-Doppler resolution double resonance molecular beam infrared spectrometer operating at chemically relevant energies ($\sim 1/2$ eV). <i>Review of Scientific Instruments</i> , 2000, 71, 4032.	0.6	5
81	Gauge subsystems, separability and robustness in autonomous quantum memories. <i>New Journal of Physics</i> , 2013, 15, 035014.	1.2	5
82	On the generalization of linear least mean squares estimation to quantum systems with non-commutative outputs. <i>EPJ Quantum Technology</i> , 2015, 2, .	2.9	5
83	Low-dimensional manifolds for exact representation of open quantum systems. <i>Physical Review A</i> , 2017, 96, .	1.0	5
84	Measurement of Mesoscale Conformational Dynamics of Freely Diffusing Molecules with Tracking FCS. <i>Biophysical Journal</i> , 2018, 114, 1539-1550.	0.2	5
85	Nonlinear quantum behavior of ultrashort-pulse optical parametric oscillators. <i>Physical Review A</i> , 2022, 105, .	1.0	5
86	Onset of non-Gaussian quantum physics in pulsed squeezing with mesoscopic fields. <i>Optica</i> , 2022, 9, 379.	4.8	5
87	Intramolecular Fluorescence Correlation Spectroscopy in a Feedback Tracking Microscope. <i>Biophysical Journal</i> , 2010, 99, 313-322.	0.2	4
88	All-mechanical quantum noise cancellation for accelerometry: broadband with momentum measurements, narrow band without. <i>Journal of Optics (United Kingdom)</i> , 2016, 18, 034002.	1.0	3
89	Scanning microwave imaging of optically patterned Ge ₂ Sb ₂ Te ₅ . <i>Applied Physics Letters</i> , 2019, 114, 093106.	1.5	3
90	Mechanism of stochastic switching in single-atom absorptive bistability. <i>Physical Review A</i> , 2018, 98, .	1.0	2

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91	Laser-induced patterning for a diffraction grating using the phase change material of Ge ₂ Sb ₂ Te ₅ (GST) as a spatial light modulator in X-ray optics: a proof of concept. Optical Materials Express, 2022, 12, 1408.	1.6	2
92	Van derWaals enhancement of optical atom potentials via resonant coupling to surface polaritons. Optics Express, 2009, 17, 14744.	1.7	0
93	Tracking Fluorescence Correlation Spectroscopy of Individual Biomolecules. , 2009, , .		0