

# 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  
g-index

94  
all docs

94  
docs citations

94  
times ranked

5241  
citing authors

#	ARTICLE	IF	CITATIONS
1	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
2	Laser-induced patterning for a diffraction grating using the phase change material of Ge <sub>2</sub> Sb <sub>2</sub> Te <sub>5</sub> (GST) as a spatial light modulator in X-ray optics: a proof of concept. <i>Optical Materials Express</i> , 2022, 12, 1408.	1.6	2
3	Nonlinear quantum behavior of ultrashort-pulse optical parametric oscillators. <i>Physical Review A</i> , 2022, 105, .	1.0	5
4	Onset of non-Gaussian quantum physics in pulsed squeezing with mesoscopic fields. <i>Optica</i> , 2022, 9, 379.	4.8	5
5	Mid-infrared nonlinear optics in thin-film lithium niobate on sapphire. <i>Optica</i> , 2021, 8, 921.	4.8	36
6	Coherent Ising machines—Quantum optics and neural network Perspectives. <i>Applied Physics Letters</i> , 2020, 117, .	1.5	26
7	Engineering a Kerr-Based Deterministic Cubic Phase Gate via Gaussian Operations. <i>Physical Review Letters</i> , 2020, 124, 240503.	2.9	32
8	Adiabatic Fock-state-generation scheme using Kerr nonlinearity. <i>Physical Review A</i> , 2019, 100, .	1.0	15
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	Scanning microwave imaging of optically patterned Ge <sub>2</sub> Sb <sub>2</sub> Te <sub>5</sub> . <i>Applied Physics Letters</i> , 2019, 114, 093106.	1.5	3
11	Measurement of Mesoscale Conformational Dynamics of Freely Diffusing Molecules with Tracking FCS. <i>Biophysical Journal</i> , 2018, 114, 1539-1550.	0.2	5
12	Mechanism of stochastic switching in single-atom absorptive bistability. <i>Physical Review A</i> , 2018, 98, .	1.0	2
13	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
14	Low-dimensional manifolds for exact representation of open quantum systems. <i>Physical Review A</i> , 2017, 96, .	1.0	5
15	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
16	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
17	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
18	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

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19	A fully programmable 100-spin coherent Ising machine with all-to-all connections. <i>Science</i> , 2016, 354, 614-617.	6.0	427
20	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
21	Quantum noise of free-carrier dispersion in semiconductor optical cavities. <i>Physical Review A</i> , 2015, 92, .	1.0	17
22	Optical Devices Based on Limit Cycles and Amplification in Semiconductor Optical Cavities. <i>Physical Review Applied</i> , 2015, 4, .	1.5	17
23	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
24	A coherent perceptron for all-optical learning. <i>EPJ Quantum Technology</i> , 2015, 2, .	2.9	16
25	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
26	Protein flexibility is required for vesicle tethering at the Golgi. <i>ELife</i> , 2015, 4, .	2.8	59
27	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
28	Quantum Noise in Large-Scale Coherent Nonlinear Photonic Circuits. <i>Physical Review Applied</i> , 2014, 1, .	1.5	37
29	Coherent controllers for optical-feedback cooling of quantum oscillators. <i>Physical Review A</i> , 2013, 87, .	1.0	42
30	Transformation of Quantum Photonic Circuit Models by Term Rewriting. <i>IEEE Photonics Journal</i> , 2013, 5, 7500111-7500111.	1.0	7
31	Squeezed light in an optical parametric oscillator network with coherent feedback quantum control. <i>Optics Express</i> , 2013, 21, 18371.	1.7	43
32	Gauge subsystems, separability and robustness in autonomous quantum memories. <i>New Journal of Physics</i> , 2013, 15, 035014.	1.2	5
33	Femtojoule-Scale All-Optical Latching and Modulation via Cavity Nonlinear Optics. <i>Physical Review Letters</i> , 2013, 111, 203002.	2.9	30
34	Calculation of divergent photon absorption in ultrathin films of a topological insulator. <i>Physical Review B</i> , 2013, 88, .	1.1	24
35	Advantages of Coherent Feedback for Cooling Quantum Oscillators. <i>Physical Review Letters</i> , 2012, 109, 173602.	2.9	100
36	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

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37	Qubit limit of cavity nonlinear optics. <i>Physical Review A</i> , 2012, 85, .	1.0	20
38	Single Molecule Analysis Research Tool (SMART): An Integrated Approach for Analyzing Single Molecule Data. <i>PLoS ONE</i> , 2012, 7, e30024.	1.1	81
39	The dressed atom as binary phase modulator: towards attojoule/edge optical phase-shift keying. <i>Optics Express</i> , 2011, 19, 6478.	1.7	11
40	Remnants of semiclassical bistability in the few-photon regime of cavity QED. <i>Optics Express</i> , 2011, 19, 24468.	1.7	35
41	Nonlinear interferometry approach to photonic sequential logic. <i>Applied Physics Letters</i> , 2011, 99, .	1.5	27
42	Designing Quantum Memories with Embedded Control: Photonic Circuits for Autonomous Quantum Error Correction. <i>Physical Review Letters</i> , 2010, 105, 040502.	2.9	115
43	Intramolecular Fluorescence Correlation Spectroscopy in a Feedback Tracking Microscope. <i>Biophysical Journal</i> , 2010, 99, 313-322.	0.2	4
44	Physical model of continuous two-qubit parity measurement in a cavity-QED network. <i>Physical Review A</i> , 2009, 79, .	1.0	38
45	Continuous quantum error correction as classical hybrid control. <i>New Journal of Physics</i> , 2009, 11, 105044.	1.2	27
46	Quantum filter reduction for measurement-feedback control via unsupervised manifold learning. <i>New Journal of Physics</i> , 2009, 11, 105043.	1.2	19
47	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
48	Van derWaals enhancement of optical atom potentials via resonant coupling to surface polaritons. <i>Optics Express</i> , 2009, 17, 14744.	1.7	0
49	Tracking Fluorescence Correlation Spectroscopy of Individual Biomolecules. , 2009, , .		0
50	Derivation of Maxwell-Bloch-type equations by projection of quantum models. <i>Physical Review A</i> , 2008, 78, .	1.0	18
51	Coherent-feedback quantum control with a dynamic compensator. <i>Physical Review A</i> , 2008, 78, .	1.0	160
52	Feedback localization of freely diffusing fluorescent particles near the optical shot-noise limit. <i>Optics Letters</i> , 2007, 32, 145.	1.7	36
53	Fluctuations in closed-loop fluorescent particle tracking. <i>Optics Express</i> , 2007, 15, 7752.	1.7	19
54	Quantum Dot Photon Statistics Measured by Three-Dimensional Particle Tracking. <i>Nano Letters</i> , 2007, 7, 3535-3539.	4.5	105

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55	Integration of fiber-coupled high-Q SiNx microdisks with atom chips. Applied Physics Letters, 2006, 89, 131108.	1.5	112
56	Finesse and sensitivity gain in cavity-enhanced absorption spectroscopy of biomolecules in solution. Optics Express, 2006, 14, 10441.	1.7	24
57	Performance bounds on single-particle tracking by fluorescence modulation. Applied Physics B: Lasers and Optics, 2006, 83, 127-133.	1.1	28
58	Feedback cooling of atomic motion in cavity QED. Physical Review A, 2006, 74, .	1.0	42
59	Principles and applications of control in quantum systems. International Journal of Robust and Nonlinear Control, 2005, 15, 647-667.	2.1	126
60	Quantum projection filter for a highly nonlinear model in cavity QED. Journal of Optics B: Quantum and Semiclassical Optics, 2005, 7, S226-S236.	1.4	35
61	Feedback control of quantum state reduction. IEEE Transactions on Automatic Control, 2005, 50, 768-780.	3.6	223
62	Modelling and feedback control design for quantum state preparation. Journal of Optics B: Quantum and Semiclassical Optics, 2005, 7, S179-S197.	1.4	78
63	Tracking-FCS: Fluorescence correlation spectroscopy of individual particles. Optics Express, 2005, 13, 8069.	1.7	72
64	Quantum Feedback Control of Atomic Motion in an Optical Cavity. Physical Review Letters, 2004, 92, 223004.	2.9	97
65	Proposed magneto-electrostatic ring trap for neutral atoms. Physical Review A, 2004, 70, .	1.0	17
66	Feasibility of detecting single atoms using photonic bandgap cavities. Nanotechnology, 2004, 15, S556-S561.	1.3	51
67	Quantum Information Processing in Cavity-QED. Quantum Information Processing, 2004, 3, 75-90.	1.0	31
68	Feedback controller design for tracking a single fluorescent molecule. Applied Physics B: Lasers and Optics, 2004, 78, 653-659.	1.1	52
69	Robust quantum parameter estimation: Coherent magnetometry with feedback. Physical Review A, 2004, 69, .	1.0	87
70	Deterministic Dicke-state preparation with continuous measurement and control. Physical Review A, 2004, 70, .	1.0	125
71	Bayesian Estimation for Species Identification in Single-Molecule Fluorescence Microscopy. Biophysical Journal, 2004, 86, 3409-3422.	0.2	16
72	Quantum Kalman Filtering and the Heisenberg Limit in Atomic Magnetometry. Physical Review Letters, 2003, 91, 250801.	2.9	119

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73	Atom mirror etched from a hard drive. Applied Physics Letters, 2003, 83, 395-397.	1.5	16
74	Adaptive Homodyne Measurement of Optical Phase. Physical Review Letters, 2002, 89, 133602.	2.9	245
75	Photon Statistics and Dynamics of Fluorescence Resonance Energy Transfer. Physical Review Letters, 2002, 89, 068101.	2.9	67
76	Programmable logic devices in experimental quantum optics. Journal of the Optical Society of America B: Optical Physics, 2002, 19, 3019.	0.9	26
77	Optimization of the Q factor in photonic crystal microcavities. IEEE Journal of Quantum Electronics, 2002, 38, 850-856.	1.0	207
78	Cavity Quantum Electrodynamics: Coherence in Context. Science, 2002, 298, 1372-1377.	6.0	588
79	Quantum networks based on cavity QED. Quantum Information and Computation, 2001, 1, 7-12.	0.1	22
80	A sub-Doppler resolution double resonance molecular beam infrared spectrometer operating at chemically relevant energies ( $\sim 1/42$ eV). Review of Scientific Instruments, 2000, 71, 4032.	0.6	5
81	Rovibrational spectroscopy of the $v=6$ manifold in $12C_2H_2$ and $13C_2H_2$ . Journal of Chemical Physics, 2000, 113, 7376-7383.	1.2	24
82	Quantum feedback control and classical control theory. Physical Review A, 2000, 62, .	1.0	290
83	Full observation of single-atom dynamics in cavity QED. Applied Physics B: Lasers and Optics, 1999, 68, 1095-1108.	1.1	98
84	Quantum manipulation and measurement of single atoms in optical cavity QED. IEEE Transactions on Instrumentation and Measurement, 1999, 48, 608-612.	2.4	15
85	High-Q measurements of fused-silica microspheres in the near infrared. Optics Letters, 1998, 23, 247.	1.7	443
86	Standard quantum limits for broadband position measurement. Physical Review A, 1998, 58, 123-127.	1.0	19
87	Retroactive Quantum Jumps in a Strongly Coupled Atom-Field System. Physical Review Letters, 1998, 81, 4620-4623.	2.9	28
88	Quantum State Transfer and Entanglement Distribution among Distant Nodes in a Quantum Network. Physical Review Letters, 1997, 78, 3221-3224.	2.9	1,845
89	Inversion of Quantum Jumps in Quantum Optical Systems under Continuous Observation. Physical Review Letters, 1996, 76, 3108-3111.	2.9	93
90	Spin transfer between laser-polarized $^{129}Xe$ nuclei and surface protons. Physics Letters, Section A: General, Atomic and Solid State Physics, 1993, 184, 88-92.	0.9	42

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91	Polarization-dependent frequency shifts from Rb <sup>3</sup> He collisions. Physical Review A, 1993, 48, 558-568.	1.0	34
92	Highly polarized muonic He produced by collisions with laser optically pumped Rb. Physical Review Letters, 1993, 70, 758-761.	2.9	16
93	Efficient simulation of ultrafast quantum nonlinear optics with matrix product states. Optica, 0, , .	4.8	6