Hideo Mabuchi

List of Publications by Year in descending order

93 papers	7,532 citations	109321 35 h-index	51608 86 g-index
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. Physical Review Letters, 1997, 78, 3221-3224.	7.8	1,845
2	Cavity Quantum Electrodynamics: Coherence in Context. Science, 2002, 298, 1372-1377.	12.6	588
3	High-Q measurements of fused-silica microspheres in the near infrared. Optics Letters, 1998, 23, 247.	3.3	443
4	A fully programmable 100-spin coherent Ising machine with all-to-all connections. Science, 2016, 354, 614-617.	12.6	427
5	Quantum feedback control and classical control theory. Physical Review A, 2000, 62, .	2.5	290
6	Adaptive Homodyne Measurement of Optical Phase. Physical Review Letters, 2002, 89, 133602.	7.8	245
7	Feedback control of quantum state reduction. IEEE Transactions on Automatic Control, 2005, 50, 768-780.	5.7	223
8	Optimization of the Q factor in photonic crystal microcavities. IEEE Journal of Quantum Electronics, 2002, 38, 850-856.	1.9	207
9	Experimental investigation of performance differences between coherent Ising machines and a quantum annealer. Science Advances, 2019, 5, eaau0823.	10.3	169
10	Coherent-feedback quantum control with a dynamic compensator. Physical Review A, 2008, 78, .	2.5	160
11	Principles and applications of control in quantum systems. International Journal of Robust and Nonlinear Control, 2005, 15, 647-667.	3.7	126
12	Deterministic Dicke-state preparation with continuous measurement and control. Physical Review A, 2004, 70, .	2.5	125
13	Quantum Kalman Filtering and the Heisenberg Limit in Atomic Magnetometry. Physical Review Letters, 2003, 91, 250801.	7.8	119
14	Designing Quantum Memories with Embedded Control: Photonic Circuits for Autonomous Quantum Error Correction. Physical Review Letters, 2010, 105, 040502.	7.8	115
15	Integration of fiber-coupled high-Q SiNx microdisks with atom chips. Applied Physics Letters, 2006, 89, 131108.	3.3	112
16	Quantum Dot Photon Statistics Measured by Three-Dimensional Particle Tracking. Nano Letters, 2007, 7, 3535-3539.	9.1	105
17	Advantages of Coherent Feedback for Cooling Quantum Oscillators. Physical Review Letters, 2012, 109, 173602.	7.8	100
18	Full observation of single-atom dynamics in cavity QED. Applied Physics B: Lasers and Optics, 1999, 68, 1095-1108.	2.2	98

#	Article	IF	Citations
19	Quantum Feedback Control of Atomic Motion in an Optical Cavity. Physical Review Letters, 2004, 92, 223004.	7.8	97
20	Inversion of Quantum Jumps in Quantum Optical Systems under Continuous Observation. Physical Review Letters, 1996, 76, 3108-3111.	7.8	93
21	Robust quantum parameter estimation: Coherent magnetometry with feedback. Physical Review A, 2004, 69, .	2.5	87
22	Single Molecule Analysis Research Tool (SMART): An Integrated Approach for Analyzing Single Molecule Data. PLoS ONE, 2012, 7, e30024.	2.5	81
23	Modelling and feedback control design for quantum state preparation. Journal of Optics B: Quantum and Semiclassical Optics, 2005, 7, S179-S197.	1.4	78
24	Tracking-FCS: Fluorescence correlation spectroscopy of individual particles. Optics Express, 2005, 13, 8069.	3.4	72
25	Photon Statistics and Dynamics of Fluorescence Resonance Energy Transfer. Physical Review Letters, 2002, 89, 068101.	7.8	67
26	Protein flexibility is required for vesicle tethering at the Golgi. ELife, 2015, 4, .	6.0	59
27	Feedback controller design for tracking a single fluorescent molecule. Applied Physics B: Lasers and Optics, 2004, 78, 653-659.	2.2	52
28	Feasibility of detecting single atoms using photonic bandgap cavities. Nanotechnology, 2004, 15, S556-S561.	2.6	51
29	Squeezed light in an optical parametric oscillator network with coherent feedback quantum control. Optics Express, 2013, 21, 18371.	3.4	43
30	Spin transfer between laser-polarized 129Xe nuclei and surface protons. Physics Letters, Section A: General, Atomic and Solid State Physics, 1993, 184, 88-92.	2.1	42
31	Feedback cooling of atomic motion in cavity QED. Physical Review A, 2006, 74, .	2.5	42
32	Coherent controllers for optical-feedback cooling of quantum oscillators. Physical Review A, 2013, 87, .	2.5	42
33	Specification of photonic circuits using quantum hardware description language. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2012, 370, 5270-5290.	3.4	41
34	Physical model of continuous two-qubit parity measurement in a cavity-QED network. Physical Review A, 2009, 79, .	2.5	38
35	Quantum Noise in Large-Scale Coherent Nonlinear Photonic Circuits. Physical Review Applied, 2014, 1, .	3.8	37
36	Feedback localization of freely diffusing fluorescent particles near the optical shot-noise limit. Optics Letters, 2007, 32, 145.	3.3	36

#	Article	IF	Citations
37	Mid-infrared nonlinear optics in thin-film lithium niobate on sapphire. Optica, 2021, 8, 921.	9.3	36
38	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
39	Remnants of semiclassical bistability in the few-photon regime of cavity QED. Optics Express, 2011, 19, 24468.	3.4	35
40	Polarization-dependent frequency shifts from Rbâ^'3He collisions. Physical Review A, 1993, 48, 558-568.	2.5	34
41	Engineering a Kerr-Based Deterministic Cubic Phase Gate via Gaussian Operations. Physical Review Letters, 2020, 124, 240503.	7.8	32
42	Quantum Information Processing in Cavity-QED. Quantum Information Processing, 2004, 3, 75-90.	2.2	31
43	Topological defect formation in 1D and 2D spin chains realized by network of optical parametric oscillators. International Journal of Modern Physics B, 2016, 30, 1630014.	2.0	31
44	Femtojoule-Scale All-Optical Latching and Modulation via Cavity Nonlinear Optics. Physical Review Letters, 2013, 111, 203002.	7.8	30
45	Reduced models and design principles for half-harmonic generation in synchronously pumped optical parametric oscillators. Physical Review A, 2016, 94, .	2.5	30
46	Retroactive Quantum Jumps in a Strongly Coupled Atom-Field System. Physical Review Letters, 1998, 81, 4620-4623.	7.8	28
47	Performance bounds on single-particle tracking by fluorescence modulation. Applied Physics B: Lasers and Optics, 2006, 83, 127-133.	2.2	28
48	Precise Characterization of the Conformation Fluctuations of Freely Diffusing DNA: Beyond Rouse and Zimm. Journal of the American Chemical Society, 2009, 131, 17901-17907.	13.7	28
49	Continuous quantum error correction as classical hybrid control. New Journal of Physics, 2009, 11, 105044.	2.9	27
50	Nonlinear interferometry approach to photonic sequential logic. Applied Physics Letters, 2011, 99, .	3.3	27
51	Programmable logic devices in experimental quantum optics. Journal of the Optical Society of America B: Optical Physics, 2002, 19, 3019.	2.1	26
52	Coherent Ising machinesâ€"Quantum optics and neural network Perspectives. Applied Physics Letters, 2020, 117, .	3.3	26
53	Rovibrational spectroscopy of the v=6 manifold in 12C2H2 and 13C2H2. Journal of Chemical Physics, 2000, 113, 7376-7383.	3.0	24
54	Finesse and sensitivity gain in cavity-enhanced absorption spectroscopy of biomolecules in solution. Optics Express, 2006, 14, 10441.	3.4	24

#	Article	IF	Citations
55	Calculation of divergent photon absorption in ultrathin films of a topological insulator. Physical Review B, 2013, 88, .	3.2	24
56	Quantum networks based on cavity QED. Quantum Information and Computation, 2001, 1, 7-12.	0.3	22
57	Qubit limit of cavity nonlinear optics. Physical Review A, 2012, 85, .	2.5	20
58	Kinetic and thermodynamic framework for P4-P6 RNA reveals tertiary motif modularity and modulation of the folding preferred pathway. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, E4956-E4965.	7.1	20
59	Standard quantum limits for broadband position measurement. Physical Review A, 1998, 58, 123-127.	2.5	19
60	Fluctuations in closed-loop fluorescent particle tracking. Optics Express, 2007, 15, 7752.	3.4	19
61	Quantum filter reduction for measurement-feedback control via unsupervised manifold learning. New Journal of Physics, 2009, 11, 105043.	2.9	19
62	Derivation of Maxwell-Bloch-type equations by projection of quantum models. Physical Review A, 2008, 78, .	2.5	18
63	Proposed magnetoelectrostatic ring trap for neutral atoms. Physical Review A, 2004, 70, .	2.5	17
64	Quantum noise of free-carrier dispersion in semiconductor optical cavities. Physical Review A, 2015, 92, .	2.5	17
65	Optical Devices Based on Limit Cycles and Amplification in Semiconductor Optical Cavities. Physical Review Applied, 2015, 4, .	3.8	17
66	Single-molecule dataset (SMD): a generalized storage format for raw and processed single-molecule data. BMC Bioinformatics, 2015, 16, 3.	2.6	17
67	Quantitative tests of a reconstitution model for RNA folding thermodynamics and kinetics. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, E7688-E7696.	7.1	17
68	Highly polarized muonic He produced by collisions with laser optically pumped Rb. Physical Review Letters, 1993, 70, 758-761.	7.8	16
69	Atom mirror etched from a hard drive. Applied Physics Letters, 2003, 83, 395-397.	3.3	16
70	Bayesian Estimation for Species Identification in Single-Molecule Fluorescence Microscopy. Biophysical Journal, 2004, 86, 3409-3422.	0.5	16
71	A coherent perceptron for all-optical learning. EPJ Quantum Technology, 2015, 2, .	6.3	16
72	Quantum manipulation and measurement of single atoms in optical cavity QED. IEEE Transactions on Instrumentation and Measurement, 1999, 48, 608-612.	4.7	15

#	Article	IF	Citations
73	Adiabatic Fock-state-generation scheme using Kerr nonlinearity. Physical Review A, 2019, 100, .	2.5	15
74	Single-Molecule Fluorescence Reveals Commonalities and Distinctions among Natural and in Vitro-Selected RNA Tertiary Motifs in a Multistep Folding Pathway. Journal of the American Chemical Society, 2017, 139, 18576-18589.	13.7	14
75	The dressed atom as binary phase modulator: towards attojoule/edge optical phase-shift keying. Optics Express, 2011, 19, 6478.	3.4	11
76	Efficient sampling of ground and low-energy Ising spin configurations with a coherent Ising machine. Physical Review Research, 2022, 4, .	3.6	11
77	Transformation of Quantum Photonic Circuit Models by Term Rewriting. IEEE Photonics Journal, 2013, 5, 7500111-7500111.	2.0	7
78	Photonic circuits for iterative decoding of a class of low-density parity-check codes. New Journal of Physics, 2014, 16, 105017.	2.9	6
79	Efficient simulation of ultrafast quantum nonlinear optics with matrix product states. Optica, 0, , .	9.3	6
80	A sub-Doppler resolution double resonance molecular beam infrared spectrometer operating at chemically relevant energies (â^¼2 eV). Review of Scientific Instruments, 2000, 71, 4032.	1.3	5
81	Gauge subsystems, separability and robustness in autonomous quantum memories. New Journal of Physics, 2013, 15, 035014.	2.9	5
82	On the generalization of linear least mean squares estimation to quantum systems with non-commutative outputs. EPJ Quantum Technology, 2015, 2, .	6.3	5
83	Low-dimensional manifolds for exact representation of open quantum systems. Physical Review A, 2017, 96, .	2.5	5
84	Measurement of Mesoscale Conformational Dynamics of Freely Diffusing Molecules with Tracking FCS. Biophysical Journal, 2018, 114, 1539-1550.	0.5	5
85	Nonlinear quantum behavior of ultrashort-pulse optical parametric oscillators. Physical Review A, 2022, 105, .	2.5	5
86	Onset of non-Gaussian quantum physics in pulsed squeezing with mesoscopic fields. Optica, 2022, 9, 379.	9.3	5
87	Intramolecular Fluorescence Correlation Spectroscopy in a Feedback Tracking Microscope. Biophysical Journal, 2010, 99, 313-322.	0.5	4
88	All-mechanical quantum noise cancellation for accelerometry: broadband with momentum measurements, narrow band without. Journal of Optics (United Kingdom), 2016, 18, 034002.	2.2	3
89	Scanning microwave imaging of optically patterned Ge2Sb2Te5. Applied Physics Letters, 2019, 114, 093106.	3.3	3
90	Mechanism of stochastic switching in single-atom absorptive bistability. Physical Review A, 2018, 98, .	2.5	2

#	Article	IF	Citations
91	Laser-induced patterning for a diffraction grating using the phase change material of Ge₂Sb₂Te₅ (GST) as a spatial light modulator in X-ray optics: a proof of concept. Optical Materials Express, 2022, 12, 1408.	3.0	2
92	Van derWaals enhancement of optical atom potentials via resonant coupling to surface polaritons. Optics Express, 2009, 17, 14744.	3.4	0
93	Tracking Fluorescence Correlation Spectroscopy of Individual Biomolecules. , 2009, , .		0