

Michael Biercuk

List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

62

papers

4,664

citations

28

h-index

68

g-index

70

ext. papers

5,371

ext. citations

8.4

avg, IF

5.34

L-index

#	Paper	IF	Citations
62	Experimental Deep Reinforcement Learning for Error-Robust Gate-Set Design on a Superconducting Quantum Computer. <i>PRX Quantum</i> , 2021 , 2,	6.1	3
61	Quantum firmware and the quantum computing stack. <i>Physics Today</i> , 2021 , 74, 28-34	0.9	1
60	Error-Robust Quantum Logic Optimization Using a Cloud Quantum Computer Interface. <i>Physical Review Applied</i> , 2021 , 15,	4.3	5
59	Quantum Oscillator Noise Spectroscopy via Displaced Cat States. <i>Physical Review Letters</i> , 2021 , 126, 250506	7.4	5
58	Scalable hyperfine qubit state detection via electron shelving in the 2D5/2 and 2F7/2 manifolds in 171Yb+. <i>Physical Review A</i> , 2021 , 104,	2.6	5
57	Precision characterization of the D5/2 state and the quadratic Zeeman coefficient in Yb+171. <i>Physical Review A</i> , 2021 , 104,	2.6	1
56	Analog quantum simulation of chemical dynamics. <i>Chemical Science</i> , 2021 , 12, 9794-9805	9.4	3
55	Adaptive filtering of projective quantum measurements using discrete stochastic methods. <i>Physical Review A</i> , 2021 , 104,	2.6	1
54	Software tools for quantum control: improving quantum computer performance through noise and error suppression. <i>Quantum Science and Technology</i> , 2021 , 6, 044011	5.5	13
53	Adaptive characterization of spatially inhomogeneous fields and errors in qubit registers. <i>Npj Quantum Information</i> , 2020 , 6,	8.6	4
52	Phase-Modulated Entangling Gates Robust to Static and Time-Varying Errors. <i>Physical Review Applied</i> , 2020 , 13,	4.3	19
51	Dynamically corrected gates suppressing spatiotemporal error correlations as measured by randomized benchmarking. <i>Physical Review Research</i> , 2020 , 2,	3.9	10
50	High-power spectral beamsplitter for closely spaced frequencies. <i>Optics Express</i> , 2020 , 28, 11372-11379	3.3	
49	Simultaneous Spectral Estimation of Dephasing and Amplitude Noise on a Qubit Sensor via Optimally Band-Limited Control. <i>Physical Review Applied</i> , 2020 , 14,	4.3	4
48	Integration of spectator qubits into quantum computer architectures for hardware tune-up and calibration. <i>Physical Review A</i> , 2020 , 102,	2.6	2
47	Numeric Optimization for Configurable, Parallel, Error-Robust Entangling Gates in Large Ion Registers. <i>Advanced Quantum Technologies</i> , 2020 , 3, 2000044	4.3	3
46	Site-resolved imaging of beryllium ion crystals in a high-optical-access Penning trap with inbore optomechanics. <i>Review of Scientific Instruments</i> , 2019 , 90, 053103	1.7	8

45	Experimental quantum verification in the presence of temporally correlated noise. <i>Npj Quantum Information</i> , 2018 , 4,	8.6	21
44	Optimally band-limited spectroscopy of control noise using a qubit sensor. <i>Physical Review A</i> , 2018 , 98,	2.6	17
43	Machine Learning for Predictive Estimation of Qubit Dynamics Subject to Dephasing. <i>Physical Review Applied</i> , 2018 , 9,	4.3	9
42	Prediction and real-time compensation of qubit decoherence via machine learning. <i>Nature Communications</i> , 2017 , 8, 14106	17.4	41
41	Assessing the Progress of Trapped-Ion Processors Towards Fault-Tolerant Quantum Computation. <i>Physical Review X</i> , 2017 , 7,	9.1	47
40	Application of optimal band-limited control protocols to quantum noise sensing. <i>Nature Communications</i> , 2017 , 8, 2189	17.4	26
39	Towards fully commercial, UV-compatible fiber patch cords. <i>Optics Express</i> , 2017 , 25, 15643-15661	3.3	6
38	Effect of noise correlations on randomized benchmarking. <i>Physical Review A</i> , 2016 , 93,	2.6	42
37	Vibration-induced field fluctuations in a superconducting magnet. <i>Physical Review A</i> , 2016 , 93,	2.6	10
36	The role of master clock stability in quantum information processing. <i>Npj Quantum Information</i> , 2016 , 2,	8.6	28
35	Functional Basis for Efficient Physical Layer Classical Control in Quantum Processors. <i>Physical Review Applied</i> , 2016 , 6,	4.3	3
34	Analytically exploiting noise correlations inside the feedback loop to improve locked-oscillator performance. <i>Physical Review E</i> , 2016 , 94, 022204	2.4	4
33	Walsh-synthesized noise filters for quantum logic. <i>EPJ Quantum Technology</i> , 2015 , 2,	6.9	16
32	Phase-modulated decoupling and error suppression in qubit-oscillator systems. <i>Physical Review Letters</i> , 2015 , 114, 120502	7.4	33
31	Experimental noise filtering by quantum control. <i>Nature Physics</i> , 2014 , 10, 825-829	16.2	68
30	Experimental bath engineering for quantitative studies of quantum control. <i>Physical Review A</i> , 2014 , 89,	2.6	24
29	Programmable quantum simulation by dynamic Hamiltonian engineering. <i>New Journal of Physics</i> , 2014 , 16, 083027	2.9	16
28	Frequency stabilization of a 369 nm diode laser by nonlinear spectroscopy of Ytterbium ions in a discharge. <i>Optics Express</i> , 2014 , 22, 7210-21	3.3	12

27	Robustness of composite pulses to time-dependent control noise. <i>Physical Review A</i> , 2014 , 90,	2.6	53
26	Designing a practical high-fidelity long-time quantum memory. <i>Nature Communications</i> , 2013 , 4, 2045	17.4	43
25	Arbitrary quantum control of qubits in the presence of universal noise. <i>New Journal of Physics</i> , 2013 , 15, 095004	2.9	58
24	A high-power 626 nm diode laser system for Beryllium ion trapping. <i>Review of Scientific Instruments</i> , 2013 , 84, 063107	1.7	11
23	Engineered two-dimensional Ising interactions in a trapped-ion quantum simulator with hundreds of spins. <i>Nature</i> , 2012 , 484, 489-92	50.4	566
22	High-order noise filtering in nontrivial quantum logic gates. <i>Physical Review Letters</i> , 2012 , 109, 020501	7.4	46
21	Spectroscopy and thermometry of drumhead modes in a mesoscopic trapped-ion crystal using entanglement. <i>Physical Review Letters</i> , 2012 , 108, 213003	7.4	38
20	Phase-coherent detection of an optical dipole force by Doppler velocimetry. <i>Optics Express</i> , 2011 , 19, 10304-16	3.3	5
19	Dynamical decoupling sequence construction as a filter-design problem. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2011 , 44, 154002	1.3	104
18	Reducing sequencing complexity in dynamical quantum error suppression by Walsh modulation. <i>Physical Review A</i> , 2011 , 84,	2.6	23
17	Near-ground-state transport of trapped-ion qubits through a multidimensional array. <i>Physical Review A</i> , 2011 , 84,	2.6	56
16	Phenomenological study of decoherence in solid-state spin qubits due to nuclear spin diffusion. <i>Physical Review B</i> , 2011 , 83,	3.3	21
15	Ultrasensitive detection of force and displacement using trapped ions. <i>Nature Nanotechnology</i> , 2010 , 5, 646-50	28.7	101
14	Decoherence due to elastic Rayleigh scattering. <i>Physical Review Letters</i> , 2010 , 105, 200401	7.4	55
13	Optimized dynamical decoupling in a model quantum memory. <i>Nature</i> , 2009 , 458, 996-1000	50.4	390
12	Experimental Uhrig dynamical decoupling using trapped ions. <i>Physical Review A</i> , 2009 , 79,	2.6	86
11	Optimized noise filtration through dynamical decoupling. <i>Physical Review Letters</i> , 2009 , 103, 040501	7.4	74
10	Electrical Transport in Single-Wall Carbon Nanotubes. <i>Topics in Applied Physics</i> , 2007 , 455-493	0.5	71

9	Charge sensing in carbon-nanotube quantum dots on microsecond timescales. <i>Physical Review B</i> , 2006 , 73,	3.3	39
8	Gate-defined quantum dots on carbon nanotubes. <i>Nano Letters</i> , 2005 , 5, 1267-71	11.5	77
7	Anomalous conductance quantization in carbon nanotubes. <i>Physical Review Letters</i> , 2005 , 94, 026801	7.4	44
6	Local gate control of a carbon nanotube double quantum dot. <i>Science</i> , 2004 , 303, 655-8	33.3	167
5	Locally Addressable Tunnel Barriers within a Carbon Nanotube. <i>Nano Letters</i> , 2004 , 4, 2499-2502	11.5	28
4	Local Gating of Carbon Nanotubes. <i>Nano Letters</i> , 2004 , 4, 1-4	11.5	41
3	Low-temperature atomic-layer-deposition lift-off method for microelectronic and nanoelectronic applications. <i>Applied Physics Letters</i> , 2003 , 83, 2405-2407	3.4	147
2	Thermal properties of carbon nanotubes and nanotube-based materials. <i>Applied Physics A: Materials Science and Processing</i> , 2002 , 74, 339-343	2.6	393
1	Carbon nanotube composites for thermal management. <i>Applied Physics Letters</i> , 2002 , 80, 2767-2769	3.4	1405