Kenneth R Brown

List of Publications by Year
in descending order

105	3,871	136950	138484
papers	citations	32 h-index	58 g-index

107	107	107	2814
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Controlled preparation and vibrational excitation of single ultracold molecular hydrogen ions. Molecular Physics, 2022, 120, .	1.7	4
2	Hidden Inverses: Coherent Error Cancellation at the Circuit Level. Physical Review Applied, 2022, 17, .	3.8	17
3	Toward systematic architectural design of near-term trapped ion quantum computers. Communications of the ACM, 2022, 65, 101-109.	4.5	4
4	Carbon fibers derived from commodity polymers: A review. Carbon, 2022, 196, 422-439.	10.3	24
5	Quantum Computer Systems for Scientific Discovery. PRX Quantum, 2021, 2, .	9.2	142
6	TILT: Achieving Higher Fidelity on a Trapped-Ion Linear-Tape Quantum Computing Architecture. , 2021, , .		10
7	Materials challenges for trapped-ion quantum computers. Nature Reviews Materials, 2021, 6, 892-905.	48.7	49
8	Analyzing the effect of misalignment on single-filament carbon fiber tensile testing via stereoscopic computer vision imaging. Measurement Science and Technology, 2021, 32, 065904.	2.6	3
9	Batch Optimization of Frequency-Modulated Pulses for Robust Two-Qubit Gates in Ion Chains. Physical Review Applied, 2021, 16, .	3.8	15
10	Demonstration of Shor Encoding on a Trapped-Ion Quantum Computer. Physical Review Applied, 2021, 16, .	3.8	8
11	Between Shor and Steane: A Unifying Construction for Measuring Error Syndromes. Physical Review Letters, 2021, 127, 090505.	7.8	6
12	Constructions for measuring error syndromes in Calderbank-Shor-Steane codes between Shor and Steane methods. Physical Review A, 2021, 104, .	2.5	2
13	Fault-tolerant control of an error-corrected qubit. Nature, 2021, 598, 281-286.	27.8	170
14	Quantum Fan-out: Circuit Optimizations and Technology Modeling. , 2021, , .		2
15	Optimizing Stabilizer Parities for Improved Logical Qubit Memories. Physical Review Letters, 2021, 127, 240501.	7.8	4
16	High-Fidelity Two-Qubit Gates Using a Microelectromechanical-System-Based Beam Steering System for Individual Qubit Addressing. Physical Review Letters, 2020, 125, 150505.	7.8	43
17	Fault-tolerant weighted union-find decoding on the toric code. Physical Review A, 2020, 102, .	2.5	24
18	Resource-Efficient Quantum Computing by Breaking Abstractions. Proceedings of the IEEE, 2020, 108, 1353-1370.	21.3	16

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19	Logical performance of 9 qubit compass codes in ion traps with crosstalk errors. Quantum Science and Technology, 2020, 5, 034002.	5.8	19
20	Real-time calibration with spectator qubits. Npj Quantum Information, 2020, 6, .	6.7	22
21	Graphene reinforced carbon fibers. Science Advances, 2020, 6, eaaz4191.	10.3	87
22	Fault-tolerant compass codes. Physical Review A, 2020, 101, .	2.5	10
23	Ground-state energy estimation of the water molecule on a trapped-ion quantum computer. Npj Quantum Information, 2020, 6, .	6.7	184
24	Photon-mediated charge exchange reactions between ³⁹K atoms and ⁴⁰Ca⁺ ions in a hybrid trap. Physical Chemistry Chemical Physics, 2020, 22, 10870-10881.	2.8	7
25	Dipoleâ€“phonon quantum logic with alkaline-earth monoxide and monosulfide cations. Physical Chemistry Chemical Physics, 2020, 22, 24964-24973.	2.8	6
26	Critical faults of leakage errors on the surface code. , 2020, , .		4
27	High-fidelity Two-qubit Gates Using a MEMS-based Beam Steering System for Individual Qubit Addressing. , 2020, , .		2
28	Extended flag gadgets for low-overhead circuit verification. Physical Review A, 2020, 102, .	2.5	7
29	Quantum technologies and the National Quantum Initiative. Quantum Engineering, 2019, 1, e7.	2.5	3
30	A hybrid ion-atom trap with integrated high resolution mass spectrometer. Review of Scientific Instruments, 2019, 90, 103201.	1.3	10
31	Handling leakage with subsystem codes. New Journal of Physics, 2019, 21, 073055.	2.9	20
32	Leakage mitigation for quantum error correction using a mixed qubit scheme. Physical Review A, 2019, 100, .	2.5	14
33	Asymptotic improvements to quantum circuits via qutrits. , 2019, , .		48
34	2D Compass Codes. Physical Review X, 2019, 9, .	8.9	32
35	Controlling error orientation to improve quantum algorithm success rates. Physical Review A, 2019, 99, .	2.5	13
36	Rovibronic Spectroscopy of Sympathetically Cooled ⁴⁰CaH⁺. Journal of Physical Chemistry A, 2018, 122, 3177-3181.	2.5	8

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37	Robust 2-Qubit Gates in a Linear Ion Crystal Using a Frequency-Modulated Driving Force. Physical Review Letters, 2018, 120, 020501.	7.8	86
38	Direct measurement of Bacon-Shor code stabilizers. Physical Review A, 2018, 98, .	2.5	14
39	Quantum Error Correction Decoheres Noise. Physical Review Letters, 2018, 121, 190501.	7.8	36
40	Stabilizer Slicing: Coherent Error Cancellations in Low-Density Parity-Check Stabilizer Codes. Physical Review Letters, 2018, 121, 250502.	7.8	18
41	Simulating the performance of a distance-3 surface code in a linear ion trap. New Journal of Physics, 2018, 20, 043038.	2.9	55
42	Spectroscopy of Molecular Ions in Coulomb Crystals. Journal of Physical Chemistry Letters, 2018, 9, 5797-5804.	4.6	16
43	Entangling an arbitrary pair of qubits in a long ion crystal. Physical Review A, 2018, 98, .	2.5	28
44	Comparing Zeeman qubits to hyperfine qubits in the context of the surface code: <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mmultiscripts><mml:mi>Yb</mml:mi><mml:none /><mml:mo>+</mml:mo><mml:mprescripts /><mml:none /><mml:mn>174</mml:mn></mml:mmultiscripts></mml:math> and <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mmultiscripts><mml:mi>Yb</mml:mi><mml:none /><mml:mo>+</mml:mo><mml:mprescripts /><mml:none /><mml:mn>171</mml:mn></mml:mmultiscripts>	2.5	28
45	Fault tolerance with bare ancillary qubits for a [[7,1,3]] code. Physical Review A, 2017, 96, .	2.5	24
46	Reassigning the CaH+ 11Î£ â† 21Î£ vibronic transition with CaD+. Journal of Chemical Physics, 2017, 147, 214309.	3.0	6
47	Fault-tolerant quantum error detection. Science Advances, 2017, 3, e1701074.	10.3	113
48	Optimized surface code communication in superconducting quantum computers. , 2017, , .		25
49	Analytical error analysis of Clifford gates by the fault-path tracer method. Quantum Information Processing, 2016, 15, 3065-3079.	2.2	7
50	Vibronic Spectroscopy of Sympathetically Cooled CaH⁺. ChemPhysChem, 2016, 17, 3764-3768.	2.1	11
51	Co-designing a scalable quantum computer with trapped atomic ions. Npj Quantum Information, 2016, 2, .	6.7	151
52	Errors and pseudothresholds for incoherent and coherent noise. Physical Review A, 2016, 94, .	2.5	34
53	Transport implementation of the Bernsteinâ€“Vazirani algorithm with ion qubits. New Journal of Physics, 2016, 18, 083030.	2.9	29
54	Magic state distillation and gate compilation in quantum algorithms for quantum chemistry. International Journal of Quantum Chemistry, 2015, 115, 1296-1304.	2.0	12

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55	Error compensation of single-qubit gates in a surface-electrode ion trap using composite pulses. Physical Review A, 2015, 92, .	2.5	42
56	Modulating carrier and sideband coupling strengths in a standing-wave gate beam. Physical Review A, 2015, 92, .	2.5	9
57	Laser-cooled atomic ions as probes of molecular ions. , 2015, , .		0
58	Observation of vibrational overtones by single-molecule resonant photodissociation. Nature Communications, 2015, 6, 7825.	12.8	25
59	Comparison of a quantum error-correction threshold for exact and approximate errors. Physical Review A, 2015, 91, .	2.5	29
60	Sympathetic cooling of molecular ion motion to the ground state. New Journal of Physics, 2015, 17, 035009.	2.9	31
61	Compiler Management of Communication and Parallelism for Quantum Computation. , 2015, , .		22
62	Transformed composite sequences for improved qubit addressing. Physical Review A, 2014, 90, .	2.5	27
63	Robustness of composite pulses to time-dependent control noise. Physical Review A, 2014, 90, .	2.5	71
64	Heating rates and ion-motion control in a<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi mathvariant="sans-serif">Y</mml:mi></mml:math>-junction surface-electrode trap. Physical Review A, 2014, 89, .	2.5	40
65	Large-scale modular quantum-computer architecture with atomic memory and photonic interconnects. Physical Review A, 2014, 89, .	2.5	400
66	Probing the Electron. Science, 2014, 343, 255-256.	12.6	0
67	Identifying Single Molecular Ions by Resolved Sideband Measurements. Journal of Physical Chemistry A, 2013, 117, 9725-9731.	2.5	20
68	Spatially uniform single-qubit gate operations with near-field microwaves and composite pulse compensation. New Journal of Physics, 2013, 15, 083053.	2.9	32
69	Quantum rotations. , 2013, , .		10
70	Quantum rotations. Computer Architecture News, 2013, 41, 166-176.	2.5	9
71	Modular cryostat for ion trapping with surface-electrode ion traps. Review of Scientific Instruments, 2013, 84, 043112.	1.3	16
72	Approximation of realistic errors by Clifford channels and Pauli measurements. Physical Review A, 2013, 87, .	2.5	35

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73	Comparison of ancilla preparation and measurement procedures for the Steane [[7,1,3]] code on a model ion-trap quantum computer. Physical Review A, 2013, 88, .	2.5	12
74	Topological subsystem codes from graphs and hypergraphs. Physical Review A, 2012, 86, .	2.5	10
75	Challenges of laser-cooling molecular ions. New Journal of Physics, 2011, 13, 063023.	2.9	70
76	Demonstration of integrated microscale optics in surface-electrode ion traps. New Journal of Physics, 2011, 13, 103005.	2.9	50
77	Chemistry from photons. Nature Chemistry, 2010, 2, 76-77.	13.6	0
78	Analytical solution of thermal magnetization on memory stabilizer structures. Physical Review A, 2010, 82, .	2.5	0
79	Detection of single-ion spectra by Coulomb-crystal heating. Physical Review A, 2010, 81, .	2.5	24
80	Multi-qubit compensation sequences. New Journal of Physics, 2010, 12, 015002.	2.9	30
81	Making classical ground-state spin computing fault-tolerant. Physical Review E, 2010, 82, 031106.	2.1	6
82	Sympathetic Heating Spectroscopy: Probing Molecular Ions with Laser-Cooled Atomic Ions. , 2010, , .		0
83	Resource requirements for fault-tolerant quantum simulation: The ground state of the transverse Ising model. Physical Review A, 2009, 79, .	2.5	41
84	Monte Carlo analysis of critical phenomenon of the Ising model on memory stabilizer structures. Physical Review A, 2009, 80, .	2.5	2
85	Design and characterization of a planar trap. Journal of Physics B: Atomic, Molecular and Optical Physics, 2009, 42, 154006.	1.5	9
86	A two-dimensional lattice ion trap for quantum simulation. Journal of Applied Physics, 2009, 105, .	2.5	48
87	Suppression of Heating Rates in Cryogenic Surface-Electrode Ion Traps. Physical Review Letters, 2008, 100, 013001.	7.8	177
88	Energy protection arguments fail in the interaction picture. Physical Review A, 2007, 76, .	2.5	13
89	Compact, filtered diode laser system for precision spectroscopy. Optics Letters, 2007, 32, 572.	3.3	37
90	Loading and characterization of a printed-circuit-board atomic ion trap. Physical Review A, 2007, 75, .	2.5	50

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91	Laser ablation loading of a surface-electrode ion trap. Physical Review A, 2007, 76, .	2.5	44
92	Experimental investigation of planar ion traps. Physical Review A, 2006, 73, .	2.5	93
93	Boseâ€“Einstein condensation in a mm-scale Ioffeâ€“Pritchard trap. Applied Physics B: Lasers and Optics, 2006, 82, 533-538.	2.2	10
94	Limitations of Quantum Simulation Examined by Simulating a Pairing Hamiltonian Using Nuclear Magnetic Resonance. Physical Review Letters, 2006, 97, 050504.	7.8	78
95	Full protection of superconducting qubit systems from coupling errors. Physical Review B, 2005, 72, .	3.2	14
96	Bounds on the entanglement attainable from unitary transformed thermal states in liquid-state nuclear magnetic resonance. Physical Review A, 2005, 71, .	2.5	9
97	Transmission spectrum of an optical cavity containingNatoms. Physical Review A, 2004, 69, .	2.5	16
98	Arbitrarily accurate composite pulse sequences. Physical Review A, 2004, 70, .	2.5	163
99	Effects of a random noisy oracle on search algorithm complexity. Physical Review A, 2003, 68, .	2.5	55
100	Scalable ion trap quantum computation in decoherence-free subspaces with pairwise interactions only. Physical Review A, 2003, 67, .	2.5	16
101	Deterministic optical Fock-state generation. Physical Review A, 2003, 67, .	2.5	47
102	Quantum computing with quantum dots on quantum linear supports. Physical Review A, 2001, 65, .	2.5	33
103	Coherence-Preserving Quantum Bits. Physical Review Letters, 2001, 87, 247902.	7.8	58
104	Quantum Chemical Analysis ofpara-Substitution Effects on the Electronic Structure of Phenylnitrenium Ions in the Gas Phase and Aqueous Solution. Journal of the American Chemical Society, 1998, 120, 11778-11783.	13.7	50
105	Generating Fault-Tolerant Cluster States from Crystal Structures. Quantum - the Open Journal for Quantum Science, 0, 4, 295.	0.0	12