Jarrod McClean

List of Publications by Year
in descending order

50 papers	14,888 citations	94433 37 h-index	214800 47 g-index
50 all docs	50 docs citations	50 times ranked	6199 citing authors

#	Article	IF	Citations
1	Time-crystalline eigenstate order on a quantum processor. Nature, 2022, 601, 531-536.	27.8	138
2	Quantum advantage in learning from experiments. Science, 2022, 376, 1182-1186.	12.6	145
3	Quantum approximate optimization of non-planar graph problems on a planar superconducting processor. Nature Physics, 2021, 17, 332-336.	16.7	262
4	Efficient and noise resilient measurements for quantum chemistry on near-term quantum computers. Npj Quantum Information, 2021, 7, .	6.7	118
5	Focus beyond Quadratic Speedups for Error-Corrected Quantum Advantage. PRX Quantum, 2021, 2, .	9.2	60
6	Low rank representations for quantum simulation of electronic structure. Npj Quantum Information, 2021, 7, .	6.7	54
7	Error Mitigation via Verified Phase Estimation. PRX Quantum, 2021, 2, .	9.2	40
8	Power of data in quantum machine learning. Nature Communications, 2021, 12, 2631.	12.8	236
9	Accurately computing the electronic properties of a quantum ring. Nature, 2021, 594, 508-512.	27.8	47
10	Even More Efficient Quantum Computations of Chemistry Through Tensor Hypercontraction. PRX Quantum, 2021, 2, .	9.2	93
11	Exponential suppression of bit or phase errors with cyclic error correction. Nature, 2021, 595, 383-387.	27.8	172
12	Low-Depth Mechanisms for Quantum Optimization. PRX Quantum, 2021, 2, .	9.2	17
13	Variational quantum algorithms. Nature Reviews Physics, 2021, 3, 625-644.	26.6	930
14	Layerwise learning for quantum neural networks. Quantum Machine Intelligence, 2021, 3, 1.	4.8	130
15	What the foundations of quantum computer science teach us about chemistry. Journal of Chemical Physics, 2021, 155, 150901.	3.0	9
16	Information scrambling in quantum circuits. Science, 2021, 374, 1479-1483.	12.6	127
17	From molecules to quantum computers, a research retrospective. Computing in Science and Engineering, 2021, , 1-1.	1.2	0
18	Virtual Distillation for Quantum Error Mitigation. Physical Review X, 2021, 11, .	8.9	71

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19	Realizing topologically ordered states on a quantum processor. Science, 2021, 374, 1237-1241.	12.6	186
20	Increasing the Representation Accuracy of Quantum Simulations of Chemistry without Extra Quantum Resources. Physical Review X, 2020, 10, .	8.9	89
21	Hartree-Fock on a superconducting qubit quantum computer. Science, 2020, 369, 1084-1089.	12.6	453
22	OpenFermion: the electronic structure package for quantum computers. Quantum Science and Technology, 2020, 5, 034014.	5.8	214
23	Decoding quantum errors with subspace expansions. Nature Communications, 2020, 11, 636.	12.8	79
24	Using models to improve optimizers for variational quantum algorithms. Quantum Science and Technology, 2020, 5, 044008.	5.8	46
25	Strategies for quantum computing molecular energies using the unitary coupled cluster ansatz. Quantum Science and Technology, 2019, 4, 014008.	5.8	381
26	Quantum simulation of chemistry with sublinear scaling in basis size. Npj Quantum Information, 2019, 5, .	6.7	56
27	Quantum supremacy using a programmable superconducting processor. Nature, 2019, 574, 505-510.	27.8	4,148
28	Witnessing eigenstates for quantum simulation of Hamiltonian spectra. Science Advances, 2018, 4, eaap9646.	10.3	142
29	Low-Depth Quantum Simulation of Materials. Physical Review X, 2018, 8, .	8.9	187
30	Quantum Simulation of Electronic Structure with Linear Depth and Connectivity. Physical Review Letters, 2018, 120, 110501.	7.8	243
31	Barren plateaus in quantum neural network training landscapes. Nature Communications, 2018, 9, 4812.	12.8	845
32	Encoding Electronic Spectra in Quantum Circuits with Linear T Complexity. Physical Review X, 2018, 8, .	8.9	154
33	The Promise and Challenges of Quantum Computing for Energy Storage. Joule, 2018, 2, 810-813.	24.0	16
34	Quantum Chemistry Calculations on a Trapped-Ion Quantum Simulator. Physical Review X, 2018, 8, .	8.9	342
35	Application of fermionic marginal constraints to hybrid quantum algorithms. New Journal of Physics, 2018, 20, 053020.	2.9	94
36	Hybrid quantum-classical hierarchy for mitigation of decoherence and determination of excited states. Physical Review A, 2017, 95, .	2.5	335

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37	Error Sensitivity to Environmental Noise in Quantum Circuits for Chemical State Preparation. Journal of Chemical Theory and Computation, 2016, 12, 3097-3108.	5.3	27
38	The theory of variational hybrid quantum-classical algorithms. New Journal of Physics, 2016, 18, 023023.	2.9	1,186
39	The ‹scp›B‹/scp›ravyiâ€“‹scp›K‹/scp›itaev transformation: Properties and applications. International Journal of Quantum Chemistry, 2015, 115, 1431-1441.	2.0	93
40	Compact wavefunctions from compressed imaginary time evolution. RSC Advances, 2015, 5, 102277-102283.	3.6	17
41	Chemical basis of Trotter-Suzuki errors in quantum chemistry simulation. Physical Review A, 2015, 91, .	2.5	133
42	Boson sampling for molecular vibronic spectra. Nature Photonics, 2015, 9, 615-620.	31.4	230
43	Exploiting Locality in Quantum Computation for Quantum Chemistry. Journal of Physical Chemistry Letters, 2014, 5, 4368-4380.	4.6	93
44	A variational eigenvalue solver on a photonic quantum processor. Nature Communications, 2014, 5, 4213.	12.8	2,210
45	Feynmanâ€™s clock, a new variational principle, and parallel-in-time quantum dynamics. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, E3901-9.	7.1	18
46	Patterns of local aromaticity in graphene oxyradicals. Journal of Materials Chemistry, 2011, 21, 3404.	6.7	13
47	Local Electronic Structure and Stability of Pentacene Oxyradicals. Journal of Physical Chemistry C, 2010, 114, 5429-5437.	3.1	20
48	A Diffusion Monte Carlo Study of the Oâˆ’H Bond Dissociation of Phenol. Journal of Physical Chemistry A, 2010, 114, 9832-9835.	2.5	15
49	Qubitization of Arbitrary Basis Quantum Chemistry Leveraging Sparsity and Low Rank Factorization. Quantum - the Open Journal for Quantum Science, 0, 3, 208.	0.0	89
50	Improved Fault-Tolerant Quantum Simulation of Condensed-Phase Correlated Electrons via Trotterization. Quantum - the Open Journal for Quantum Science, 0, 4, 296.	0.0	85