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	Quantum supremacy using a programmable superconducting processor. Nature, 2019, 574, 505-510.	27.8	4,148
2	A variational eigenvalue solver on a photonic quantum processor. Nature Communications, 2014, 5, 4213.	12.8	2,210
3	The theory of variational hybrid quantum-classical algorithms. New Journal of Physics, 2016, 18, 023023.	2.9	1,186
4	Variational quantum algorithms. Nature Reviews Physics, 2021, 3, 625-644.	26.6	930
5	Barren plateaus in quantum neural network training landscapes. Nature Communications, 2018, 9, 4812.	12.8	845
6	Hartree-Fock on a superconducting qubit quantum computer. Science, 2020, 369, 1084-1089.	12.6	453
7	Strategies for quantum computing molecular energies using the unitary coupled cluster ansatz. Quantum Science and Technology, 2019, 4, 014008.	5.8	381
8	Quantum Chemistry Calculations on a Trapped-Ion Quantum Simulator. Physical Review X, 2018, 8, .	8.9	342
9	Hybrid quantum-classical hierarchy for mitigation of decoherence and determination of excited states. Physical Review A, 2017, 95, .	2.5	335
10	Quantum approximate optimization of non-planar graph problems on a planar superconducting processor. Nature Physics, 2021, 17, 332-336.	16.7	262
11	Quantum Simulation of Electronic Structure with Linear Depth and Connectivity. Physical Review Letters, 2018, 120, 110501.	7.8	243
12	Power of data in quantum machine learning. Nature Communications, 2021, 12, 2631.	12.8	236
13	Boson sampling for molecular vibronic spectra. Nature Photonics, 2015, 9, 615-620.	31.4	230
14	OpenFermion: the electronic structure package for quantum computers. Quantum Science and Technology, 2020, 5, 034014.	5.8	214
15	Low-Depth Quantum Simulation of Materials. Physical Review X, 2018, 8, .	8.9	187
16	Realizing topologically ordered states on a quantum processor. Science, 2021, 374, 1237-1241.	12.6	186
17	Exponential suppression of bit or phase errors with cyclic error correction. Nature, 2021, 595, 383-387.	27.8	172
18	Encoding Electronic Spectra in Quantum Circuits with Linear T Complexity. Physical Review X, 2018, 8, .	8.9	154

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19	Quantum advantage in learning from experiments. Science, 2022, 376, 1182-1186.	12.6	145
20	Witnessing eigenstates for quantum simulation of Hamiltonian spectra. Science Advances, 2018, 4, eaap9646.	10.3	142
21	Time-crystalline eigenstate order on a quantum processor. Nature, 2022, 601, 531-536.	27.8	138
22	Chemical basis of Trotter-Suzuki errors in quantum chemistry simulation. Physical Review A, 2015, 91, .	2.5	133
23	Layerwise learning for quantum neural networks. Quantum Machine Intelligence, 2021, 3, 1.	4.8	130
24	Information scrambling in quantum circuits. Science, 2021, 374, 1479-1483.	12.6	127
25	Efficient and noise resilient measurements for quantum chemistry on near-term quantum computers. Npj Quantum Information, 2021, 7, .	6.7	118
26	Application of fermionic marginal constraints to hybrid quantum algorithms. New Journal of Physics, 2018, 20, 053020.	2.9	94
27	Exploiting Locality in Quantum Computation for Quantum Chemistry. Journal of Physical Chemistry Letters, 2014, 5, 4368-4380.	4.6	93
28	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
29	Even More Efficient Quantum Computations of Chemistry Through Tensor Hypercontraction. PRX Quantum, 2021, 2, .	9.2	93
30	Increasing the Representation Accuracy of Quantum Simulations of Chemistry without Extra Quantum Resources. Physical Review X, 2020, 10, .	8.9	89
31	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
32	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
33	Decoding quantum errors with subspace expansions. Nature Communications, 2020, 11, 636.	12.8	79
34	Virtual Distillation for Quantum Error Mitigation. Physical Review X, 2021, 11, .	8.9	71
35	Focus beyond Quadratic Speedups for Error-Corrected Quantum Advantage. PRX Quantum, 2021, 2, .	9.2	60
36	Quantum simulation of chemistry with sublinear scaling in basis size. Npj Quantum Information, 2019, 5, .	6.7	56

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37	Low rank representations for quantum simulation of electronic structure. Npj Quantum Information, 2021, 7, .	6.7	54
38	Accurately computing the electronic properties of a quantum ring. Nature, 2021, 594, 508-512.	27.8	47
39	Using models to improve optimizers for variational quantum algorithms. Quantum Science and Technology, 2020, 5, 044008.	5.8	46
40	Error Mitigation via Verified Phase Estimation. PRX Quantum, 2021, 2, .	9.2	40
41	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
42	Local Electronic Structure and Stability of Pentacene Oxyradicals. Journal of Physical Chemistry C, 2010, 114, 5429-5437.	3.1	20
43	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
44	Compact wavefunctions from compressed imaginary time evolution. RSC Advances, 2015, 5, 102277-102283.	3.6	17
45	Low-Depth Mechanisms for Quantum Optimization. PRX Quantum, 2021, 2, .	9.2	17
46	The Promise and Challenges of Quantum Computing for Energy Storage. Joule, 2018, 2, 810-813.	24.0	16
47	A Diffusion Monte Carlo Study of the Oâ^'H Bond Dissociation of Phenol. Journal of Physical Chemistry A, 2010, 114, 9832-9835.	2.5	15
48	Patterns of local aromaticity in graphene oxyradicals. Journal of Materials Chemistry, 2011, 21, 3404.	6.7	13
49	What the foundations of quantum computer science teach us about chemistry. Journal of Chemical Physics, 2021, 155, 150901.	3.0	9
50	From molecules to quantum computers, a research retrospective. Computing in Science and Engineering, 2021, , 1-1.	1.2	0