Martin Roetteler

List of Publications by Year
in descending order

| 53 papers | 2,154 citations | 394421
19 h-index | 454955
30 g-index |
|---|---|---|---|
| 55 all docs | 55 docs citations | 55 times ranked | 1557 citing authors |

#	Article	IF	Citations
1	Toward Quantum Computing for High-Energy Excited States in Molecular Systems: Quantum Phase Estimations of Core-Level States. Journal of Chemical Theory and Computation, 2021, 17, 201-210.	5.3	16
2	Quantum Computer Systems for Scientific Discovery. PRX Quantum, 2021, 2, .	9.2	142
3	Quantum computing enhanced computational catalysis. Physical Review Research, 2021, 3, .	3.6	96
4	Enumerating Optimal Quantum Circuits using Spectral Classification. , 2020, , .		5
5	Quantum programming languages. Nature Reviews Physics, 2020, 2, 709-722.	26.6	42
6	Quantum Circuits for Functionally Controlled NOT Gates. , 2020, , .		1
7	Improved Quantum Circuits for Elliptic Curve Discrete Logarithms. Lecture Notes in Computer Science, 2020, , 425-444.	1.3	36
8	Implementing Grover Oracles for Quantum Key Search on AES and LowMC. Lecture Notes in Computer Science, 2020, , 280-310.	1.3	88
9	Enabling accuracy-aware Quantum compilers using symbolic resource estimation. , 2020, 4, 1-26.		5
10	LUT-Based Hierarchical Reversible Logic Synthesis. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2019, 38, 1675-1688.	2.7	24
11	Downfolding of many-body Hamiltonians using active-space models: Extension of the sub-system embedding sub-algebras approach to unitary coupled cluster formalisms. Journal of Chemical Physics, 2019, 151, 014107.	3.0	57
12	The Role of Multiplicative Complexity in Compiling Low T-count Oracle Circuits. , 2019, , .		12
13	Reversible Pebbling Game for Quantum Memory Management. , 2019, , .		20
14	Q#. , 2018, , .		148
15	Shorter Stabilizer Circuits via Bruhat Decomposition and Quantum Circuit Transformations. IEEE Transactions on Information Theory, 2018, 64, 4729-4738.	2.4	32
16	Programming quantum computers using design automation. , 2018, , .		25
17	Quantum Circuits for Floating-Point Arithmetic. Lecture Notes in Computer Science, 2018, , 162-174.	1.3	28
18	Quantum Computing: Codebreaking and Beyond. IEEE Security and Privacy, 2018, 16, 22-36.	1.2	17

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19	A best-fit mapping algorithm to facilitate ESOP-decomposition in Clifford+T quantum network synthesis. , 2018, , .		5
20	Hierarchical Reversible Logic Synthesis Using LUTs. , 2017, , .		16
21	Design automation for quantum architectures. , 2017, , .		3
22	Experimental comparison of two quantum computing architectures. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 3305-3310.	7.1	326
23	Verified Compilation of Space-Efficient Reversible Circuits. Lecture Notes in Computer Science, 2017, , 3-21.	1.3	23
24	Quantum Resource Estimates for Computing Elliptic Curve Discrete Logarithms. Lecture Notes in Computer Science, 2017, , 241-270.	1.3	96
25	REVS: A Tool for Space-Optimized Reversible Circuit Synthesis. Lecture Notes in Computer Science, 2017, , 90-101.	1.3	9
26	Factoring with qutrits: Shor's algorithm on ternary and metaplectic quantum architectures. Physical Review A, 2017, 96, .	2.5	64
27	Design automation and design space exploration for quantum computers. , 2017, , .		21
28	Comparing the architectures of the first programmable quantum computers. , 2017, , .		1
29	Tools for Quantum and Reversible Circuit Compilation. Lecture Notes in Computer Science, 2017, , 3-16.	1.3	2
30	Factoring using 2n+2 qubits with Toffoli based modular multiplication. Quantum Information and Computation, 2017, 17, 673-684.	0.3	44
31	Improved Bounded-Strength Decoupling Schemes for Local Hamiltonians. IEEE Transactions on Information Theory, 2016, 62, 2881-2894.	2.4	0
32	Applying Grover's Algorithm to AES: Quantum Resource Estimates. Lecture Notes in Computer Science, 2016, , 29-43.	1.3	110
33	Quantum Error Correction. , 2016, , 1698-1703.		0
34	Quantum arithmetic and numerical analysis using Repeat-Until-Success circuits. Quantum Information and Computation, 2016, , 134-178.	0.3	15
35	Improved quantum ternary arithmetic. Quantum Information and Computation, 2016, 16, 862-884.	0.3	5
36	Efficient synthesis of probabilistic quantum circuits with fallback. Physical Review A, 2015, 91, .	2.5	39

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37	Efficient Synthesis of Universal Repeat-Until-Success Quantum Circuits. Physical Review Letters, 2015, 114, 080502.	7.8	87
38	A note on quantum related-key attacks. Information Processing Letters, 2015, 115, 40-44.	0.6	38
39	A Meet-in-the-Middle Algorithm for Fast Synthesis of Depth-Optimal Quantum Circuits. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2013, 32, 818-830.	2.7	328
40	Leveraging automorphisms of quantum codes for fault-tolerant quantum computation. , 2013, , .		3
41	QuaFL. , 2013, , .		11
42	Quantum rejection sampling. ACM Transactions on Computation Theory, 2013, 5, 1-33.	0.7	25
43	Abstract resource cost derivation for logical quantum circuit descriptions. , 2013, , .		3
44	Identification of a reversible quantum gate: assessing the resources. New Journal of Physics, 2013, 15, 103019.	2.9	10
45	Quantum rejection sampling. , 2012, , .		9
46	Symmetry-Assisted Adversaries for Quantum State Generation. , 2011, , .		15
47	Design of Synchronous â€œPlug & Playâ€•QKD-WDM-PON for Efficient Quantum Communications. , 2011, , .		1
48	A hybrid nano-CMOS architecture for defect and fault tolerance. ACM Journal on Emerging Technologies in Computing Systems, 2009, 5, 1-26.	2.3	7
49	Fault-Tolerant Computing Using a Hybrid Nano-CMOS Architecture. , 2008, , .		2
50	RaceTM. , 2008, , .		4
51	Quadratic Form Expansions for Unitaries. Lecture Notes in Computer Science, 2008, , 29-46.	1.3	8
52	Mutually unbiased bases, spherical designs, and frames. , 2005, , .		23
53	ROS: Resource-constrained Oracle Synthesis for Quantum Computers. Electronic Proceedings in Theoretical Computer Science, EPTCS, 0, 318, 119-130.	0.8	3