David Doty

List of Publications by Year
in descending order

58 papers	1,094 citations	687220 13 h-index	501076 28 g-index
66 all docs	66 docs citations	66 times ranked	534 citing authors

#	Article	IF	Citations
1	Diverse and robust molecular algorithms using reprogrammable DNA self-assembly. Nature, 2019, 567, 366-372.	13.7	198
2	Theory of algorithmic self-assembly. Communications of the ACM, 2012, 55, 78-88.	3.3	100
3	Deterministic function computation with chemical reaction networks. Natural Computing, 2014, 13, 517-534.	1.8	88
4	The Tile Assembly Model is Intrinsically Universal. , 2012, , .		77
5	Limitations of self-assembly at temperature 1. Theoretical Computer Science, 2011, 412, 145-158.	0.5	49
6	Randomized Self-Assembly for Exact Shapes. SIAM Journal on Computing, 2010, 39, 3521-3552.	0.8	33
7	Rate-independent computation in continuous chemical reaction networks. , 2014, , .		32
8	Stable leader election in population protocols requires linear time. Distributed Computing, 2018, 31, 257-271.	0.7	32
9	Parallelism and Time in Hierarchical Self-Assembly. , 2012, , .		31
10	Strong Fault-Tolerance for Self-Assembly with Fuzzy Temperature. , 2010, , .		27
11	Negative Interactions in Irreversible Self-assembly. Algorithmica, 2013, 66, 153-172.	1.0	26
12	Timing in chemical reaction networks. , 2014, , .		26
13	Speed Faults in Computation by Chemical Reaction Networks. Lecture Notes in Computer Science, 2014, , 16-30.	1.0	22
14	Leaderless deterministic chemical reaction networks. Natural Computing, 2015, 14, 213-223.	1.8	21
15	Stable Leader Election in Population Protocols Requires Linear Time. Lecture Notes in Computer Science, 2015, , 602-616.	1.0	21
16	Deterministic Function Computation with Chemical Reaction Networks. Lecture Notes in Computer Science, 2012, , 25-42.	1.0	20
17	Scalable, Time-Responsive, Digital, Energy-Efficient Molecular Circuits Using DNA Strand Displacement. Lecture Notes in Computer Science, 2011, , 25-36.	1.0	18
18	Probability 1 computation with chemical reaction networks. Natural Computing, 2016, 15, 245-261.	1.8	17

#	Article	IF	Citations
19	Randomized Self-Assembly for Exact Shapes. , 2009, , .		16
20	Negative Interactions in Irreversible Self-assembly. Lecture Notes in Computer Science, 2011, , 37-48.	1.0	13
21	Title is missing!. Theory of Computing, 2013, 9, 1-29.	0.3	13
22	Finite-state dimension and real arithmetic. Information and Computation, 2007, 205, 1640-1651.	0.5	12
23	Fast Algorithmic Self-assembly of Simple Shapes Using Random Agitation. Lecture Notes in Computer Science, 2014, , 20-36.	1.0	12
24	A Domain-Specific Language for Programming in the Tile Assembly Model. Lecture Notes in Computer Science, 2009, , 25-34.	1.0	12
25	Efficient Size Estimation and Impossibility of Termination in Uniform Dense Population Protocols. , 2019, , .		12
26	Constructive Dimension and Turing Degrees. Theory of Computing Systems, 2009, 45, 740-755.	0.7	11
27	Speed faults in computation by chemical reaction networks. Distributed Computing, 2017, 30, 373-390.	0.7	11
28	Random Number Selection in Self-assembly. Lecture Notes in Computer Science, 2009, , 143-157.	1.0	11
29	Limitations of Self-assembly at Temperature One. Lecture Notes in Computer Science, 2009, , 35-44.	1.0	11
30	Feasible Depth. Lecture Notes in Computer Science, 2007, , 228-237.	1.0	10
31	Dimension Extractors and Optimal Decompression. Theory of Computing Systems, 2008, 43, 425-463.	0.7	9
32	Thermodynamic Binding Networks. Lecture Notes in Computer Science, 2017, , 249-266.	1.0	8
33	Design of Geometric Molecular Bonds. IEEE Transactions on Molecular, Biological, and Multi-Scale Communications, 2017, 3, 13-23.	1.4	7
34	Time-Optimal Self-Stabilizing Leader Election in Population Protocols. , 2021, , .		7
35	Producibility in Hierarchical Self-assembly. Lecture Notes in Computer Science, 2014, , 142-154.	1.0	7
36	Constructive Dimension and Weak Truth-Table Degrees. Lecture Notes in Computer Science, 2007, , 63-72.	1.0	7

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37	Producibility in hierarchical self-assembly. Natural Computing, 2016, 15, 41-49.	1.8	6
38	Probability 1 Computation with Chemical Reaction Networks. Lecture Notes in Computer Science, 2014, , 37-52.	1.0	6
39	Leaderless Deterministic Chemical Reaction Networks. Lecture Notes in Computer Science, 2013, , 46-60.	1.0	5
40	Parallelism and Time in Hierarchical Self-Assembly. SIAM Journal on Computing, 2017, 46, 661-709.	0.8	4
41	Finite-State Dimension and Real Arithmetic. Lecture Notes in Computer Science, 2006, , 537-547.	1.0	4
42	Composable Computation in Discrete Chemical Reaction Networks. , 2019, , .		4
43	Computational complexity of atomic chemical reaction networks. Natural Computing, 2018, 17, 677-691.	1.8	3
44	A time and space optimal stable population protocol solving exact majority. , 2022, , .		3
45	Designing ordered nucleic acid self-assembly processes. Current Opinion in Structural Biology, 2015, 31, 57-63.	2.6	2
46	Program Size and Temperature in Self-Assembly. Algorithmica, 2015, 72, 884-899.	1.0	2
47	Democratic, existential, and consensus-based output conventions in stable computation by chemical reaction networks. Natural Computing, 2018, 17, 97-108.	1.8	2
48	Composable computation in discrete chemical reaction networks. Distributed Computing, 2021, 34, 437-461.	0.7	2
49	Robustness of Expressivity in Chemical Reaction Networks. Lecture Notes in Computer Science, 2016, , 52-66.	1.0	2
50	Pushdown dimension. Theoretical Computer Science, 2007, 381, 105-123.	0.5	1
51	Design of geometric molecular bonds. , 2016, , .		1
52	Programming Substrate-Independent Kinetic Barriers With Thermodynamic Binding Networks. IEEE/ACM Transactions on Computational Biology and Bioinformatics, 2021, 18, 283-295.	1.9	1
53	Ppsim: A Software Package for Efficiently Simulating and Visualizing Population Protocols. Lecture Notes in Computer Science, 2021, , 245-253.	1.0	1
54	A survey of size counting in population protocols. Theoretical Computer Science, 2021, 894, 91-91.	0.5	1

#	Article	IF	Citations
55	Computational Complexity of Atomic Chemical Reaction Networks. Lecture Notes in Computer Science, 2018, , 212-226.	1.0	1
56	Brief Announcement: A Time and Space Optimal Stable Population Protocol Solving Exact Majority. , 2021, , .		0
57	Randomized Self-Assembly. , 2016, , 1759-1767.		0
58	Hierarchical Self-Assembly. , 2016, , 903-909.		0