Thomas E Ouldridge

List of Publications by Year
in descending order

65	3,967	172386	133188
papers	citations	29 h-index	59 g-index

72	72	72	2684
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	On the biophysics and kinetics of toehold-mediated DNA strand displacement. Nucleic Acids Research, 2013, 41, 10641-10658.	6.5	423
2	Structural, mechanical, and thermodynamic properties of a coarse-grained DNA model. Journal of Chemical Physics, 2011, 134, 085101.	1.2	379
3	Introducing improved structural properties and salt dependence into a coarse-grained model of DNA. Journal of Chemical Physics, 2015, 142, 234901.	1.2	267
4	Sequence-dependent thermodynamics of a coarse-grained DNA model. Journal of Chemical Physics, 2012, 137, 135101.	1.2	265
5	DNA hybridization kinetics: zippering, internal displacement and sequence dependence. Nucleic Acids Research, 2013, 41, 8886-8895.	6.5	203
6	Coarse-graining DNA for simulations of DNA nanotechnology. Physical Chemistry Chemical Physics, 2013, 15, 20395.	1.3	173
7	Programmable energy landscapes for kinetic control of DNA strand displacement. Nature Communications, 2014, 5, 5324.	5.8	172
8	DNA Nanotweezers Studied with a Coarse-Grained Model of DNA. Physical Review Letters, 2010, 104, 178101.	2.9	162
9	Guiding the folding pathway of DNA origami. Nature, 2015, 525, 82-86.	13.7	146
10	A nucleotide-level coarse-grained model of RNA. Journal of Chemical Physics, 2014, 140, 235102.	1.2	117
11	Optimizing DNA Nanotechnology through Coarse-Grained Modeling: A Two-Footed DNA Walker. ACS Nano, 2013, 7, 2479-2490.	7.3	88
12	Force-Induced Rupture of a DNA Duplex: From Fundamentals to Force Sensors. ACS Nano, 2015, 9, 11993-12003.	7.3	86
13	Direct Simulation of the Self-Assembly of a Small DNA Origami. ACS Nano, 2016, 10, 1724-1737.	7.3	86
14	Plectoneme tip bubbles: Coupled denaturation and writhing in supercoiled DNA. Scientific Reports, 2015, 5, 7655.	1.6	84
15	Fundamental Limits to Cellular Sensing. Journal of Statistical Physics, 2016, 162, 1395-1424.	0.5	74
16	Modeling DNA-Strand Displacement Reactions in the Presence of Base-Pair Mismatches. Journal of the American Chemical Society, 2020, 142, 11451-11463.	6.6	70
17	Coarse-grained simulations of DNA overstretching. Journal of Chemical Physics, 2013, 138, 085101.	1.2	66
18	Design of hidden thermodynamic driving for non-equilibrium systems via mismatch elimination during DNA strand displacement. Nature Communications, 2020, 11, 2562.	5.8	66

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19	DNA hairpins destabilize duplexes primarily by promoting melting rather than by inhibiting hybridization. Nucleic Acids Research, 2015, 43, 6181-6190.	6.5	54
20	Modelling Toehold-Mediated RNA Strand Displacement. Biophysical Journal, 2015, 108, 1238-1247.	0.2	54
21	Extracting bulk properties of self-assembling systems from small simulations. Journal of Physics Condensed Matter, 2010, 22, 104102.	0.7	47
22	Biochemical Machines for the Interconversion of Mutual Information and Work. Physical Review Letters, 2017, 118, 028101.	2.9	46
23	Coarse-grained simulation of DNA using LAMMPS. European Physical Journal E, 2018, 41, 57.	0.7	46
24	Thermodynamics of Computational Copying in Biochemical Systems. Physical Review X, 2017, 7, .	2.8	44
25	New Langevin and gradient thermostats for rigid body dynamics. Journal of Chemical Physics, 2015, 142, 144114.	1.2	37
26	The self-assembly of DNA Holliday junctions studied with a minimal model. Journal of Chemical Physics, 2009, 130, 065101.	1.2	36
27	DNA Cruciform Arms Nucleate through a Correlated but Asynchronous Cooperative Mechanism. Journal of Physical Chemistry B, 2012, 116, 11616-11625.	1.2	36
28	DNA nanotechnology: understanding and optimisation through simulation. Molecular Physics, 2015, 113, 1-15.	0.8	34
29	Kinetics of RNA and RNA:DNA Hybrid Strand Displacement. ACS Synthetic Biology, 2021, 10, 3066-3073.	1.9	34
30	DNA bipedal motor walking dynamics: an experimental and theoretical study of the dependency on step size. Nucleic Acids Research, 2018, 46, 1553-1561.	6.5	33
31	Fundamental Costs in the Production and Destruction of Persistent Polymer Copies. Physical Review Letters, 2017, 118, 158103.	2.9	31
32	Simulating a burnt-bridges DNA motor with a coarse-grained DNA model. Natural Computing, 2014, 13, 535-547.	1.8	30
33	Coarse-Grained Modelling of DNA and DNA Self-Assembly. Springer Theses, 2012, , .	0.0	29
34	Self-Limiting Polymerization of DNA Origami Subunits with Strain Accumulation. ACS Nano, 2020, 14, 17428-17441.	7.3	29
35	A Primer on the oxDNA Model of DNA: When to Use it, How to Simulate it and How to Interpret the Results. Frontiers in Molecular Biosciences, 2021, 8, 693710.	1.6	29
36	The effect of topology on the structure and free energy landscape of DNA kissing complexes. Journal of Chemical Physics, 2012, 136, 215102.	1.2	28

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37	Modelling DNA origami self-assembly at the domain level. Journal of Chemical Physics, 2015, 143, 165102.	1.2	28
38	Multiscale simulations of anisotropic particles combining molecular dynamics and Greenâ€™s function reaction dynamics. Journal of Chemical Physics, 2017, 146, 114106.	1.2	28
39	The importance of thermodynamics for molecular systems, and the importance of molecular systems for thermodynamics. Natural Computing, 2018, 17, 3-29.	1.8	28
40	The Role of Loop Stacking in the Dynamics of DNA Hairpin Formation. Journal of Physical Chemistry B, 2014, 118, 14326-14335.	1.2	27
41	Identifying Physical Causes of Apparent Enhanced Cyclization of Short DNA Molecules with a Coarse-Grained Model. Journal of Chemical Theory and Computation, 2019, 15, 4660-4672.	2.3	22
42	Handhold-Mediated Strand Displacement: A Nucleic Acid Based Mechanism for Generating Far-from-Equilibrium Assemblies through Templated Reactions. ACS Nano, 2021, 15, 3272-3283.	7.3	22
43	Chemical Boltzmann Machines. Lecture Notes in Computer Science, 2017, , 210-231.	1.0	21
44	Inferring bulk self-assembly properties from simulations of small systems with multiple constituent species and small systems in the grand canonical ensemble. Journal of Chemical Physics, 2012, 137, 144105.	1.2	19
45	Multi-scale coarse-graining for the study of assembly pathways in DNA-brick self-assembly. Journal of Chemical Physics, 2018, 148, 134910.	1.2	18
46	Synthetic biology and bioelectrochemical tools for electrogenetic system engineering. Science Advances, 2022, 8, eabm5091.	4.7	17
47	Characterizing the bending and flexibility induced by bulges in DNA duplexes. Journal of Chemical Physics, 2015, 142, 165101.	1.2	16
48	What we learn from the learning rate. Journal of Statistical Mechanics: Theory and Experiment, 2017, 2017, 063502.	0.9	15
49	The Robustness of Proofreading to Crowding-Induced Pseudo-Processivity in the MAPK Pathway. Biophysical Journal, 2014, 107, 2425-2435.	0.2	14
50	Nonequilibrium correlations in minimal dynamical models of polymer copying. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 1946-1951.	3.3	14
51	Biochemical Szilard engines for memory-limited inference. New Journal of Physics, 2019, 21, 063022.	1.2	11
52	In situ Generation of RNA Complexes for Synthetic Molecular Strand-Displacement Circuits in Autonomous Systems. Nano Letters, 2021, 21, 265-271.	4.5	11
53	Physical limitations of work extraction from temporal correlations. Physical Review E, 2019, 99, 042115.	0.8	7
54	Designing the optimal bit: balancing energetic cost, speed and reliability. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2017, 473, 20170117.	1.0	6

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55	Geometric integrator for Langevin systems with quaternion-based rotational degrees of freedom and hydrodynamic interactions. Journal of Chemical Physics, 2017, 147, 224103.	1.2	6
56	Quasi-robust control of biochemical reaction networks via stochastic morphing. Journal of the Royal Society Interface, 2021, 18, 20200985.	1.5	6
57	Edge-effects dominate copying thermodynamics for finite-length molecular oligomers. New Journal of Physics, 2021, 23, 063061.	1.2	4
58	Building an RNA-Based Toggle Switch Using Inhibitory RNA Aptamers. ACS Synthetic Biology, 2022, 11, 562-569.	1.9	4
59	High rates of fuel consumption are not required by insulating motifs to suppress retroactivity in biochemical circuits. Engineering Biology, 2017, 1, 86-99.	0.8	3
60	Minimal mechanism for cyclic templating of length-controlled copolymers under isothermal conditions. Journal of Chemical Physics, 2022, 156, 074103.	1.2	3
61	Optimizing enzymatic catalysts for rapid turnover of substrates with low enzyme sequestration. Biological Cybernetics, 2020, 114, 653-668.	0.6	2
62	Modelling DNA Tweezers. Springer Theses, 2012, , 93-100.	0.0	0
63	Thermodynamic Properties of Model DNA. Springer Theses, 2012, , 71-92.	0.0	0
64	Students go through the gears at the iGEM competition for engineering biology. Biochemist, 2019, 41, 58-61.	0.2	0
65	Free energy landscapes of DNA and its assemblies: perspectives from coarse-grained modelling. Frontiers of Nanoscience, 2022, , 195-210.	0.3	0