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List of Publications by Year
in descending order

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101 papers	9,850 citations	50276 46 h-index	36028 97 g-index
113 all docs	113 docs citations	113 times ranked	10780 citing authors

#	Article	IF	Citations
1	Non-equilibrium conditions inside rock pores drive fission, maintenance and selection of coacervate protocells. Nature Chemistry, 2022, 14, 32-39.	13.6	45
2	Water cycles in a Hadean CO2 atmosphere drive the evolution of long DNA. Nature Physics, 2022, 18, 579-585.	16.7	20
3	Structured sequences emerge from random pool when replicated by templated ligation. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	24
4	tRNA sequences can assemble into a replicator. ELife, 2021, 10, .	6.0	7
5	Kinetic Microscale Thermophoresis for Simultaneous Measurement of Binding Affinity and Kinetics. Angewandte Chemie - International Edition, 2021, 60, 13988-13995.	13.8	26
6	Kinetic Microscale Thermophoresis for Simultaneous Measurement of Binding Affinity and Kinetics. Angewandte Chemie, 2021, 133, 14107-14114.	2.0	5
7	A new model for silicification of cyanobacteria in Proterozoic tidal flats. Geobiology, 2021, 19, 438-449.	2.4	16
8	Nonenzymatic, Templateâ€Free Polymerization of 3â€™,5â€™ Cyclic Guanosine Monophosphate on Mineral Surfaces. ChemSystemsChem, 2021, 3, .	2.6	7
9	Heat flows in rock cracks naturally optimize salt compositions for ribozymes. Nature Chemistry, 2021, 13, 1038-1045.	13.6	16
10	Self-Assembly of Informational Polymers by Templated Ligation. Physical Review X, 2021, 11, .	8.9	5
11	Acidâ€Catalyzed RNAâ€Oligomerization from 3â€™,5â€™â€cGMP. Chemistry - A European Journal, 2021, 27, 17581-17585.	5.1	11
12	Thermal Habitat for RNA Amplification and Accumulation. Physical Review Letters, 2020, 125, 048104.	7.8	34
13	CO ₂ reduction driven by a pH gradient. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 22873-22879.	7.1	84
14	Biologically mediated silicification of marine cyanobacteria and implications for the Proterozoic fossil record. Geology, 2020, 48, 862-866.	4.4	31
15	Heated gas bubbles enrich, crystallize, dry, phosphorylate and encapsulate prebiotic molecules. Nature Chemistry, 2019, 11, 779-788.	13.6	66
16	Periodic Melting of Oligonucleotides by Oscillating Salt Concentrations Triggered by Microscale Water Cycles Inside Heated Rock Pores. Angewandte Chemie - International Edition, 2019, 58, 13155-13160.	13.8	26
17	Periodic Melting of Oligonucleotides by Oscillating Salt Concentrations Triggered by Microscale Water Cycles Inside Heated Rock Pores. Angewandte Chemie, 2019, 131, 13289-13294.	2.0	18
18	Stability of a time-homogeneous system of money and antimoney in an agent-based random economy. Physica A: Statistical Mechanics and Its Applications, 2019, 520, 232-249.	2.6	3

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19	Continuous nonenzymatic cross-replication of DNA strands with in situ activated DNA oligonucleotides. Chemical Science, 2019, 10, 5807-5814.	7.4	26
20	Cooperative Ligation Breaks Sequence Symmetry and Stabilizes Early Molecular Replication. Physical Review X, 2019, 9, .	8.9	9
21	Fission of Lipid-Vesicles by Membrane Phase Transitions in Thermal Convection. Scientific Reports, 2019, 9, 18808.	3.3	16
22	Optochemical disequilibrium to measure biomolecule charge. Physical Review E, 2018, 98, .	2.1	1
23	Probing the Cooperativity of Binding Networks with High-Throughput Thermophoresis. Analytical Chemistry, 2017, 89, 2592-2597.	6.5	3
24	Steep pH Gradients and Directed Colloid Transport in a Microfluidic Alkaline Hydrothermal Pore. Angewandte Chemie - International Edition, 2017, 56, 2340-2344.	13.8	61
25	Steep pH Gradients and Directed Colloid Transport in a Microfluidic Alkaline Hydrothermal Pore. Angewandte Chemie, 2017, 129, 2380-2384.	2.0	48
26	Reversible Switching of Cooperating Replicators. Physical Review Letters, 2017, 118, 078102.	7.8	7
27	Common coding variant in SERPINA1 increases the risk for large artery stroke. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 3613-3618.	7.1	46
28	RÃ¼cktitelbild: Heatâ€Flowâ€Driven Oligonucleotide Gelation Separates Singleâ€Base Differences (Angew.) Tj ETQq0 0 0 rgBT /Overloc	2.0	0
29	Emergence of Life from Trapped Nucleotides? Non-Equilibrium ÂBehavior of Oligonucleotides in Thermal Gradients. Synlett, 2016, 28, 56-63.	1.8	6
30	Quantitative thermophoretic study of disease-related protein aggregates. Scientific Reports, 2016, 6, 22829.	3.3	48
31	Photochemical Microscale Electrophoresis Allows Fast Quantification of Biomolecule Binding. Journal of the American Chemical Society, 2016, 138, 5363-5370.	13.7	11
32	Probing of molecular replication and accumulation in shallow heat gradients through numerical simulations. Physical Chemistry Chemical Physics, 2016, 18, 20153-20159.	2.8	14
33	Heatâ€Flowâ€Driven Oligonucleotide Gelation Separates Singleâ€Base Differences. Angewandte Chemie, 2016, 128, 6788-6791.	2.0	3
34	Heatâ€Flowâ€Driven Oligonucleotide Gelation Separates Singleâ€Base Differences. Angewandte Chemie - International Edition, 2016, 55, 6676-6679.	13.8	12
35	Single-Molecule Imaging in Living Drosophila Embryos with Reflected Light-Sheet Microscopy. Biophysical Journal, 2016, 110, 939-946.	0.5	44
36	Understanding the similarity in thermophoresis between single- and double-stranded DNA or RNA. Physical Review E, 2015, 91, 062709.	2.1	13

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37	Thermooptical molecule sieve on the microscale. Applied Physics Letters, 2015, 106, 073508.	3.3	10
38	Heat flux across an open pore enables the continuous replication and selection of oligonucleotides towards increasing length. Nature Chemistry, 2015, 7, 203-208.	13.6	151
39	Thermophoresis in Nanoliter Droplets to Quantify Aptamer Binding. Angewandte Chemie - International Edition, 2014, 53, 7948-7951.	13.8	20
40	Dry Polymerization of 3â€²,5â€²â€Cyclic GMP to Long Strands of RNA. ChemBioChem, 2014, 15, 879-883.	2.6	60
41	Why Charged Molecules Move Across a Temperature Gradient: The Role of Electric Fields. Physical Review Letters, 2014, 112, 198101.	7.8	145
42	Detection of Thermoresponsive Polymer Phase Transition in Dilute Low-Volume Format by Microscale Thermophoretic Depletion. Analytical Chemistry, 2014, 86, 6797-6803.	6.5	12
43	Thermophoretic Manipulation of Molecules inside Living Cells. Journal of the American Chemical Society, 2014, 136, 15955-15960.	13.7	31
44	Microscale thermophoresis quantifies biomolecular interactions under previously challenging conditions. Methods, 2013, 59, 301-315.	3.8	501
45	A Monoclonal Antibody (MCPR3-7) Interfering with the Activity of Proteinase 3 by an Allosteric Mechanism. Journal of Biological Chemistry, 2013, 288, 26635-26648.	3.4	21
46	Escalation of polymerization in a thermal gradient. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 8030-8035.	7.1	133
47	THERMAL SOLUTIONS FOR MOLECULAR EVOLUTION. International Journal of Modern Physics B, 2012, 26, 1230017.	2.0	7
48	Insertion of T4-lysozyme (T4L) can be a useful tool for studying olfactory-related GPCRs. Molecular BioSystems, 2012, 8, 1750.	2.9	11
49	Direct Detection of Antibody Concentration and Affinity in Human Serum Using Microscale Thermophoresis. Analytical Chemistry, 2012, 84, 3523-3530.	6.5	77
50	Labelâ€Free Microscale Thermophoresis Discriminates Sites and Affinity of Proteinâ€“Ligand Binding. Angewandte Chemie - International Edition, 2012, 51, 10656-10659.	13.8	150
51	Thermal, Autonomous Replicator Made from Transfer RNA. Physical Review Letters, 2012, 108, 238104.	7.8	13
52	Optical fluid and biomolecule transport with thermal fields. Physical Chemistry Chemical Physics, 2011, 13, 9918.	2.8	25
53	Molecular Interaction Studies Using Microscale Thermophoresis. Assay and Drug Development Technologies, 2011, 9, 342-353.	1.2	655
54	A Robust and Rapid Method of Producing Soluble, Stable, and Functional G-Protein Coupled Receptors. PLoS ONE, 2011, 6, e23036.	2.5	48

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55	Designer Lipid-Like Peptides: A Class of Detergents for Studying Functional Olfactory Receptors Using Commercial Cell-Free Systems. PLoS ONE, 2011, 6, e25067.	2.5	52
56	Emergence of Information Transmission in a Prebiotic RNA Reactor. Physical Review Letters, 2011, 107, 018101.	7.8	24
57	Peptide surfactants for cell-free production of functional G protein-coupled receptors. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 9049-9054.	7.1	104
58	Thermophoretic melting curves quantify the conformation and stability of RNA and DNA. Nucleic Acids Research, 2011, 39, e52-e52.	14.5	62
59	Thermophoresis of single stranded DNA. Electrophoresis, 2010, 31, 279-286.	2.4	82
60	Optical Thermophoresis for Quantifying the Buffer Dependence of Aptamer Binding. Angewandte Chemie - International Edition, 2010, 49, 2238-2241.	13.8	203
61	Protein-binding assays in biological liquids using microscale thermophoresis. Nature Communications, 2010, 1, 100.	12.8	907
62	Thermal Trap for DNA Replication. Physical Review Letters, 2010, 104, 188102.	7.8	122
63	Hybridization kinetics is different inside cells. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 21649-21654.	7.1	92
64	Light driven microflow in ice. Applied Physics Letters, 2009, 94, 113901.	3.3	25
65	An Optical Conveyor for Molecules. Nano Letters, 2009, 9, 4264-4267.	9.1	33
66	Light driven Microfluidics. , 2009, , .		1
67	Nanorods as Wavelengthâ€Selective Absorption Centers in the Visible and Nearâ€Infrared Regions of the Electromagnetic Spectrum. Advanced Materials, 2008, 20, 506-510.	21.0	95
68	Toward Self-Assembly of Nanoparticles on Polymeric Microshells: Near-IR Release and Permeability. ACS Nano, 2008, 2, 1807-1816.	14.6	110
69	Microscale Fluid Flow Induced by Thermoviscous Expansion Along a Traveling Wave. Physical Review Letters, 2008, 100, 164501.	7.8	52
70	Optically driven fluid flow along arbitrary microscale patterns using thermoviscous expansion. Journal of Applied Physics, 2008, 104, 104701.	2.5	59
71	Observation of Slip Flow in Thermophoresis. Physical Review Letters, 2008, 101, 168301.	7.8	84
72	Melting curve analysis in a snapshot. Applied Physics Letters, 2007, 91, .	3.3	34

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73	Thermodiffusion of Charged Colloids:Â Single-Particle Diffusion. Langmuir, 2007, 23, 1674-1683.	3.5	140
74	Size Determination of (Bio)conjugated Water-Soluble Colloidal Nanoparticles:â€‰ A Comparison of Different Techniques. Journal of Physical Chemistry C, 2007, 111, 11552-11559.	3.1	164
75	Nanoparticles Distribution Control by Polymers:â€‰ Aggregates versus Nonaggregates. Journal of Physical Chemistry C, 2007, 111, 555-564.	3.1	94
76	Extreme accumulation of nucleotides in simulated hydrothermal pore systems. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 9346-9351.	7.1	307
77	Nonequilibrium thermodynamics of wealth condensation. Physica A: Statistical Mechanics and Its Applications, 2006, 369, 714-722.	2.6	9
78	Thermophoretic Depletion Follows Boltzmann Distribution. Physical Review Letters, 2006, 96, 168301.	7.8	219
79	Optothermal Molecule Trapping by Opposing Fluid Flow with Thermophoretic Drift. Physical Review Letters, 2006, 97, 038103.	7.8	93
80	Why molecules move along a temperature gradient. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 19678-19682.	7.1	839
81	Two-dimensional colloidal crystals formed by thermophoresis and convection. Applied Physics Letters, 2005, 86, 131921.	3.3	87
82	Convective polymerase chain reaction around micro immersion heater. Applied Physics Letters, 2005, 87, 183901.	3.3	35
83	The Role of Metal Nanoparticles in Remote Release of Encapsulated Materials. Nano Letters, 2005, 5, 1371-1377.	9.1	533
84	Thermal force approach to molecular evolution. Physical Biology, 2004, 1, P1-P8.	1.8	80
85	Thermophoresis of DNA determined by microfluidic fluorescence. European Physical Journal E, 2004, 15, 277-286.	1.6	123
86	PCR BY THERMAL CONVECTION. Modern Physics Letters B, 2004, 18, 775-784.	1.9	47
87	Imaging Neuronal Seal Resistance on Silicon Chip using Fluorescent Voltage-Sensitive Dye. Biophysical Journal, 2004, 87, 1351-1359.	0.5	62
88	Transfer potentials shape and equilibrate monetary systems. Physica A: Statistical Mechanics and Its Applications, 2003, 321, 605-618.	2.6	21
89	Nontrivial bookkeeping: a mechanical perspective. Physica A: Statistical Mechanics and Its Applications, 2003, 324, 266-271.	2.6	18
90	Multiplexed DNA Quantification by Spectroscopic Shift of Two Microsphere Cavities. Biophysical Journal, 2003, 85, 1974-1979.	0.5	264

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91	Lock-in by molecular multiplication. Applied Physics Letters, 2003, 83, 5554-5556.	3.3	17
92	Exponential DNA Replication by Laminar Convection. Physical Review Letters, 2003, 91, 158103.	7.8	122
93	Boron-content dependence of Fano resonances in p-type silicon. Journal of Physics Condensed Matter, 2003, 15, 2923-2931.	1.8	6
94	Computer-based photon-counting lock-in for phase detection at the shot-noise limit. Optics Letters, 2002, 27, 1418.	3.3	25
95	Protein detection by optical shift of a resonant microcavity. Applied Physics Letters, 2002, 80, 4057-4059.	3.3	839
96	Trapping of DNA by Thermophoretic Depletion and Convection. Physical Review Letters, 2002, 89, 188103.	7.8	342
97	No correlation of focal contacts and close adhesion by comparing GFP-vinculin and fluorescence interference of DiI. European Biophysics Journal, 2001, 30, 17-26.	2.2	69
98	Adhesion proteins for a tight neuronâ€“electrode contact. Journal of Neuroscience Methods, 2001, 104, 133-141.	2.5	39
99	Assets and liabilities are the momentum of particles and antiparticles displayed in Feynman-graphs. Physica A: Statistical Mechanics and Its Applications, 2001, 290, 491-500.	2.6	15
100	Fast Voltage Transients in Capacitive Silicon-to-Cell Stimulation Detected with a Luminescent Molecular Electronic Probe. Physical Review Letters, 2001, 86, 2905-2908.	7.8	26
101	Fluorescence Interferometry of Neuronal Cell Adhesion on Microstructured Silicon. Physical Review Letters, 1998, 81, 5241-5244.	7.8	156