Yann R Chemla

List of Publications by Year
in descending order

57 papers	5,102 citations	159585 30 h-index	149698 56 g-index
70 all docs	70 docs citations	70 times ranked	4592 citing authors

#	Article	IF	Citations
1	Recent Advances in Optical Tweezers. Annual Review of Biochemistry, 2008, 77, 205-228.	11.1	995
2	Mechanical Processes in Biochemistry. Annual Review of Biochemistry, 2004, 73, 705-748.	11.1	721
3	Differential detection of dual traps improves the spatial resolution of optical tweezers. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 9006-9011.	7.1	277
4	Intersubunit coordination in a homomeric ring ATPase. Nature, 2009, 457, 446-450.	27.8	266
5	Mechanism of Force Generation of a Viral DNA Packaging Motor. Cell, 2005, 122, 683-692.	28.9	258
6	Optical tweezers in single-molecule biophysics. Nature Reviews Methods Primers, 2021, 1, .	21.2	229
7	Ultrahigh-resolution optical trap with single-fluorophore sensitivity. Nature Methods, 2011, 8, 335-340.	19.0	176
8	Direct observation of structure-function relationship in a nucleic acidâ€"processing enzyme. Science, 2015, 348, 352-354.	12.6	161
9	High-resolution, long-term characterization of bacterial motility using optical tweezers. Nature Methods, 2009, 6, 831-835.	19.0	139
10	Characterization of Photoactivated Singlet Oxygen Damage in Single-Molecule Optical Trap Experiments. Biophysical Journal, 2009, 97, 2128-2136.	0.5	115
11	In vivo optical trapping indicates kinesinâ€™s stall force is reduced by dynein during intracellular transport. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 3381-3386.	7.1	110
12	Substrate interactions and promiscuity in a viral DNA packaging motor. Nature, 2009, 461, 669-673.	27.8	107
13	Proofreading dynamics of a processive DNA polymerase. EMBO Journal, 2009, 28, 2794-2802.	7.8	98
14	Engineering of a superhelicase through conformational control. Science, 2015, 348, 344-347.	12.6	88
15	Exact Solutions for Kinetic Models of Macromolecular Dynamics. Journal of Physical Chemistry B, 2008, 112, 6025-6044.	2.6	81
16	Structural dynamics of E. coli single-stranded DNA binding protein reveal DNA wrapping and unwrapping pathways. ELife, 2015, 4, .	6.0	78
17	Defining Single Molecular Forces Required for Notch Activation Using Nano Yoyo. Nano Letters, 2016, 16, 3892-3897.	9.1	73
18	Sequence-dependent base pair stepping dynamics in XPD helicase unwinding. ELife, 2013, 2, e00334.	6.0	72

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19	A Nutrient-Tunable Bistable Switch Controls Motility in Salmonella enterica Serovar Typhimurium. MBio, 2014, 5, e01611-14.	4.1	71
20	Escherichia coli swimming is robust against variations in flagellar number. ELife, 2014, 3, e01916.	6.0	65
21	ALS/FTLD-Linked Mutations in FUS Glycine Residues Cause Accelerated Gelation and Reduced Interactions with Wild-Type FUS. Molecular Cell, 2020, 80, 666-681.e8.	9.7	62
22	A Comparative Study of Multivariate and Univariate Hidden Markov Modelings in Time-Binned Single-Molecule FRET Data Analysis. Journal of Physical Chemistry B, 2010, 114, 5386-5403.	2.6	57
23	Methods in Statistical Kinetics. Methods in Enzymology, 2010, 475, 221-257.	1.0	53
24	A Promiscuous DNA Packaging Machine from Bacteriophage T4. PLoS Biology, 2011, 9, e1000592.	5.6	53
25	Chemotactic adaptation kinetics of individual <i>Escherichia coli</i> cells. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 9869-9874.	7.1	44
26	Constructing modular and universal single molecule tension sensor using protein G to study mechano-sensitive receptors. Scientific Reports, 2016, 6, 21584.	3.3	44
27	Extreme mechanical diversity of human telomeric DNA revealed by fluorescence-force spectroscopy. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 8350-8359.	7.1	41
28	The Behavioral Space of Zebrafish Locomotion and Its Neural Network Analog. PLoS ONE, 2015, 10, e0128668.	2.5	39
29	Single-Molecule Studies of Viral DNA Packaging. Advances in Experimental Medicine and Biology, 2012, 726, 549-584.	1.6	38
30	High-Resolution â€œFleezersâ€: Dual-Trap Optical Tweezers Combined with Single-Molecule Fluorescence Detection. Methods in Molecular Biology, 2017, 1486, 183-256.	0.9	37
31	Mechanistic constraints from the substrate concentration dependence of enzymatic fluctuations. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 15739-15744.	7.1	34
32	The dynamic pause-unpackaging state, an off-translocation recovery state of a DNA packaging motor from bacteriophage T4. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 20000-20005.	7.1	34
33	FliZ Induces a Kinetic Switch in Flagellar Gene Expression. Journal of Bacteriology, 2010, 192, 6477-6481.	2.2	32
34	Elasticity of the transition state for oligonucleotide hybridization. Nucleic Acids Research, 2017, 45, 547-555.	14.5	29
35	Better biomolecule thermodynamics from kinetics. Journal of Chemical Physics, 2011, 135, 015102.	3.0	27
36	Mapping cell surface adhesion by rotation tracking and adhesion footprinting. Scientific Reports, 2017, 7, 44502.	3.3	27

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37	High-Resolution Dual-Trap Optical Tweezers with Differential Detection: Instrument Design. Cold Spring Harbor Protocols, 2009, 2009, pdb.ip73.	0.3	24
38	Regulation of Rep helicase unwinding by an auto-inhibitory subdomain. Nucleic Acids Research, 2019, 47, 2523-2532.	14.5	24
39	High-Resolution Optical Tweezers Combined With Single-Molecule Confocal Microscopy. Methods in Enzymology, 2017, 582, 137-169.	1.0	23
40	Revealing the base pair stepping dynamics of nucleic acid motor proteins with optical traps. Physical Chemistry Chemical Physics, 2010, 12, 3080.	2.8	22
41	Highâ€resolution, hybrid optical trapping methods, and their application to nucleic acid processing proteins. Biopolymers, 2016, 105, 704-714.	2.4	19
42	High-Resolution Dual-Trap Optical Tweezers with Differential Detection: An Introduction: Figure 1.. Cold Spring Harbor Protocols, 2009, 2009, pdb.top60.	0.3	16
43	Blue Light Is a Universal Signal for <i>Escherichia coli</i> Chemoreceptors. Journal of Bacteriology, 2019, 201, .	2.2	15
44	Free-energy simulations reveal molecular mechanism for functional switch of a DNA helicase. ELife, 2018, 7, .	6.0	15
45	Multiple kinesins induce tension for smooth cargo transport. ELife, 2019, 8, .	6.0	13
46	Ultrashort Nucleic Acid Duplexes Exhibit Long Wormlike Chain Behavior with Force-Dependent Edge Effects. Physical Review Letters, 2018, 120, 068102.	7.8	12
47	High-Resolution Dual-Trap Optical Tweezers with Differential Detection: Alignment of Instrument Components. Cold Spring Harbor Protocols, 2009, 2009, pdb.ip76-pdb.ip76.	0.3	10
48	A viral genome packaging ring-ATPase is a flexibly coordinated pentamer. Nature Communications, 2021, 12, 6548.	12.8	10
49	Kinetic and structural mechanism for DNA unwinding by a non-hexameric helicase. Nature Communications, 2021, 12, 7015.	12.8	10
50	Altering the speed of a DNA packaging motor from bacteriophage T4. Nucleic Acids Research, 2017, 45, 11437-11448.	14.5	9
51	High-Resolution Dual-Trap Optical Tweezers with Differential Detection: Managing Environmental Noise. Cold Spring Harbor Protocols, 2009, 2009, pdb.ip72-pdb.ip72.	0.3	8
52	DNA target sequence identification mechanism for dimer-active protein complexes. Nucleic Acids Research, 2013, 41, 2416-2427.	14.5	8
53	Ultraslow relaxation of confined DNA. Science, 2014, 345, 380-381.	12.6	8
54	High-Resolution Dual-Trap Optical Tweezers with Differential Detection: Data Collection and Instrument Calibration: Figure 1.. Cold Spring Harbor Protocols, 2009, 2009, pdb.ip74.	0.3	7

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55	Switch-like control of helicase processivity by single-stranded DNA binding protein. ELife, 2021, 10, .	6.0	7
56	High-Resolution Dual-Trap Optical Tweezers with Differential Detection: Minimizing the Influence of Measurement Noise. Cold Spring Harbor Protocols, 2009, 2009, pdb.ip75-pdb.ip75.	0.3	5
57	<title>Superconducting quantum interference device detection of magnetically tagged micro-organisms</title>. , 2002, 4576, 122.		0