Vincent Croquette

List of Publications by Year
in descending order

90 papers	7,007 citations	81900 39 h-index	58581 82 g-index
99 all docs	99 docs citations	99 times ranked	5155 citing authors

#	Article	IF	Citations
1	Magnetic Tweezers: Micromanipulation and Force Measurement at the Molecular Level. Biophysical Journal, 2002, 82, 3314-3329.	0.5	841
2	Behavior of Supercoiled DNA. Biophysical Journal, 1998, 74, 2016-2028.	0.5	466
3	Stretched and overwound DNA forms a Pauling-like structure with exposed bases. Proceedings of the National Academy of Sciences of the United States of America, 1998, 95, 14152-14157.	7.1	330
4	Single-molecule analysis of DNA uncoiling by a type II topoisomerase. Nature, 2000, 404, 901-904.	27.8	325
5	Twisting and stretching single DNA molecules. Progress in Biophysics and Molecular Biology, 2000, 74, 115-140.	2.9	317
6	pH-dependent specific binding and combing of DNA. Biophysical Journal, 1997, 73, 2064-2070.	0.5	289
7	Friction and torque govern the relaxation of DNA supercoils by eukaryotic topoisomerase IB. Nature, 2005, 434, 671-674.	27.8	287
8	Diaroyl(methanato)boron Difluoride Compounds as Medium-Sensitive Two-Photon Fluorescent Probes. Chemistry - A European Journal, 2004, 10, 1445-1455.	3.3	191
9	Single-molecule assay reveals strand switching and enhanced processivity of UvrD. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 6439-6444.	7.1	177
10	Preferential relaxation of positively supercoiled DNA by E. coli topoisomerase IV in single-molecule and ensemble measurements. Genes and Development, 2000, 14, 2881-2892.	5.9	175
11	Measurement of the Torque on a Single Stretched and Twisted DNA Using Magnetic Tweezers. Physical Review Letters, 2009, 102, 078301.	7.8	171
12	Structural plasticity of single chromatin fibers revealed by torsional manipulation. Nature Structural and Molecular Biology, 2006, 13, 444-450.	8.2	156
13	Direct Observation of DNA Distortion by the RSC Complex. Molecular Cell, 2006, 21, 417-425.	9.7	146
14	Wringing Out DNA. Physical Review Letters, 2006, 96, 178102.	7.8	144
15	Real-time observation of bacteriophage T4 gp41 helicase reveals an unwinding mechanism. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 19790-19795.	7.1	139
16	The Eckhaus instability for traveling waves. Physica D: Nonlinear Phenomena, 1992, 55, 269-286.	2.8	130
17	Active and passive mechanisms of helicases. Nucleic Acids Research, 2010, 38, 5518-5526.	14.5	129
18	Cellâ€“cell contacts confine public goods diffusion inside Pseudomonas aeruginosa clonal microcolonies. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 12577-12582.	7.1	122

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19	Human Upf1 is a highly processive RNA helicase and translocase with RNP remodelling activities. Nature Communications, 2015, 6, 7581.	12.8	120
20	Supercoiling and denaturation in Gal repressor/heat unstable nucleoid protein (HU)-mediated DNA looping. Proceedings of the National Academy of Sciences of the United States of America, 2003, 100, 11373-11377.	7.1	105
21	Convective pattern dynamics at low Prandtl number: Part I. Contemporary Physics, 1989, 30, 113-133.	1.8	101
22	Stress-Induced Structural Transitions in DNA and Proteins. Annual Review of Biophysics and Biomolecular Structure, 2000, 29, 523-543.	18.3	99
23	Nonadiabatic effects in convection. Physical Review A, 1988, 38, 5461-5464.	2.5	96
24	Stretching DNA and RNA to probe their interactions with proteins. Current Opinion in Structural Biology, 2003, 13, 266-274.	5.7	92
25	Structure and mechanics of single biomolecules: experiment and simulation. Journal of Physics Condensed Matter, 2002, 14, R383-R414.	1.8	88
26	Coupling DNA unwinding activity with primer synthesis in the bacteriophage T4 primosome. Nature Chemical Biology, 2009, 5, 904-912.	8.0	86
27	The Manipulation of Single Biomolecules. Physics Today, 2001, 54, 46-51.	0.3	81
28	Convective pattern dynamics at low Prandtl number: Part II. Contemporary Physics, 1989, 30, 153-171.	1.8	77
29	Direct Observation of Stalled Fork Restart via Fork Regression in the T4 Replication System. Science, 2012, 338, 1217-1220.	12.6	75
30	Asymmetric adhesion of rod-shaped bacteria controls microcolony morphogenesis. Nature Communications, 2018, 9, 1120.	12.8	69
31	Mechanism of strand displacement synthesis by DNA replicative polymerases. Nucleic Acids Research, 2012, 40, 6174-6186.	14.5	68
32	Twisting DNA: single molecule studies. Contemporary Physics, 2004, 45, 383-403.	1.8	66
33	RecG and UvsW catalyse robust DNA rewinding critical for stalled DNA replication fork rescue. Nature Communications, 2013, 4, 2368.	12.8	65
34	Collaborative coupling between polymerase and helicase for leading-strand synthesis. Nucleic Acids Research, 2012, 40, 6187-6198.	14.5	62
35	DNA mechanics as a tool to probe helicase and translocase activity. Nucleic Acids Research, 2006, 34, 4232-4244.	14.5	56
36	Soft magnetic tweezers: A proof of principle. Review of Scientific Instruments, 2011, 82, 034302.	1.3	51

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37	Single-molecule mechanical identification and sequencing. Nature Methods, 2012, 9, 367-372.	19.0	51
38	Nonlinear waves of the oscillatory instability on finite convective rolls. Physica D: Nonlinear Phenomena, 1989, 37, 300-314.	2.8	44
39	Resonant out-of-phase fluorescence microscopy and remote imaging overcome spectral limitations. Nature Communications, 2017, 8, 969.	12.8	41
40	Nonlinear competition between waves on convective rolls. Physical Review A, 1989, 39, 2765-2768.	2.5	40
41	Twisting and Untwisting a Single DNA Molecule Covered by RecA Protein. Biophysical Journal, 2004, 87, 2552-2563.	0.5	40
42	Dda Helicase Tightly Couples Translocation on Single-Stranded DNA to Unwinding of Duplex DNA: Dda Is an Optimally Active Helicase. Journal of Molecular Biology, 2012, 420, 141-154.	4.2	40
43	Single-Molecule Studies Using Magnetic Traps. Cold Spring Harbor Protocols, 2012, 2012, pdb.top067488.	0.3	39
44	Single molecule high-throughput footprinting of small and large DNA ligands. Nature Communications, 2017, 8, 304.	12.8	38
45	UPF1-like helicase grip on nucleic acids dictates processivity. Nature Communications, 2018, 9, 3752.	12.8	37
46	Photoswitching Kinetics and Phaseâ€Sensitive Detection Add Discriminative Dimensions for Selective Fluorescence Imaging. Angewandte Chemie - International Edition, 2015, 54, 2633-2637.	13.8	36
47	Photoswitching Kinetics and Phaseâ€Sensitive Detection Add Discriminative Dimensions for Selective Fluorescence Imaging. Angewandte Chemie, 2015, 127, 2671-2675.	2.0	35
48	Magnetic Tweezers for the Study of DNA Tracking Motors. Methods in Enzymology, 2010, 475, 297-320.	1.0	34
49	A conserved structural element in the RNA helicase UPF1 regulates its catalytic activity in an isoform-specific manner. Nucleic Acids Research, 2018, 46, 2648-2659.	14.5	34
50	Single molecule kinetics uncover roles for E. coli RecQ DNA helicase domains and interaction with SSB. Nucleic Acids Research, 2018, 46, 8500-8515.	14.5	30
51	Statistical determination of the step size of molecular motors. Journal of Physics Condensed Matter, 2005, 17, S3811-S3820.	1.8	28
52	Molecular sorting by stochastic resonance. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 8276-8280.	7.1	27
53	Single DNA/protein studies with magnetic traps. Current Opinion in Structural Biology, 2009, 19, 615-622.	5.7	27
54	Period doubling of a torus in a chain of oscillators. Physical Review Letters, 1994, 72, 2871-2874.	7.8	26

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55	Some nonlinear challenges in biology. Nonlinearity, 2008, 21, T131-T147.	1.4	26
56	Magnetic Trap Construction: Figure 1.. Cold Spring Harbor Protocols, 2012, 2012, pdb.prot067496.	0.3	26
57	HTLV-1 Tax plugs and freezes UPF1 helicase leading to nonsense-mediated mRNA decay inhibition. Nature Communications, 2018, 9, 431.	12.8	26
58	Single-Molecule DNA Nanomanipulation: Detection of Promoter-Unwinding Events by RNA Polymerase. Methods in Enzymology, 2003, 370, 577-598.	1.0	23
59	Single molecule studies of helicases with magnetic tweezers. Methods, 2016, 105, 3-15.	3.8	23
60	Single-molecule Visualization of Binding Modes of Helicase to DNA on PEGylated Surfaces. Chemistry Letters, 2009, 38, 308-309.	1.3	20
61	Fourier Analysis To Measure Diffusion Coefficients and Resolve Mixtures on a Continuous Electrophoresis Chip. Analytical Chemistry, 2007, 79, 8222-8231.	6.5	16
62	Folding and persistence times of intramolecular G-quadruplexes transiently embedded in a DNA duplex. Nucleic Acids Research, 2021, 49, 5189-5201.	14.5	16
63	Single-Molecule Manipulation Measurements of DNA Transport Proteins. ChemPhysChem, 2005, 6, 813-818.	2.1	15
64	Tracking enzymatic steps of DNA topoisomerases using single-molecule micromanipulation. Comptes Rendus Physique, 2002, 3, 595-618.	0.9	14
65	Macroscale fluorescence imaging against autofluorescence under ambient light. Light: Science and Applications, 2018, 7, 97.	16.6	14
66	Parallel, linear, and subnanometric 3D tracking of microparticles with Stereo Darkfield Interferometry. Science Advances, 2021, 7, .	10.3	14
67	Mechanically Controlled DNA Extrusion from a Palindromic Sequence by Single Molecule Micromanipulation. Physical Review Letters, 2006, 96, 188102.	7.8	13
68	Stochastic Resonance to Control Diffusive Motion in Chemistry. Journal of Physical Chemistry B, 2005, 109, 1318-1328.	2.6	12
69	Nucleosomeâ€remodelling machines and other molecular motors observed at the singleâ€molecule level. FEBS Journal, 2011, 278, 3596-3607.	4.7	12
70	Kinetics of Reactive Modules Adds Discriminative Dimensions for Selective Cell Imaging. ChemPhysChem, 2016, 17, 1396-1413.	2.1	12
71	A mechanistic study of helicases with magnetic traps. Protein Science, 2017, 26, 1314-1336.	7.6	12
72	Mechanistic characterization of the DEAD-box RNA helicase Ded1 from yeast as revealed by a novel technique using single-molecule magnetic tweezers. Nucleic Acids Research, 2019, 47, 3699-3710.	14.5	12

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73	Monitoring microbial population dynamics at low densities. Review of Scientific Instruments, 2012, 83, 074301.	1.3	8
74	ATP-Independent Cooperative Binding of Yeast Isw1a to Bare and Nucleosomal DNA. PLoS ONE, 2012, 7, e31845.	2.5	8
75	Study of DNA Motors by Single Molecule Micromanipulation. Single Molecules, 2000, 1, 145-151.	0.9	7
76	Single-molecule kinetic locking allows fluorescence-free quantification of protein/nucleic-acid binding. Communications Biology, 2021, 4, 1083.	4.4	7
77	Novel approaches to study helicases using magnetic tweezers. Methods in Enzymology, 2022, , 359-403.	1.0	5
78	Rolling and aging in temperature-ramp soft adhesion. Physical Review E, 2018, 97, 012609.	2.1	4
79	Nucleosome Positioning on Large Tandem DNA Repeats of the â€˜601â€™ Sequence Engineered in Saccharomyces cerevisiae. Journal of Molecular Biology, 2022, 434, 167497.	4.2	4
80	The manipulation of single biomolecules. Interdisciplinary Science Reviews, 2007, 32, 149-161.	1.4	2
81	Sensing Single Base Incorporation with Nanopore Micromanipulation. ACS Chemical Biology, 2008, 3, 92-94.	3.4	2
82	Tunable and switchable soft adsorption of polymer-coated microparticles on a flat substrate. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2019, 575, 199-204.	4.7	2
83	Dynamic Contrast for Plant Phenotyping. ACS Omega, 2020, 5, 15105-15114.	3.5	2
84	Magnetic Tweezers-Based Single-Molecule Assays to Study Interaction of E. coli SSB with DNA and. Methods in Molecular Biology, 2021, 2281, 93-115.	0.9	2
85	Le jokari molÃ©culaire. Biofutur, 1999, 1999, 26-27.	0.0	1
86	Detection of genetic variation and base modifications at base-pair resolution on both DNA and RNA. Communications Biology, 2021, 4, 128.	4.4	1
87	Twisting and stretching single DNA molecules. , 2001, , 115-140.		1
88	Controlled assembly of covalent and supramolecular chemical modules: from engineering of complex structures to high-performance chromatography. Russian Chemical Bulletin, 2004, 53, 1379-1384.	1.5	0
89	Mechanical studies on single molecules: general considerations. , 2014, , 49-69.		0
90	Microfluidic Cell Heating Characterized by 3-Ï‰ Measurements. , 2008, , .		0