Mark C Leake

List of Publications by Year
in descending order

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119 papers	6,385 citations	76196 40 h-index	79541 73 g-index
167 all docs	167 docs citations	167 times ranked	5453 citing authors

#	Article	IF	Citations
1	Stoichiometry and turnover in single, functioning membrane protein complexes. Nature, 2006, 443, 355-358.	13.7	559
2	Stoichiometry and Architecture of Active DNA Replication Machinery in Escherichia coli. Science, 2010, 328, 498-501.	6.0	382
3	Direct observation of steps in rotation of the bacterial flagellar motor. Nature, 2005, 437, 916-919.	13.7	309
4	Passive Stiffness Changes Caused by Upregulation of Compliant Titin Isoforms in Human Dilated Cardiomyopathy Hearts. Circulation Research, 2004, 95, 708-716.	2.0	300
5	The maximum number of torque-generating units in the flagellar motor of Escherichia coli is at least 11. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 8066-8071.	3.3	254
6	In Vivo Architecture and Action of Bacterial Structural Maintenance of Chromosome Proteins. Science, 2012, 338, 528-531.	6.0	253
7	ATP-Dependent Dynamic Protein Aggregation Regulates Bacterial Dormancy Depth Critical for Antibiotic Tolerance. Molecular Cell, 2019, 73, 143-156.e4.	4.5	221
8	Single-molecule fluorescence microscopy review: shedding new light on old problems. Bioscience Reports, 2017, 37, .	1.1	219
9	Developmentally Regulated Switching of Titin Size Alters Myofibrillar Stiffness in the Perinatal Heart. Circulation Research, 2004, 94, 967-975.	2.0	177
10	Signal-dependent turnover of the bacterial flagellar switch protein FliM. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 11347-11351.	3.3	176
11	Variable stoichiometry of the TatA component of the twin-arginine protein transport system observed by in vivo single-molecule imaging. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 15376-15381.	3.3	172
12	Association of the Chaperone Î±B-crystallin with Titin in Heart Muscle. Journal of Biological Chemistry, 2004, 279, 7917-7924.	1.6	147
13	Single-molecule techniques in biophysics: a review of the progress in methods and applications. Reports on Progress in Physics, 2018, 81, 024601.	8.1	136
14	Single-molecule in vivo imaging of bacterial respiratory complexes indicates delocalized oxidative phosphorylation. Biochimica Et Biophysica Acta - Bioenergetics, 2014, 1837, 811-824.	0.5	111
15	FromAnimaculumto single molecules: 300 years of the light microscope. Open Biology, 2015, 5, 150019.	1.5	109
16	Millisecond timescale slimfield imaging and automated quantification of single fluorescent protein molecules for use in probing complex biological processes. Integrative Biology (United Kingdom), 2009, 1, 602.	0.6	108
17	Damped elastic recoil of the titin spring in myofibrils of human myocardium. Proceedings of the National Academy of Sciences of the United States of America, 2003, 100, 12688-12693.	3.3	105
18	Frequent exchange of the DNA polymerase during bacterial chromosome replication. ELife, 2017, 6, .	2.8	101

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19	Inferring diffusion in single live cells at the single-molecule level. Philosophical Transactions of the Royal Society B: Biological Sciences, 2013, 368, 20120029.	1.8	100
20	Clustering and dynamics of cytochrome bdâ€ complexes in the Escherichia coli plasma membrane in vivo. Molecular Microbiology, 2008, 70, 1397-1407.	1.2	98
21	Single-Organelle Quantification Reveals Stoichiometric and Structural Variability of Carboxysomes Dependent on the Environment. Plant Cell, 2019, 31, 1648-1664.	3.1	98
22	Transcription factor clusters regulate genes in eukaryotic cells. ELife, 2017, 6, .	2.8	94
23	The molecular elasticity of the insect flight muscle proteins projectin and kettin. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 4451-4456.	3.3	93
24	Nonequivalence of Membrane Voltage and Ion-Gradient as Driving Forces for the Bacterial Flagellar Motor at Low Load. Biophysical Journal, 2007, 93, 294-302.	0.2	93
25	The Elasticity of Single Titin Molecules Using a Two-Bead Optical Tweezers Assay. Biophysical Journal, 2004, 87, 1112-1135.	0.2	89
26	Superresolution imaging of single DNA molecules using stochastic photoblinking of minor groove and intercalating dyes. Methods, 2015, 88, 81-88.	1.9	89
27	Single-molecule imaging of DNA gyrase activity in livingEscherichia coli. Nucleic Acids Research, 2019, 47, 210-220.	6.5	72
28	A molecular brake, not a clutch, stops the Rhodobacter sphaeroides flagellar motor. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 11582-11587.	3.3	71
29	Millisecond single-molecule localization microscopy combined with convolution analysis and automated image segmentation to determine protein concentrations in complexly structured, functional cells, one cell at a time. Faraday Discussions, 2015, 184, 401-424.	1.6	70
30	Molecular coordination of Staphylococcus aureus cell division. ELife, 2018, 7, .	2.8	69
31	The physics of life: one molecule at a time. Philosophical Transactions of the Royal Society B: Biological Sciences, 2013, 368, 20120248.	1.8	67
32	Localisation and interactions of theVipp1 protein in cyanobacteria. Molecular Microbiology, 2014, 94, 1179-1195.	1.2	66
33	Independent mobility of proteins and lipids in the plasma membrane of <scp>E</scp>scherichia coli. Molecular Microbiology, 2014, 92, 1142-1153.	1.2	65
34	Fluorescence Measurement of Intracellular Sodium Concentration in Single Escherichia coli Cells. Biophysical Journal, 2006, 90, 357-365.	0.2	60
35	Membraneless organelles formed by liquid-liquid phase separation increase bacterial fitness. Science Advances, 2021, 7, eabh2929.	4.7	55
36	The elasticity of single kettin molecules using a two-bead laser-tweezers assay. FEBS Letters, 2003, 535, 55-60.	1.3	54

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37	B cell zone reticular cell microenvironments shape CXCL13 gradient formation. Nature Communications, 2020, 11, 3677.	5.8	52
38	Analytical tools for single-molecule fluorescence imaging in cellulo. Physical Chemistry Chemical Physics, 2014, 16, 12635-12647.	1.3	49
39	Functioning Nanomachines Seen in Real-Time in Living Bacteria Using Single-Molecule and Super-Resolution Fluorescence Imaging. International Journal of Molecular Sciences, 2011, 12, 2518-2542.	1.8	48
40	Experimental approaches for addressing fundamental biological questions in living, functioning cells with single molecule precision. Open Biology, 2012, 2, 120090.	1.5	48
41	Single-molecule live cell imaging of Rep reveals the dynamic interplay between an accessory replicative helicase and the replisome. Nucleic Acids Research, 2019, 47, 6287-6298.	6.5	48
42	Mechanical properties of cardiac titinâ€™s N2B-region by single-molecule atomic force spectroscopy. Journal of Structural Biology, 2006, 155, 263-272.	1.3	47
43	Are Escherichia coli OXPHOS complexes concentrated in specialized zones within the plasma membrane?. Biochemical Society Transactions, 2008, 36, 1032-1036.	1.6	46
44	The yeast Mig1 transcriptional repressor is dephosphorylated by glucose-dependent and -independent mechanisms. FEMS Microbiology Letters, 2017, 364, .	0.7	42
45	Rapid rotation of micron and submicron dielectric particles measured using optical tweezers. Journal of Modern Optics, 2003, 50, 1539-1554.	0.6	36
46	Amyloid-Î² oligomerization monitored by single-molecule stepwise photobleaching. Methods, 2021, 193, 80-95.	1.9	35
47	Multiple sources of passive stress relaxation in muscle fibres. Physics in Medicine and Biology, 2004, 49, 3613-3627.	1.6	33
48	High-Speed Single-Molecule Tracking of CXCL13 in the B-Follicle. Frontiers in Immunology, 2018, 9, 1073.	2.2	33
49	The Mechanism of Vesicle Solubilization by the Detergent Sodium Dodecyl Sulfate. Langmuir, 2020, 36, 11499-11507.	1.6	28
50	SerraNA: a program to determine nucleic acids elasticity from simulation data. Physical Chemistry Chemical Physics, 2020, 22, 19254-19266.	1.3	26
51	Positioning of chemosensory proteins and <scp>FtsZ</scp> through the <scp>R</scp>hodobacter sphaeroides cell cycle. Molecular Microbiology, 2013, 90, 322-337.	1.2	24
52	Probing DNA interactions with proteins using a single-molecule toolbox: inside the cell, in a test tube and in a computer. Biochemical Society Transactions, 2015, 43, 139-145.	1.6	24
53	Shining the spotlight on functional molecular complexes. Communicative and Integrative Biology, 2010, 3, 415-418.	0.6	23
54	Towards mapping the 3D genome through high speed single-molecule tracking of functional transcription factors in single living cells. Methods, 2020, 170, 82-89.	1.9	23

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55	Biophysical characterisation of DNA origami nanostructures reveals inaccessibility to intercalation binding sites. Nanotechnology, 2020, 31, 235605.	1.3	23
56	A glucose-starvation response governs endocytic trafficking and eisosomal retention of surface cargoes in budding yeast. Journal of Cell Science, 2021, 134, .	1.2	23
57	The emergence of sequence-dependent structural motifs in stretched, torsionally constrained DNA. Nucleic Acids Research, 2020, 48, 1748-1763.	6.5	21
58	Unveiling the multi-step solubilization mechanism of sub-micron size vesicles by detergents. Scientific Reports, 2019, 9, 12897.	1.6	20
59	An automated image analysis framework for segmentation and division plane detection of single liveStaphylococcus aureuscells which can operate at millisecond sampling time scales using bespoke Slimfield microscopy. Physical Biology, 2016, 13, 055002.	0.8	19
60	Staphylococcus aureus toxin LukSF dissociates from its membrane receptor target to enable renewed ligand sequestration. FASEB Journal, 2019, 33, 3807-3824.	0.2	18
61	Integration host factor bends and bridges DNA in a multiplicity of binding modes with varying specificity. Nucleic Acids Research, 2021, 49, 8684-8698.	6.5	18
62	Characterising Maturation of GFP and mCherry of Genomically Integrated Fusions in Saccharomyces cerevisiae. Bio-protocol, 2018, 8, e2710.	0.2	18
63	Single molecule experimentation in biological physics: exploring the living component of soft condensed matter one molecule at a time. Journal of Physics Condensed Matter, 2011, 23, 503101.	0.7	16
64	Single-Molecule Narrow-Field Microscopy of Proteinâ€“DNA Binding Dynamics in Glucose Signal Transduction of Live Yeast Cells. Methods in Molecular Biology, 2016, 1431, 5-15.	0.4	16
65	Developing a New Biophysical Tool to Combine Magneto-Optical Tweezers with Super-Resolution Fluorescence Microscopy. Photonics, 2015, 2, 758-772.	0.9	15
66	Single-molecule studies of the dynamics and interactions of bacterial OXPHOS complexes. Biochimica Et Biophysica Acta - Bioenergetics, 2016, 1857, 224-231.	0.5	15
67	Single-Molecule Observation of DNA Replication Repair Pathways in E. coli. Advances in Experimental Medicine and Biology, 2016, 915, 5-16.	0.8	14
68	Tween-20 Induces the Structural Remodeling of Single Lipid Vesicles. Journal of Physical Chemistry Letters, 2022, 13, 5341-5350.	2.1	14
69	PySTACHIO: Python Single-molecule TrAcking stoiCHiometry Intensity and simulatiOn, a flexible, extensible, beginner-friendly and optimized program for analysis of single-molecule microscopy data. Computational and Structural Biotechnology Journal, 2021, 19, 4049-4058.	1.9	13
70	Critical roles for EGFR and EGFRâ€“HER2 clusters in EGF binding of SW620 human carcinoma cells. Journal of the Royal Society Interface, 2022, 19, .	1.5	13
71	Correlating single-molecule characteristics of the yeast aquaglyceroporin Fps1 with environmental perturbations directly in living cells. Methods, 2021, 193, 46-53.	1.9	10
72	Plasmonics, Tracking and Manipulating, and Living Cells: general discussion. Faraday Discussions, 2015, 184, 451-473.	1.6	9

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73	Systems biophysics: Single-molecule optical proteomics in single living cells. Current Opinion in Systems Biology, 2018, 7, 26-35.	1.3	8
74	Correlative single-molecule fluorescence barcoding of gene regulation in Saccharomyces cerevisiae. Methods, 2021, 193, 62-67.	1.9	8
75	Single-molecule optical microscopy of protein dynamics and computational analysis of images to determine cell structure development in differentiating Bacillus subtilis. Computational and Structural Biotechnology Journal, 2020, 18, 1474-1486.	1.9	8
76	Combining single-molecule super-resolved localization microscopy with fluorescence polarization imaging to study cellular processes. JPhys Photonics, 2021, 3, 034010.	2.2	8
77	Single-molecule FRET dynamics of molecular motors in an ABEL trap. Methods, 2021, 193, 96-106.	1.9	8
78	Designing a Single-Molecule Biophysics Tool for Characterising DNA Damage for Techniques that Kill Infectious Pathogens Through DNA Damage Effects. Advances in Experimental Medicine and Biology, 2016, 915, 115-127.	0.8	7
79	Transcription factors in eukaryotic cells can functionally regulate gene expression by acting in oligomeric assemblies formed from an intrinsically disordered protein phase transition enabled by molecular crowding. Transcription, 2018, 9, 298-306.	1.7	7
80	Molecular crowding in single eukaryotic cells: Using cell environment biosensing and single-molecule optical microscopy to probe dependence on extracellular ionic strength, local glucose conditions, and sensor copy number. Methods, 2021, 193, 54-61.	1.9	7
81	Using Fluorescence Recovery After Photobleaching (FRAP) to Study Dynamics of the Structural Maintenance of Chromosome (SMC) Complex In Vivo. Methods in Molecular Biology, 2016, 1431, 37-46.	0.4	6
82	A CLK1-KKT2 Signaling Pathway Regulating Kinetochore Assembly in Trypanosoma brucei. MBio, 2021, 12, e0068721.	1.8	6
83	Investigating molecular crowding during cell division and hyperosmotic stress in budding yeast with FRET. Current Topics in Membranes, 2021, 88, 75-118.	0.5	6
84	Single-Molecular Quantification of Flowering Control Proteins Within Nuclear Condensates in Live Whole Arabidopsis Root. Methods in Molecular Biology, 2022, , 311-328.	0.4	6
85	Correlative approaches in single-molecule biophysics: A review of the progress in methods and applications. Methods, 2021, 193, 1-4.	1.9	5
86	The Biophysics of Infection. Advances in Experimental Medicine and Biology, 2016, 915, 1-3.	0.8	5
87	Rapid rotation of micron and submicron dielectric particles measured using optical tweezers. , 0, .		5
88	Biophysics. , 0, , .		5
89	The effect of stress on biophysical characteristics of misfolded protein aggregates in living Saccharomyces cerevisiae cells. Experimental Gerontology, 2022, 162, 111755.	1.2	5
90	Visualizing Single Molecular Complexes In Vivo Using Advanced Fluorescence Microscopy. Journal of Visualized Experiments, 2009, , 1508.	0.2	4

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91	Using bespoke fluorescence microscopy to study the soft condensed matter of living cells at the single molecule level. Journal of Physics: Conference Series, 2011, 286, 012001.	0.3	4
92	Force Spectroscopy in Studying Infection. Advances in Experimental Medicine and Biology, 2016, 915, 307-327.	0.8	4
93	Elucidating the Role of Topological Constraint on the Structure of Overstretched DNA Using Fluorescence Polarization Microscopy. Journal of Physical Chemistry B, 2021, 125, 8351-8361.	1.2	4
94	The Effect of Lithium on the Budding Yeast Saccharomyces cerevisiae upon Stress Adaptation. Microorganisms, 2022, 10, 590.	1.6	4
95	A general approach for segmenting elongated and stubby biological objects: Extending a chord length transform with the Radon transform. , 2010, , .		3
96	A novel multiple particle tracking algorithm for noisy in vivo data by minimal path optimization within the spatio-temporal volume. , 2009, , .		2
97	An experimental study of the putative mechanism of a synthetic autonomous rotary DNA nanomotor. Royal Society Open Science, 2017, 4, 160767.	1.1	2
98	The case for biophysics super-groups in physics departments. Physical Biology, 2018, 15, 060201.	0.8	2
99	New Advances in Chromosome Architecture. Methods in Molecular Biology, 2016, 1431, 1-3.	0.4	1
100	A System-level Approach to Single-Molecule Live-Cell Fluorescence Microscopy. Infocus Magazine, 2013, , 4-18.	0.1	1
101	The End Restraint Method for Mechanically Perturbing Nucleic Acids In Silico. Methods in Molecular Biology, 2022, , 249-262.	0.4	1
102	Discrete and Continuous Three Dimensional Simulations for Fluorescence Recovery In Bacteria. Biophysical Journal, 2010, 98, 235a.	0.2	0
103	Advanced Multidimensional Optics to Investigate Biological Complexity at the Single Molecule Level in Living, Functional Cells. Biophysical Journal, 2010, 98, 587a.	0.2	0
104	Stoichiometry of Active DNA Replication Machinery Within Living Escherichia Coli Cells. Biophysical Journal, 2010, 98, 608a.	0.2	0
105	Fast Millisecond Imaging of Single Fluorescent Protein Molecules Using a Simple â€œSlimfieldâ€•Optical Trick. Biophysical Journal, 2010, 98, 588a.	0.2	0
106	Dynamics and Co-Localization of the Electron Transport Chain of Escherichia Coli: Investigations Through Fluorescence Microscopy. Biophysical Journal, 2010, 98, 234a.	0.2	0
107	Single Molecule Live Cell Millisecond Fluorescence Imaging of Bacterial Condensins. Biophysical Journal, 2012, 102, 279a.	0.2	0
108	Sub-Millisecond Single Molecule Fluorescence Imaging Combined with Dual Optical Tweezers on DNA Tethers. Biophysical Journal, 2012, 102, 180a.	0.2	0

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109	Making the invisible visible: part 1 â€“ methods that use visible light. , 0, , 60-101.		0
110	Measuring forces and manipulating single molecules. , 0, , 121-148.		0
111	Into the membrane. , 0, , 183-219.		0
112	Inside cells. , 0, , 220-252.		0
113	Delocalised electron transport and chemiosmosis in Escherichia coli. Biochimica Et Biophysica Acta - Bioenergetics, 2014, 1837, e88.	0.5	0
114	Transcription Factor Clustering in Live Yeast Cells. Biophysical Journal, 2016, 110, 231a.	0.2	0
115	Developing a Single-Molecule Fluorescence Tool to Quantify DNA Damage. Biophysical Journal, 2016, 110, 164a.	0.2	0
116	Imaging the cell. Biophysical Reviews, 2017, 9, 295-296.	1.5	0
117	Spring blooms from self-assembly: epigenetic memory governed by nuclear assemblies and condensates. Biophysical Journal, 2022, 121, 168a.	0.2	0
118	Exploring the structural dynamics of DNA using fluorescence polarization microscopy and optical tweezers. Biophysical Journal, 2022, 121, 277a-278a.	0.2	0
119	Surviving early career research and beyond in biophysics/biological physics: A concise user guide. Physical Biology, 0, , .	0.8	0