Thomas T Perkins

List of Publications by Year
in descending order

64 papers	2,898 citations	201385 27 h-index	168136 53 g-index
68 all docs	68 docs citations	68 times ranked	3001 citing authors

#	Article	IF	Citations
1	Dynamical Scaling of DNA Diffusion Coefficients. Macromolecules, 1996, 29, 1372-1373.	2.2	283
2	Gold nanoparticles: enhanced optical trapping and sensitivity coupled with significant heating. Optics Letters, 2006, 31, 2429.	1.7	260
3	Hidden dynamics in the unfolding of individual bacteriorhodopsin proteins. Science, 2017, 355, 945-950.	6.0	194
4	Forward and Reverse Motion of Single RecBCD Molecules on DNA. Biophysical Journal, 2004, 86, 1640-1648.	0.2	134
5	Sequence-Dependent Pausing of Single Lambda Exonuclease Molecules. Science, 2003, 301, 1914-1918.	6.0	128
6	Stabilization of an optical microscope to 01 nm in three dimensions. Applied Optics, 2007, 46, 421.	2.1	126
7	Elasticity of Short DNA Molecules: Theory and Experiment for Contour Lengths of 0.6â€“7Î¼m. Biophysical Journal, 2007, 93, 4360-4373.	0.2	122
8	Optical traps for single molecule biophysics: a primer. Laser and Photonics Reviews, 2009, 3, 203-220.	4.4	115
9	Nano-Chemical Infrared Imaging of Membrane Proteins in Lipid Bilayers. Journal of the American Chemical Society, 2013, 135, 18292-18295.	6.6	99
10	Measuring 01-nm motion in 1 ms in an optical microscope with differential back-focal-plane detection. Optics Letters, 2004, 29, 2611.	1.7	98
11	Ultrastable Atomic Force Microscopy: Atomic-Scale Stability and Registration in Ambient Conditions. Nano Letters, 2009, 9, 1451-1456.	4.5	82
12	Self-Diffusion of an Entangled DNA Molecule by Reptation. Physical Review Letters, 1995, 75, 4146-4149.	2.9	79
13	Overstretching DNA at 65 pN Does Not Require Peeling from Free Ends or Nicks. Journal of the American Chemical Society, 2011, 133, 3219-3221.	6.6	78
14	Improved Single Molecule Force Spectroscopy Using Micromachined Cantilevers. ACS Nano, 2014, 8, 4984-4995.	7.3	70
15	Routine and Timely Sub-picoNewton Force Stability and Precision for Biological Applications of Atomic Force Microscopy. Nano Letters, 2012, 12, 3557-3561.	4.5	68
16	Rapid Characterization of a Mechanically Labile Î±-Helical Protein Enabled by Efficient Site-Specific Bioconjugation. Journal of the American Chemical Society, 2017, 139, 9867-9875.	6.6	67
17	Precision Surface-Coupled Optical-Trapping Assay with One-Basepair Resolution. Biophysical Journal, 2009, 96, 2926-2934.	0.2	63
18	Optimizing 1-Î¼s-Resolution Single-Molecule Force Spectroscopy on a Commercial Atomic Force Microscope. Nano Letters, 2015, 15, 7091-7098.	4.5	54

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19	Direct Observation of the Reversible Twoâ€State Unfolding and Refolding of an Î±/Î² Protein by Singleâ€Molecule Atomic Force Microscopy. Angewandte Chemie - International Edition, 2015, 54, 9921-9925.	7.2	52
20	Imaging DNA Equilibrated onto Mica in Liquid Using Biochemically Relevant Deposition Conditions. ACS Nano, 2019, 13, 4220-4229.	7.3	51
21	Back-scattered detection provides atomic-scale localization precision, stability, and registration in 3D. Optics Express, 2007, 15, 13434.	1.7	48
22	TFIIA Changes the Conformation of the DNA in TBP/TATA Complexes and Increases their Kinetic Stability. Journal of Molecular Biology, 2007, 372, 619-632.	2.0	44
23	Ã…ngstrÃ¶m-Precision Optical Traps and Applications. Annual Review of Biophysics, 2014, 43, 279-302.	4.5	44
24	Dynamics and Multiple Stable Binding Modes of DNA Intercalators Revealed by Singleâ€Molecule Force Spectroscopy. Angewandte Chemie - International Edition, 2012, 51, 1811-1815.	7.2	42
25	Force Spectroscopy with 9-Î¼s Resolution and Sub-pN Stability by Tailoring AFM Cantilever Geometry. Biophysical Journal, 2017, 113, 2595-2600.	0.2	36
26	High-Precision Single-Molecule Characterization of the Folding of an HIV RNA Hairpin by Atomic Force Microscopy. Nano Letters, 2018, 18, 6318-6325.	4.5	34
27	Optimizing force spectroscopy by modifying commercial cantilevers: Improved stability, precision, and temporal resolution. Journal of Structural Biology, 2017, 197, 13-25.	1.3	33
28	Atomic force microscopy with sub-picoNewton force stability for biological applications. Methods, 2013, 60, 131-141.	1.9	27
29	Ultrastable atomic force microscopy: Improved force and positional stability. FEBS Letters, 2014, 588, 3621-3630.	1.3	26
30	Type III secretion system effector proteins are mechanically labile. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	24
31	Going Vertical To Improve the Accuracy of Atomic Force Microscopy Based Single-Molecule Force Spectroscopy. ACS Nano, 2018, 12, 198-207.	7.3	22
32	Sequence-dependent nanometer-scale conformational dynamics of individual RecBCDâ€"DNA complexes. Nucleic Acids Research, 2016, 44, 5849-5860.	6.5	20
33	Quantifying the Initial Unfolding of Bacteriorhodopsin Reveals Retinal Stabilization. Angewandte Chemie - International Edition, 2019, 58, 1710-1713.	7.2	19
34	Optimizing bead size reduces errors in force measurements in optical traps. Optics Express, 2013, 21, 39.	1.7	18
35	Improved free-energy landscape reconstruction of bacteriorhodopsin highlights local variations in unfolding energy. Journal of Chemical Physics, 2018, 148, 123313.	1.2	18
36	Torsionally constrained DNA for single-molecule assays: an efficient, ligation-free method. Nucleic Acids Research, 2013, 41, e179-e179.	6.5	17

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37	Integrating a High-Force Optical Trap with Gold Nanoposts and a Robust Goldâˆ'DNA Bond. Nano Letters, 2009, 9, 2978-2983.	4.5	16
38	Modulation of a protein-folding landscape revealed by AFM-based force spectroscopy notwithstanding instrumental limitations. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, e2015728118.	3.3	16
39	Improved Force Spectroscopy Using Focused-Ion-Beam-Modified Cantilevers. Methods in Enzymology, 2017, 582, 321-351.	0.4	15
40	Membrane-Protein Unfolding Intermediates Detected with Enhanced Precision Using a Zigzag Force Ramp. Biophysical Journal, 2020, 118, 667-675.	0.2	15
41	Quantifying the Native Energetics Stabilizing Bacteriorhodopsin by Single-Molecule Force Spectroscopy. Physical Review Letters, 2020, 125, 068102.	2.9	14
42	Ultrastable measurement platform: sub-nm drift over hours in 3D at room temperature. Optics Express, 2015, 23, 16554.	1.7	11
43	Improved Freeâ€Energy Landscape Quantification Illustrated with a Computationally Designed Proteinâ€"Ligand Interaction. ChemPhysChem, 2018, 19, 19-23.	1.0	11
44	Bending and looping of long DNA by Polycomb repressive complex 2 revealed by AFM imaging in liquid. Nucleic Acids Research, 2020, 48, 2969-2981.	6.5	11
45	FEATHER: Automated Analysis of Force Spectroscopy Unbinding and Unfolding Data viaÂaÂBayesian Algorithm. Biophysical Journal, 2018, 115, 757-762.	0.2	10
46	Free-energy changes of bacteriorhodopsin point mutants measured by single-molecule force spectroscopy. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	10
47	Force-activated DNA substrates for probing individual proteins interacting with single-stranded DNA. Nucleic Acids Research, 2017, 45, 10775-10782.	6.5	9
48	Correcting molecular transition rates measured by single-molecule force spectroscopy for limited temporal resolution. Physical Review E, 2020, 102, 022402.	0.8	9
49	Steadyâ€state gain and saturation flux measurements in a high efficiency, electronâ€beamâ€pumped, Arâ€Xe laser. Journal of Applied Physics, 1993, 74, 4860-4866.	1.1	7
50	Label-free optical imaging of membrane patches for atomic force microscopy. Optics Express, 2010, 18, 23924.	1.7	7
51	Improved performance of an ultrastable measurement platform using a field-programmable gate array for real-time deterministic control. Proceedings of SPIE, 2008, , .	0.8	4
52	Quantifying the Initial Unfolding of Bacteriorhodopsin Reveals Retinal Stabilization. Angewandte Chemie, 2019, 131, 1724-1727.	1.6	2
53	Single-Molecule Optical-Trapping Measurements with DNA Anchored to an Array of Gold Nanoposts. Methods in Molecular Biology, 2012, 875, 335-356.	0.4	2
54	A Surface-Coupled Optical Trap with 1-bp Precision via Active Stabilization. Methods in Molecular Biology, 2017, 1486, 77-107.	0.4	2

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55	Independent measurements of force and position in atomic force microscopy. Proceedings of SPIE, 2009, , .	0.8	1
56	Single-Molecule Studies of RecBCD. Methods in Molecular Biology, 2009, 587, 155-172.	0.4	1
57	Dynamics of DNA-based molecular motors measured with 1-bp resolution. , 2009, , .		0
58	Optical trapping meets atomic force microscopy: a precision force microscope for biophysics. Proceedings of SPIE, 2010, , .	0.8	0
59	Force spectroscopy of DNA: there is still a lot to learn. , 2012, , .		0
60	Titelbild: Dynamics and Multiple Stable Binding Modes of DNA Intercalators Revealed by Single-Molecule Force Spectroscopy (Angew. Chem. 8/2012). Angewandte Chemie, 2012, 124, 1765-1765.	1.6	0
61	Custom Modification of AFM Tips for Fast, High Force Resolution Single-Molecule Force Spectroscopy. Microscopy and Microanalysis, 2015, 21, 1617-1618.	0.2	0
62	Improved Free-Energy Landscape Quantification Illustrated with a Computationally Designed Protein-Ligand Interaction. ChemPhysChem, 2018, 19, 5-5.	1.0	0
63	Ultrastable Atomic Force Microscopy using Laser-Based, Active Noise Cancelation. , 2010, , .		0
64	A Precision Force Microscope for Biophysics. Conference Proceedings of the Society for Experimental Mechanics, 2013, , 31-36.	0.3	0