David A Alsteens

List of Publications by Year
in descending order

116 papers	7,725 citations	53751 45 h-index	53190 85 g-index
126 all docs	126 docs citations	126 times ranked	8341 citing authors

#	Article	IF	Citations
1	Imaging modes of atomic force microscopy for application in molecular and cell biology. Nature Nanotechnology, 2017, 12, 295-307.	15.6	699
2	Atomic force microscopy-based mechanobiology. Nature Reviews Physics, 2019, 1, 41-57.	11.9	500
3	Molecular interaction and inhibition of SARS-CoV-2 binding to the ACE2 receptor. Nature Communications, 2020, 11, 4541.	5.8	485
4	Force probing surfaces of living cells to molecular resolution. Nature Chemical Biology, 2009, 5, 383-390.	3.9	430
5	Multiparametric imaging of biological systems by force-distance curveâ€“based AFM. Nature Methods, 2013, 10, 847-854.	9.0	378
6	Force-induced formation and propagation of adhesion nanodomains in living fungal cells. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 20744-20749.	3.3	179
7	Quantifying the forces guiding microbial cell adhesion using single-cell force spectroscopy. Nature Protocols, 2014, 9, 1049-1055.	5.5	171
8	Nanomechanical mapping of first binding steps of a virus to animal cells. Nature Nanotechnology, 2017, 12, 177-183.	15.6	170
9	A molecular mechanism for Wnt ligand-specific signaling. Science, 2018, 361, .	6.0	169
10	High-Resolution Cell Surface Dynamics of Germinating Aspergillus fumigatus Conidia. Biophysical Journal, 2008, 94, 656-660.	0.2	163
11	Detection, Localization, and Conformational Analysis of Single Polysaccharide Molecules on Live Bacteria. ACS Nano, 2008, 2, 1921-1929.	7.3	159
12	Direct Measurement of Hydrophobic Forces on Cell Surfaces Using AFM. Langmuir, 2007, 23, 11977-11979.	1.6	156
13	Chemical Force Microscopy of Single Live Cells. Nano Letters, 2007, 7, 3026-3030.	4.5	150
14	Adhesion and Nanomechanics of Pili from the Probiotic Lactobacillus rhamnosus GG. ACS Nano, 2013, 7, 3685-3697.	7.3	148
15	The yeast Wsc1 cell surface sensor behaves like a nanospring in vivo. Nature Chemical Biology, 2009, 5, 857-862.	3.9	145
16	Atomic force microscopy-based characterization and design of biointerfaces. Nature Reviews Materials, 2017, 2, .	23.3	145
17	Single-Cell Force Spectroscopy of Probiotic Bacteria. Biophysical Journal, 2013, 104, 1886-1892.	0.2	142
18	High-Resolution Imaging of Chemical and Biological Sites on Living Cells Using Peak Force Tapping Atomic Force Microscopy. Langmuir, 2012, 28, 16738-16744.	1.6	130

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19	Multiparametric atomic force microscopy imaging of single bacteriophages extruding from living bacteria. Nature Communications, 2013, 4, 2926.	5.8	110
20	Atomic Force Microscopy-Based Force Spectroscopy and Multiparametric Imaging of Biomolecular and Cellular Systems. Chemical Reviews, 2021, 121, 11701-11725.	23.0	109
21	A Role for Amyloid in Cell Aggregation and Biofilm Formation. PLoS ONE, 2011, 6, e17632.	1.1	108
22	Imaging G proteinâ€“coupled receptors while quantifying their ligand-binding free-energy landscape. Nature Methods, 2015, 12, 845-851.	9.0	106
23	Organization of the mycobacterial cell wall: a nanoscale view. Pflugers Archiv European Journal of Physiology, 2008, 456, 117-125.	1.3	105
24	Strengthening relationships: amyloids create adhesion nanodomains in yeasts. Trends in Microbiology, 2012, 20, 59-65.	3.5	100
25	Stretching polysaccharides on live cells using single molecule force spectroscopy. Nature Protocols, 2009, 4, 939-946.	5.5	97
26	Unfolding Individual Als5p Adhesion Proteins on Live Cells. ACS Nano, 2009, 3, 1677-1682.	7.3	88
27	Single-Molecule Imaging and Functional Analysis of Als Adhesins and Mannans during Candida albicans Morphogenesis. ACS Nano, 2012, 6, 10950-10964.	7.3	84
28	Initial Step of Virus Entry: Virion Binding to Cell-Surface Glycans. Annual Review of Virology, 2020, 7, 143-165.	3.0	82
29	The Pseudomonas aeruginosa membranes: A target for a new amphiphilic aminoglycoside derivative?. Biochimica Et Biophysica Acta - Biomembranes, 2011, 1808, 1716-1727.	1.4	78
30	Structure, cell wall elasticity and polysaccharide properties of living yeast cells, as probed by AFM. Nanotechnology, 2008, 19, 384005.	1.3	76
31	New frontiers in atomic force microscopy: analyzing interactions from single-molecules to cells. Current Opinion in Biotechnology, 2009, 20, 4-13.	3.3	72
32	Multiparametric Atomic Force Microscopy Imaging of Biomolecular and Cellular Systems. Accounts of Chemical Research, 2017, 50, 924-931.	7.6	68
33	Microbial nanoscopy: a closer look at microbial cell surfaces. Trends in Microbiology, 2010, 18, 397-405.	3.5	67
34	Force-Induced Strengthening of the Interaction between <i>Staphylococcus aureus</i> Clumping Factor B and Loricrin. MBio, 2017, 8, .	1.8	67
35	Mechanical Strength and Inhibition of the Staphylococcus aureus Collagen-Binding Protein Cna. MBio, 2016, 7, .	1.8	65
36	Endophilin-A3 and Galectin-8 control the clathrin-independent endocytosis of CD166. Nature Communications, 2020, 11, 1457.	5.8	65

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37	Identifying and quantifying two ligand-binding sites while imaging native human membrane receptors by AFM. Nature Communications, 2015, 6, 8857.	5.8	64
38	Force spectroscopy of single cells using atomic force microscopy. Nature Reviews Methods Primers, 2021, 1, .	11.8	61
39	Combining confocal and atomic force microscopy to quantify single-virus binding to mammalian cell surfaces. Nature Protocols, 2017, 12, 2275-2292.	5.5	58
40	Mechanical Forces Guiding <i>Staphylococcus aureus</i> Cellular Invasion. ACS Nano, 2018, 12, 3609-3622.	7.3	56
41	Molecular insights into receptor binding energetics and neutralization of SARS-CoV-2 variants. Nature Communications, 2021, 12, 6977.	5.8	55
42	Chitin Synthases with a Myosin Motor-Like Domain Control the Resistance of Aspergillus fumigatus to Echinocandins. Antimicrobial Agents and Chemotherapy, 2012, 56, 6121-6131.	1.4	53
43	In Vivo Imaging of S-Layer Nanoarrays on <i>Corynebacterium glutamicum</i>. Langmuir, 2009, 25, 9653-9655.	1.6	52
44	Unzipping a Functional Microbial Amyloid. ACS Nano, 2012, 6, 7703-7711.	7.3	49
45	Quantifying the Forces Driving Cellâ€"Cell Adhesion in a Fungal Pathogen. Langmuir, 2013, 29, 13473-13480.	1.6	49
46	Nanoscale analysis of caspofungin-induced cell surface remodelling in Candida albicans. Nanoscale, 2013, 5, 1105-1115.	2.8	49
47	Localizing Chemical Groups while Imaging Single Native Proteins by High-Resolution Atomic Force Microscopy. Nano Letters, 2014, 14, 2957-2964.	4.5	48
48	Force Nanoscopy of Hydrophobic Interactions in the Fungal Pathogen <i>Candida glabrata</i>. ACS Nano, 2015, 9, 1648-1655.	7.3	48
49	Multivalent binding of herpesvirus to living cells is tightly regulated during infection. Science Advances, 2018, 4, eaat1273.	4.7	48
50	Glycan-mediated enhancement of reovirus receptor binding. Nature Communications, 2019, 10, 4460.	5.8	46
51	Measurement of the mechanical behavior of yeast membrane sensors using single-molecule atomic force microscopy. Nature Protocols, 2010, 5, 670-677.	5.5	43
52	Nanoscale membrane architecture of healthy and pathological red blood cells. Nanoscale Horizons, 2018, 3, 293-304.	4.1	42
53	Single-cell force spectroscopy of Als-mediated fungal adhesion. Analytical Methods, 2013, 5, 3657.	1.3	41
54	Atomic force microscopy â€" looking at mechanosensors on the cell surface. Journal of Cell Science, 2012, 125, 4189-95.	1.2	39

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55	Specific Interactions Measured by AFM on Living Cells between Peroxiredoxin-5 and TLR4: Relevance for Mechanisms of Innate Immunity. Cell Chemical Biology, 2018, 25, 550-559.e3.	2.5	37
56	Atomic Force Microscopy: A New Look at Pathogens. PLoS Pathogens, 2013, 9, e1003516.	2.1	36
57	Force-clamp spectroscopy identifies a catch bond mechanism in a Gram-positive pathogen. Nature Communications, 2020, 11, 5431.	5.8	32
58	Multivalent 9-O-Acetylated-sialic acid glycoclusters as potent inhibitors for SARS-CoV-2 infection. Nature Communications, 2022, 13, 2564.	5.8	32
59	Fishing single molecules on live cells. Nano Today, 2009, 4, 262-268.	6.2	30
60	Single-Molecule Force Spectroscopy of Membrane Proteins from Membranes Freely Spanning Across Nanoscopic Pores. Nano Letters, 2015, 15, 3624-3633.	4.5	30
61	Reovirus directly engages integrin to recruit clathrin for entry into host cells. Nature Communications, 2021, 12, 2149.	5.8	28
62	Atomic force and electron microscopic-based study of sarcolemmal surface of living cardiomyocytes unveils unexpected mitochondrial shift in heart failure. Journal of Molecular and Cellular Cardiology, 2014, 74, 162-172.	0.9	27
63	Towards a nanoscale view of fungal surfaces. Yeast, 2007, 24, 229-237.	0.8	26
64	Sequential Unfolding of Beta Helical Protein by Single-Molecule Atomic Force Microscopy. PLoS ONE, 2013, 8, e73572.	1.1	21
65	Labelâ€Free Imaging of Cholesterol Assemblies Reveals Hidden Nanomechanics of Breast Cancer Cells. Advanced Science, 2020, 7, 2002643.	5.6	21
66	Probing PIEZO1 Localization upon Activation Using High-Resolution Atomic Force and Confocal Microscopy. Nano Letters, 2021, 21, 4950-4958.	4.5	21
67	The biomechanical properties of an epithelial tissue determine the location of its vasculature. Nature Communications, 2016, 7, 13560.	5.8	20
68	High-resolution mapping and recognition of lipid domains using AFM with toxin-derivatized probes. Chemical Communications, 2018, 54, 6903-6906.	2.2	20
69	Regulatory Mechanisms of the Mucin-Like Region on Herpes Simplex Virus during Cellular Attachment. ACS Chemical Biology, 2019, 14, 534-542.	1.6	20
70	Nanoscale imaging of microbial pathogens using atomic force microscopy. Wiley Interdisciplinary Reviews: Nanomedicine and Nanobiotechnology, 2009, 1, 168-180.	3.3	19
71	Controlled Manipulation of Bacteriophages Using Single-Virus Force Spectroscopy. ACS Nano, 2009, 3, 3063-3068.	7.3	19
72	Unraveling the Nanoscale Surface Properties of Chitin Synthase Mutants ofÂAspergillus fumigatus and Their Biological Implications. Biophysical Journal, 2013, 105, 320-327.	0.2	19

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73	Single-molecule analysis of the major glycopolymers of pathogenic and non-pathogenic yeast cells. Nanoscale, 2013, 5, 4855.	2.8	19
74	Probing ligand-receptor bonds in physiologically relevant conditions using AFM. Analytical and Bioanalytical Chemistry, 2019, 411, 6549-6559.	1.9	18
75	Seeing and sensing single G protein-coupled receptors by atomic force microscopy. Current Opinion in Cell Biology, 2019, 57, 25-32.	2.6	18
76	Liquidâ€"Liquid Phase Separation Enhances TDP-43 LCD Aggregation but Delays Seeded Aggregation. Biomolecules, 2021, 11, 548.	1.8	18
77	Control of Ligand-Binding Specificity Using Photocleavable Linkers in AFM Force Spectroscopy. Nano Letters, 2020, 20, 4038-4042.	4.5	17
78	Molecular Mapping of Lipoarabinomannans on Mycobacteria. Langmuir, 2009, 25, 4324-4327.	1.6	14
79	Surface cholesterol-enriched domains specifically promote invasion of breast cancer cell lines by controlling invadopodia and extracellular matrix degradation. Cellular and Molecular Life Sciences, 2022, 79, .	2.4	14
80	Salvia miltiorrhiza Bunge as a Potential Natural Compound against COVID-19. Cells, 2022, 11, 1311.	1.8	13
81	Submolecular probing of the complement C5a receptorâ€"ligand binding reveals a cooperative two-site binding mechanism. Communications Biology, 2020, 3, 786.	2.0	12
82	Stepwise Enzymatic-Dependent Mechanism of Ebola Virus Binding to Cell Surface Receptors Monitored by AFM. Nano Letters, 2022, 22, 1641-1648.	4.5	12
83	Frontiers in microbial nanoscopy. Nanomedicine, 2011, 6, 395-403.	1.7	11
84	Toward high-throughput biomechanical phenotyping of single molecules. Nature Methods, 2015, 12, 45-46.	9.0	9
85	Reovirus Ïƒ1 Conformational Flexibility Modulates the Efficiency of Host Cell Attachment. Journal of Virology, 2020, 94, .	1.5	9
86	Mechanical Forces between Mycobacterial Antigen 85 Complex and Fibronectin. Cells, 2020, 9, 716.	1.8	9
87	Nanophysical Mapping of Inflammasome Activation by Nanoparticles via Specific Cell Surface Recognition Events. ACS Nano, 2022, 16, 306-316.	7.3	9
88	Single-Virus Force Spectroscopy Discriminates the Intrinsic Role of Two Viral Glycoproteins upon Cell Surface Attachment. Nano Letters, 2021, 21, 847-853.	4.5	8
89	Mechanochemical Activation of Class-B G-Protein-Coupled Receptor upon Peptideâ€"Ligand Binding. Nano Letters, 2020, 20, 5575-5582.	4.5	7
90	Lipid Domains and Membrane (Re)Shaping: From Biophysics to Biology. Springer Series in Biophysics, 2017, , 121-175.	0.4	7

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91	Microbial Cells Analysis by Atomic Force Microscopy. Methods in Enzymology, 2012, 506, 3-17.	0.4	6
92	Rapid mass changes measured in cells. Nature, 2017, 550, 465-466.	13.7	6
93	The Trypanosoma Brucei KIFC1 Kinesin Ensures the Fast Antibody Clearance Required for Parasite Infectivity. IScience, 2020, 23, 101476.	1.9	6
94	Stress-Induced Catch-Bonds to Enhance Bacterial Adhesion. Trends in Microbiology, 2021, 29, 286-288.	3.5	6
95	Impaired Cytoskeletal and Membrane Biophysical Properties of Acanthocytes in Hypobetalipoproteinemia â€“ A Case Study. Frontiers in Physiology, 2021, 12, 638027.	1.3	6
96	Rotavirus Binding to Cell Surface Receptors Directly Recruiting Î± 2 Integrin. Advanced NanoBiomed Research, 0, , 2100077.	1.7	5
97	Nanomicrobiology. Nanoscale Research Letters, 2007, 2, 365-372.	3.1	4
98	Role of the Redox State of Human Peroxiredoxin-5 on Its TLR4-Activating DAMP Function. Antioxidants, 2021, 10, 1902.	2.2	4
99	Atomic force microscopy applied to interrogate nanoscale cellular chemistry and supramolecular bond dynamics for biomedical applications. Chemical Communications, 2022, 58, 5072-5087.	2.2	4
100	Probing Single Virus Binding Sites on Living Mammalian Cells Using AFM. Methods in Molecular Biology, 2018, 1814, 483-514.	0.4	3
101	Altered Glycan Expression on Breast Cancer Cells Facilitates Infection by T3 Seroptype Oncolytic Reovirus. Nano Letters, 2021, 21, 9720-9728.	4.5	3
102	Topography imaging of herpesvirus in native condition using atomic force microscopy. Clinical Microbiology and Infection, 2018, 24, 610-611.	2.8	2
103	Recognition Imaging Using Atomic Force Microscopy. , 2009, , 525-554.		2
104	Multiparametric Atomic Force Microscopy Identifies Multiple Structural and Physical Heterogeneities on the Surface of <i>Trypanosoma brucei</i>. ACS Omega, 2020, 5, 20953-20959.	1.6	2
105	Single-Molecule Force Spectroscopy of Microbial Cell Envelope Proteins. , 2011, , 317-334.		2
106	Imaging Chemical Groups and Molecular Recognition Sites on Live Cells Using AFM. Nanoscience and Technology, 2009, , 33-48.	1.5	2
107	Rotavirus Binding to Cell Surface Receptors Directly Recruiting Î±₂ Integrin. Advanced NanoBiomed Research, 2021, 1, .	1.7	2
108	Atomic Force Microscopy of Living Cells. Neuromethods, 2014, , 225-255.	0.2	1

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109	Nanomechanics of Yeast Surfaces Revealed by AFM. Nanoscience and Technology, 2012, , 171-193.	1.5	0
110	Role of the amyloid region in the formation and propagation of Als adhesive nanodomains on<i>Candida albicans</i>. Proceedings of SPIE, 2013, , .	0.8	0
111	Editorial: Scanning Probe Microscopies and Related Methods in Biology. Frontiers in Molecular Biosciences, 2021, 8, 657939.	1.6	0
112	Towards a Nanoscale View of Microbial Surfaces Using the Atomic Force Microscope. , 2010, , 583-598.		0
113	Imaging Chemical Groups and Molecular Recognition Sites on Live Cells Using AFM. , 2010, , 463-478.		0
114	Stretching and Imaging Individual Proteins on Live Cells Using Atomic Force Microscopy. , 2012, , 211-233.		0
115	Virus infection: may the (binding) force be with you?. TheScienceBreaker, 2019, 05, .	0.0	0
116	Towards a Nanoscale View of Microbial Surfaces Using the Atomic Force Microscope. , 2008, , 111-126.		0