Hermann E Gaub

List of Publications by Year
in descending order

98 papers	12,845 citations	61984 43 h-index	37204 96 g-index
107 all docs	107 docs citations	107 times ranked	8920 citing authors

#	Article	IF	Citations
1	A tethered ligand assay to probe SARS-CoV-2:ACE2 interactions. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, e2114397119.	7.1	38
2	Atomic Force Microscopy-Based Force Spectroscopy and Multiparametric Imaging of Biomolecular and Cellular Systems. Chemical Reviews, 2021, 121, 11701-11725.	47.7	109
3	Designed anchoring geometries determine lifetimes of biotinâ€“streptavidin bonds under constant load and enable ultra-stable coupling. Nanoscale, 2020, 12, 21131-21137.	5.6	18
4	Different Vinculin Binding Sites Use the Same Mechanism to Regulate Directional Force Transduction. Biophysical Journal, 2020, 118, 1344-1356.	0.5	21
5	Switchable reinforced streptavidin. Nanoscale, 2020, 12, 6803-6809.	5.6	2
6	Singleâ€Molecule Manipulation in Zeroâ€Mode Waveguides. Small, 2020, 16, 1906740.	10.0	3
7	Extreme mechanical stability in protein complexes. Current Opinion in Structural Biology, 2020, 60, 124-130.	5.7	26
8	Streptavidin/biotin: Tethering geometry defines unbinding mechanics. Science Advances, 2020, 6, eaay5999.	10.3	66
9	Mechanisms of Nanonewton Mechanostability in a Protein Complex Revealed by Molecular Dynamics Simulations and Single-Molecule Force Spectroscopy. Journal of the American Chemical Society, 2019, 141, 14752-14763.	13.7	55
10	DNA-free directed assembly in single-molecule cut-and-paste. Nanoscale, 2019, 11, 407-411.	5.6	16
11	Dronpa: A Light-Switchable Fluorescent Protein for Opto-Biomechanics. Nano Letters, 2019, 19, 3176-3181.	9.1	25
12	Direction Matters: Monovalent Streptavidin/Biotin Complex under Load. Nano Letters, 2019, 19, 3415-3421.	9.1	53
13	Atomic force microscopy-based mechanobiology. Nature Reviews Physics, 2019, 1, 41-57.	26.6	500
14	Molecular mechanism of extreme mechanostability in a pathogen adhesin. Science, 2018, 359, 1527-1533.	12.6	176
15	Calcium stabilizes the strongest protein fold. Nature Communications, 2018, 9, 4764.	12.8	41
16	Ligand Binding Stabilizes Cellulosomal Cohesins as Revealed by AFM-based Single-Molecule Force Spectroscopy. Scientific Reports, 2018, 8, 9634.	3.3	9
17	Enzymeâ€Mediated, Siteâ€Specific Protein Coupling Strategies for Surfaceâ€Based Binding Assays. Angewandte Chemie - International Edition, 2018, 57, 12666-12669.	13.8	24
18	Enzymeâ€Mediated, Siteâ€Specific Protein Coupling Strategies for Surfaceâ€Based Binding Assays. Angewandte Chemie, 2018, 130, 12848-12851.	2.0	1

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19	Covalent Immobilization of Proteins for the Single Molecule Force Spectroscopy. Journal of Visualized Experiments, 2018, , .	0.3	10
20	Single-molecule force spectroscopy on polyproteins and receptorâ€“ligand complexes: The current toolbox. Journal of Structural Biology, 2017, 197, 3-12.	2.8	109
21	Membrane proteins scrambling through a foldinglandscape. Science, 2017, 355, 907-908.	12.6	13
22	Elastin-like Polypeptide Linkers for Single-Molecule Force Spectroscopy. ACS Nano, 2017, 11, 6346-6354.	14.6	72
23	Atomic force microscopy-based characterization and design of biointerfaces. Nature Reviews Materials, 2017, 2, .	48.7	145
24	Combining in Vitro and in Silico Single-Molecule Force Spectroscopy to Characterize and Tune Cellulosomal Scaffoldin Mechanics. Journal of the American Chemical Society, 2017, 139, 17841-17852.	13.7	53
25	Post-Translational Sortase-Mediated Attachment of High-Strength Force Spectroscopy Handles. ACS Omega, 2017, 2, 3064-3069.	3.5	43
26	Mechanical Stability of a High-Affinity Toxin Anchor from the Pathogen Clostridium perfringens. Journal of Physical Chemistry B, 2017, 121, 3620-3625.	2.6	15
27	Monodisperse measurement of the biotin-streptavidin interaction strength in a well-defined pulling geometry. PLoS ONE, 2017, 12, e0188722.	2.5	40
28	Strep -Tag II and Monovalent Strep -Tactin as Novel Handles in Single-Molecule Cut-and-Paste. Small Methods, 2017, 1, 1700169.	8.6	6
29	Increasing evidence of mechanical force as a functional regulator in smooth muscle myosin light chain kinase. ELife, 2017, 6, .	6.0	15
30	Biasing effects of receptor-ligand complexes on protein-unfolding statistics. Physical Review E, 2016, 94, 042412.	2.1	14
31	Nanoscale Engineering of Designer Cellulosomes. Advanced Materials, 2016, 28, 5619-5647.	21.0	42
32	Sequence-Independent Cloning and Post-Translational Modification of Repetitive Protein Polymers through Sortase and Sfp-Mediated Enzymatic Ligation. Biomacromolecules, 2016, 17, 1330-1338.	5.4	26
33	Monovalent Strep-Tactin for strong and site-specific tethering in nanospectroscopy. Nature Nanotechnology, 2016, 11, 89-94.	31.5	37
34	Câ€5 Propynyl Modifications Enhance the Mechanical Stability of DNA. ChemPhysChem, 2015, 16, 2085-2090.	2.1	6
35	Resolving dual binding conformations of cellulosome cohesin-dockerin complexes using single-molecule force spectroscopy. ELife, 2015, 4, .	6.0	39
36	Tip localization of an atomic force microscope in transmission microscopy with nanoscale precision. Review of Scientific Instruments, 2015, 86, 035109.	1.3	5

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37	Mapping Mechanical Force Propagation through Biomolecular Complexes. Nano Letters, 2015, 15, 7370-7376.	9.1	83
38	Energy profile of nanobodyâ€“GFP complex under force. Physical Biology, 2015, 12, 056009.	1.8	11
39	Ultrastable cellulosome-adhesion complex tightens under load. Nature Communications, 2014, 5, 5635.	12.8	92
40	From genes to protein mechanics on a chip. Nature Methods, 2014, 11, 1127-1130.	19.0	66
41	Single molecule techniques â€•applications in biology. FEBS Letters, 2014, 588, 3519-3519.	2.8	3
42	Proteinâ€“DNA Chimeras for Nano Assembly. ACS Nano, 2014, 8, 6551-6555.	14.6	37
43	Placing Individual Molecules in the Center of Nanoapertures. Nano Letters, 2014, 14, 391-395.	9.1	33
44	A Force-Based, Parallel Assay for the Quantification of Protein-DNA Interactions. PLoS ONE, 2014, 9, e89626.	2.5	13
45	Parallel Force Assay for Protein-Protein Interactions. PLoS ONE, 2014, 9, e115049.	2.5	8
46	Proteinâ€“DNA force assay in a microfluidic format. Lab on A Chip, 2013, 13, 4198.	6.0	7
47	Stamping Vital Cellsâ€”a Force-Based Ligand Receptor Assay. Biophysical Journal, 2013, 105, 2687-2694.	0.5	6
48	Sequence-specific inhibition of Dicer measured with a force-based microarray for RNA ligands. Nucleic Acids Research, 2013, 41, e69-e69.	14.5	12
49	Nanoapertures for AFM-based single-molecule force spectroscopy. International Journal of Nanotechnology, 2013, 10, 607.	0.2	10
50	Single-molecule dissection of the high-affinity cohesinâ€“dockerin complex. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 20431-20436.	7.1	104
51	Functional Assembly of Aptamer Binding Sites by Single-Molecule Cut-and-Paste. Nano Letters, 2012, 12, 2425-2428.	9.1	20
52	Nanoscale Arrangement of Proteins by Single-Molecule Cut-and-Paste. Journal of the American Chemical Society, 2012, 134, 15193-15196.	13.7	17
53	DNAâ€“Protein Binding Force Chip. Small, 2012, 8, 3269-3273.	10.0	11
54	Peptideâ€“Antibody Complex as Handle for Singleâ€Molecule Cut & Paste. ChemPhysChem, 2012, 13, 914-917.	2.1	3

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55	Single-Molecule Mechanoenzymatics. Annual Review of Biophysics, 2012, 41, 497-518.	10.0	63
56	A Conditional Gating Mechanism Assures the Integrity of the Molecular Force-Sensor Titin Kinase. Biophysical Journal, 2011, 101, 1978-1986.	0.5	20
57	A high throughput molecular force assay for proteinâ€“DNA interactions. Lab on A Chip, 2011, 11, 856.	6.0	18
58	Interlaboratory round robin on cantilever calibration for AFM force spectroscopy. Ultramicroscopy, 2011, 111, 1659-1669.	1.9	110
59	Atomic force microscope-based single-molecule force spectroscopy of RNA unfolding. Analytical Biochemistry, 2011, 414, 1-6.	2.4	27
60	Exploring the Conformationâ€Regulated Function of Titin Kinase by Mechanical Pump and Probe Experiments with Single Molecules. Angewandte Chemie - International Edition, 2010, 49, 1147-1150.	13.8	30
61	Inside Cover: Exploring the Conformation-Regulated Function of Titin Kinase by Mechanical Pump and Probe Experiments with Single Molecules (Angew. Chem. Int. Ed. 6/2010). Angewandte Chemie - International Edition, 2010, 49, 990-990.	13.8	0
62	Electrically induced bonding of DNA to gold. Nature Chemistry, 2010, 2, 745-749.	13.6	27
63	Photothermal cantilever actuation for fast single-molecule force spectroscopy. Review of Scientific Instruments, 2009, 80, 073702.	1.3	35
64	Switching the mechanics of dsDNA by Cu salicylic aldehyde complexation. Nanotechnology, 2009, 20, 434002.	2.6	11
65	Force and function: probing proteins with AFM-based force spectroscopy. Current Opinion in Structural Biology, 2009, 19, 605-614.	5.7	239
66	Optically monitoring the mechanical assembly of single molecules. Nature Nanotechnology, 2009, 4, 45-49.	31.5	59
67	Quantitative Detection of Small Molecule/DNA Complexes Employing a Force-Based and Label-Free DNA-Microarray. Biophysical Journal, 2009, 96, 4661-4671.	0.5	19
68	DNA as a Force Sensor in an Aptamer-Based Biochip for Adenosine. Analytical Chemistry, 2009, 81, 3159-3164.	6.5	45
69	Triggering Enzymatic Activity with Force. Nano Letters, 2009, 9, 3290-3295.	9.1	56
70	Structure and Mechanics of Membrane Proteins. Annual Review of Biochemistry, 2008, 77, 127-148.	11.1	246
71	Comparing Proteins by Their Unfolding Pattern. Biophysical Journal, 2008, 95, 426-434.	0.5	71
72	Force-based Analysis of Multidimensional Energy Landscapes: Application of Dynamic Force Spectroscopy and Steered Molecular Dynamics Simulations to an Antibody Fragmentâ€“Peptide Complex. Journal of Molecular Biology, 2008, 381, 1253-1266.	4.2	48

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73	Single-cell force spectroscopy. Journal of Cell Science, 2008, 121, 1785-1791.	2.0	443
74	Nanoparticle Self-Assembly on a DNA-Scaffold Written by Single-Molecule Cut-and-Paste. Nano Letters, 2008, 8, 3692-3695.	9.1	51
75	Mechanoenzymatics of titin kinase. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 13385-13390.	7.1	311
76	Predicting the Rupture Probabilities of Molecular Bonds in Series. Biophysical Journal, 2007, 93, 1215-1223.	0.5	30
77	B-S Transition in Short Oligonucleotides. Biophysical Journal, 2007, 93, 2400-2409.	0.5	73
78	Affinity-Matured Recombinant Antibody Fragments Analyzed by Single-Molecule Force Spectroscopy. Biophysical Journal, 2007, 93, 3583-3590.	0.5	73
79	Recognition of â€œMirrorâ€‰imageâ€•DNA by Small Molecules. Angewandte Chemie - International Edition, 2007, 46, 8384-8387.	13.8	21
80	Bacteriorhodopsin Folds into the Membrane against an External Force. Journal of Molecular Biology, 2006, 357, 644-654.	4.2	93
81	Modelling cantilever-based force spectroscopy with polymers. Polymer, 2006, 47, 2555-2563.	3.8	33
82	Covalent immobilization of recombinant fusion proteins with hAGT for single molecule force spectroscopy. European Biophysics Journal, 2005, 35, 72-78.	2.2	47
83	Highly Stretched Single Polymers: Atomic-Force-Microscope Experiments VersusAb-InitioTheory. Physical Review Letters, 2005, 94, 048301.	7.8	165
84	Unzipping DNA Oligomers. Nano Letters, 2003, 3, 493-496.	9.1	109
85	Dynamic single-molecule force spectroscopy: bond rupture analysis with variable spacer length. Journal of Physics Condensed Matter, 2003, 15, S1709-S1723.	1.8	126
86	DNA: A Programmable Force Sensor. Science, 2003, 301, 367-370.	12.6	167
87	Stability of Bacteriorhodopsin Î±-Helices and Loops Analyzed by Single-Molecule Force Spectroscopy. Biophysical Journal, 2002, 83, 3578-3588.	0.5	163
88	Discrete interactions in cell adhesion measured by single-molecule force spectroscopy. Nature Cell Biology, 2000, 2, 313-317.	10.3	551
89	Affinity Imaging of Red Blood Cells Using an Atomic Force Microscope. Journal of Histochemistry and Cytochemistry, 2000, 48, 719-724.	2.5	196
90	Mechanical Stability of Single DNA Molecules. Biophysical Journal, 2000, 78, 1997-2007.	0.5	405

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91	A Metal-Chelating Microscopy Tip as a New Toolbox for Single-Molecule Experiments by Atomic Force Microscopy. Biophysical Journal, 2000, 78, 3275-3285.	0.5	166
92	Atomic force microscopy of native purple membrane. Biochimica Et Biophysica Acta - Bioenergetics, 2000, 1460, 27-38.	1.0	121
93	Unfolding Forces of Titin and Fibronectin Domains Directly Measured by AFM. Advances in Experimental Medicine and Biology, 2000, 481, 129-141.	1.6	71
94	Small cantilevers for force spectroscopy of single molecules. Journal of Applied Physics, 1999, 86, 2258-2262.	2.5	368
95	How Strong Is a Covalent Bond?. Science, 1999, 283, 1727-1730.	12.6	1,007
96	Single molecule force spectroscopy of spectrin repeats: low unfolding forces in helix bundles. Journal of Molecular Biology, 1999, 286, 553-561.	4.2	530
97	Single Molecule Force Spectroscopy on Polysaccharides by Atomic Force Microscopy. Science, 1997, 275, 1295-1297.	12.6	1,096
98	Reversible Unfolding of Individual Titin Immunoglobulin Domains by AFM. Science, 1997, 276, 1109-1112.	12.6	2,874