Georg E Fantner

List of Publications by Year
in descending order

Source: https://exaly.com/author-pdf/425634/publications.pdf

Version: 2024-02-01

77 papers	5,265 citations	109137 35 h-index	85405 71 g-index
87 all docs	87 docs citations	87 times ranked	6312 citing authors

#	Article	IF	Citations
1	Sacrificial bonds and hidden length dissipate energy as mineralized fibrilsÂseparate during bone fracture. Nature Materials, 2005, 4, 612-616.	13.3	829
2	Kinetics of antimicrobial peptide activity measured on individual bacterial cells using high-speed atomic force microscopy. Nature Nanotechnology, 2010, 5, 280-285.	15.6	308
3	Sacrificial Bonds and Hidden Length: Unraveling Molecular Mesostructures in Tough Materials. Biophysical Journal, 2006, 90, 1411-1418.	0.2	273
4	High-resolution AFM imaging of intact and fractured trabecular bone. Bone, 2004, 35, 4-10.	1.4	243
5	Components for high speed atomic force microscopy. Ultramicroscopy, 2006, 106, 881-887.	0.8	220
6	Focused electron beam induced deposition: A perspective. Beilstein Journal of Nanotechnology, 2012, 3, 597-619.	1.5	214
7	Protective coatings on extensible biofibres. Nature Materials, 2007, 6, 669-672.	13.3	206
8	Virus-Templated Assembly of Porphyrins into Light-Harvesting Nanoantennae. Journal of the American Chemical Society, 2010, 132, 1462-1463.	6.6	181
9	APPLIED PHYSICS: High-Speed Atomic Force Microscopy. Science, 2006, 314, 601-602.	6.0	169
10	Chronic inflammation imposes aberrant cell fate in regenerating epithelia through mechanotransduction. Nature Cell Biology, 2016, 18, 168-180.	4.6	127
11	Nanoscale Ion Mediated Networks in Bone:â€‰Osteopontin Can Repeatedly Dissipate Large Amounts of Energy. Nano Letters, 2007, 7, 2491-2498.	4.5	123
12	Influence of the degradation of the organic matrix on the microscopic fracture behavior of trabecular bone. Bone, 2004, 35, 1013-1022.	1.4	113
13	Force Spectroscopy of Collagen Fibers to Investigate Their Mechanical Properties and Structural Organization. Biophysical Journal, 2004, 86, 3186-3193.	0.2	111
14	Rigid design of fast scanning probe microscopes using finite element analysis. Ultramicroscopy, 2004, 100, 259-265.	0.8	110
15	Evidence that Collagen Fibrils in Tendons Are Inhomogeneously Structured in a Tubelike Manner. Biophysical Journal, 2003, 84, 2593-2598.	0.2	109
16	Maturing Mycobacterium smegmatis peptidoglycan requires non-canonical crosslinks to maintain shape. ELife, 2018, 7, .	2.8	108
17	High-speed photothermal off-resonance atomic force microscopy reveals assembly routes of centriolar scaffold protein SAS-6. Nature Nanotechnology, 2018, 13, 696-701.	15.6	105
18	Cancer-cell stiffening via cholesterol depletion enhances adoptive T-cell immunotherapy. Nature Biomedical Engineering, 2021, 5, 1411-1425.	11.6	96

#	Article	IF	Citations
19	High-Resolution Correlative Microscopy: Bridging the Gap between Single Molecule Localization Microscopy and Atomic Force Microscopy. Nano Letters, 2015, 15, 4896-4904.	4.5	81
20	Harnessing the damping properties of materials for high-speed atomic force microscopy. Nature Nanotechnology, 2016, 11, 147-151.	15.6	81
21	Data acquisition system for high speed atomic force microscopy. Review of Scientific Instruments, 2005, 76, 026118.	0.6	75
22	Single-molecule kinetics of pore assembly by the membrane attack complex. Nature Communications, 2019, 10, 2066.	5.8	74
23	A Compressible Scaffold for Minimally Invasive Delivery of Large Intact Neuronal Networks. Advanced Healthcare Materials, 2015, 4, 301-312.	3.9	69
24	Hierarchical interconnections in the nano-composite material bone: Fibrillar cross-links resist fracture on several length scales. Composites Science and Technology, 2006, 66, 1205-1211.	3.8	66
25	The role of calcium and magnesium in the concrete tubes of the sandcastle worm. Journal of Experimental Biology, 2007, 210, 1481-1488.	0.8	63
26	Division site selection linked to inherited cell surface wave troughs in mycobacteria. Nature Microbiology, 2017, 2, 17094.	5.9	61
27	Detecting topological variations of DNA at single-molecule level. Nature Communications, 2019, 10, 3.	5.8	59
28	A 0.1% THD, 1-M<inline-formula> <tex-math notation="LaTeX">$Omega$ </tex-math> </inline-formula> to 1-G<inline-formula> <tex-math notation="LaTeX">$Omega$ </tex-math> </inline-formula> Tunable, Temperature-Compensated Transimpedance Amplifier Using a Multi-Element Pseudo-Resistor. IEEE Journal of Solid-State Circuits, 2018, 53, 1913-1923.	3.5	54
29	Bone diagnostic instrument. Review of Scientific Instruments, 2006, 77, 075105.	0.6	52
30	Effect of Ca2+ Ions on the Adhesion and Mechanical Properties of Adsorbed Layers of Human Osteopontin. Biophysical Journal, 2008, 95, 2939-2950.	0.2	51
31	Single-molecule kinetic analysis of HP1-chromatin binding reveals a dynamic network of histone modification and DNA interactions. Nucleic Acids Research, 2017, 45, 10504-10517.	6.5	49
32	Direct-write nanoscale printing of nanogranular tunnelling strain sensors for sub-micrometre cantilevers. Nature Communications, 2016, 7, 12487.	5.8	40
33	Investigations into the polymorphism of rat tail tendon fibrils using atomic force microscopy. Biochemical and Biophysical Research Communications, 2003, 303, 508-513.	1.0	38
34	Studying biological membranes with extended range high-speed atomic force microscopy. Scientific Reports, 2015, 5, 11987.	1.6	38
35	High-speed imaging upgrade for a standard sample scanning atomic force microscope using small cantilevers. Review of Scientific Instruments, 2014, 85, 093702.	0.6	36
36	A biphasic growth model for cell pole elongation in mycobacteria. Nature Communications, 2020, 11, 452.	5.8	36

#	Article	IF	Citations
37	Growth and Dissolution of Calcite in the Presence of Adsorbed Stearic Acid. Langmuir, 2015, 31, 7563-7571.	1.6	34
38	Mechanical Properties of Soft Biological Membranes for Organ-on-a-Chip Assessed by Bulge Test and AFM. ACS Biomaterials Science and Engineering, 2021, 7, 2990-2997.	2.6	32
39	Time-Resolved Scanning Ion Conductance Microscopy for Three-Dimensional Tracking of Nanoscale Cell Surface Dynamics. ACS Nano, 2021, 15, 17613-17622.	7.3	31
40	High-frequency multimodal atomic force microscopy. Beilstein Journal of Nanotechnology, 2014, 5, 2459-2467.	1.5	30
41	DMCMN: In Depth Characterization and Control of AFM Cantilevers With Integrated Sensing and Actuation. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2009, 131, .	0.9	28
42	Engineering Optically Active Defects in Hexagonal Boron Nitride Using Focused Ion Beam and Water. ACS Nano, 2022, 16, 3695-3703.	7.3	28
43	Design of a highâ€bandwidth tripod scanner for high speed atomic force microscopy. Scanning, 2016, 38, 889-900.	0.7	25
44	Scratching the Surface: Bacterial Cell Envelopes at the Nanoscale. MBio, 2020, 11, .	1.8	25
45	Correlative 3D microscopy of single cells using super-resolution and scanning ion-conductance microscopy. Nature Communications, 2021, 12, 4565.	5.8	25
46	Overlapping and essential roles for molecular and mechanical mechanisms in mycobacterial cell division. Nature Physics, 2020, 16, 57-62.	6.5	24
47	High-speed photography of the development of microdamage in trabecular bone during compression. Journal of Materials Research, 2006, 21, 1093-1100.	1.2	23
48	Probing the Morphology and Evolving Dynamics of 3D Printed Nanostructures Using High-Speed Atomic Force Microscopy. ACS Applied Materials & Interfaces, 2017, 9, 24456-24461.	4.0	23
49	Photothermal Off-Resonance Tapping for Rapid and Gentle Atomic Force Imaging of Live Cells. International Journal of Molecular Sciences, 2018, 19, 2984.	1.8	23
50	Automated wafer-scale fabrication of electron beam deposited tips for atomic force microscopes using pattern recognition. Nanotechnology, 2004, 15, 1131-1134.	1.3	20
51	Largeâ€Range HSâ€AFM Imaging of DNA Selfâ€Assembly through In Situ Dataâ€Driven Control. Small Methods, 2019, 3, 1900031.	4.6	20
52	Air and Waterâ€Stable nâ€Type Doping and Encapsulation of Flexible MoS₂ Devices with SU8. Advanced Electronic Materials, 2019, 5, 1800492.	2.6	18
53	The role of convolutional neural networks in scanning probe microscopy: a review. Beilstein Journal of Nanotechnology, 2021, 12, 878-901.	1.5	18
54	Increased drug permeability of a stiffened mycobacterial outer membrane in cells lacking MFS transporter Rv1410 and lipoprotein LprG. Molecular Microbiology, 2019, 111, 1263-1282.	1.2	17

#	Article	IF	Citations
55	Large-scale analysis of high-speed atomic force microscopy data sets using adaptive image processing. Beilstein Journal of Nanotechnology, 2012, 3, 747-758.	1.5	16
56	Microfluidic bacterial traps for simultaneous fluorescence and atomic force microscopy. Nano Research, 2017, 10, 3896-3908.	5.8	16
57	High-Throughput Nanocapillary Filling Enabled by Microwave Radiation for Scanning Ion Conductance Microscopy Imaging. ACS Applied Nano Materials, 2020, 3, 7829-7834.	2.4	13
58	Components for high-speed atomic force microscopy optimized for low phase-lag. , 2017, , .		11
59	Digitally controlled analog proportional-integral-derivative (PID) controller for high-speed scanning probe microscopy. Review of Scientific Instruments, 2017, 88, 123712.	0.6	11
60	Data-Driven Controller Design for Atomic-Force Microscopy. IFAC-PapersOnLine, 2017, 50, 10437-10442.	0.5	10
61	Kinetic and structural roles for the surface in guiding SAS-6 self-assembly to direct centriole architecture. Nature Communications, 2021, 12, 6180.	5.8	10
62	Single-Cycle-PLL Detection for Real-Time FM-AFM Applications. IEEE Transactions on Biomedical Circuits and Systems, 2014, 8, 206-215.	2.7	8
63	An atomic force microscope integrated with a helium ion microscope for correlative nanoscale characterization. Beilstein Journal of Nanotechnology, 2020, 11, 1272-1279.	1.5	8
64	Imaging Bacterial Cell Death Induced by Antimicrobial Peptides in Real Time Using High Speed AFM. Microscopy and Microanalysis, 2010, 16, 466-467.	0.2	7
65	Seeing and Touching the Mycomembrane at the Nanoscale. Journal of Bacteriology, 2021, 203, .	1.0	5
66	Integration of sharp silicon nitride tips into high-speed SU8 cantilevers in a batch fabrication process. Beilstein Journal of Nanotechnology, 2019, 10, 2357-2363.	1.5	4
67	Instruments of change for academic tool development. Nature Physics, 2021, 17, 421-424.	6.5	4
68	Analysis of local deformation effects in resistive strain sensing of a submicron-thickness AFM cantilever. Proceedings of SPIE, 2013, , .	0.8	3
69	Parietal Structures of Escherichia coli Can Impact the D-Cateslytin Antibacterial Activity. ACS Chemical Biology, 2020, 15, 2801-2814.	1.6	3
70	Tuning SAS-6 architecture with monobodies impairs distinct steps of centriole assembly. Nature Communications, 2021, 12, 3805.	5.8	3
71	Reducing uncertainties in energy dissipation measurements in atomic force spectroscopy of molecular networks and cell-adhesion studies. Scientific Reports, 2018, 8, 9390.	1.6	2
72	Modeling and Design of high-speed FM-AFM driver electronics using Cadence VirtuosoÂ® and SimulinkÂ®. IFAC-PapersOnLine, 2015, 48, 671-672.	0.5	1

#	Article	IF	Citations
73	Highâ€Speed Atomic Force Microscopy: Largeâ€Range HSâ€AFM Imaging of DNA Selfâ€Assembly through In Situ Dataâ€Driven Control (Small Methods 7/2019). Small Methods, 2019, 3, 1970022.	4.6	1
74	Model-based Q Factor Control for Photothermally Excited Microcantilevers. , 2019, , .		1
75	Self-Actuated Polymer-Based Cantilevers with Sharp Silicon Tips for High-Speed Atomic Force Microscopy. , 2021, , .		1
76	Correlated Atomic Force Microscopy and Single Molecule Localization Microscopy. Microscopy and Microanalysis, 2015, 21, 1625-1626.	0.2	0
77	In-situ Correlative Analysis of electrical and magnetic properties of Ion-beam treated surfaces by combination of AFM and FIB. Microscopy and Microanalysis, 2021, 27, 1020-1020.	0.2	0