Tilman E SchÃ¤ffer

List of Publications by Year
in descending order

104 papers	7,252 citations	71061 41 h-index	56687 83 g-index
107 all docs	107 docs citations	107 times ranked	7961 citing authors

#	Article	IF	Citations
1	Molecular mechanistic origin of the toughness of natural adhesives, fibres and composites. Nature, 1999, 399, 761-763.	13.7	1,153
2	Does Abalone Nacre Form by Heteroepitaxial Nucleation or by Growth through Mineral Bridges?. Chemistry of Materials, 1997, 9, 1731-1740.	3.2	387
3	Small cantilevers for force spectroscopy of single molecules. Journal of Applied Physics, 1999, 86, 2258-2262.	1.1	368
4	Platelet-derived HMGB1 is a critical mediator of thrombosis. Journal of Clinical Investigation, 2015, 125, 4638-4654.	3.9	281
5	Studies of vibrating atomic force microscope cantilevers in liquid. Journal of Applied Physics, 1996, 80, 3622-3627.	1.1	266
6	Fast imaging and fast force spectroscopy of single biopolymers with a new atomic force microscope designed for small cantilevers. Review of Scientific Instruments, 1999, 70, 4300-4303.	0.6	246
7	Finite optical spot size and position corrections in thermal spring constant calibration. Nanotechnology, 2004, 15, 1344-1350.	1.3	209
8	A New Phase of Oriented Mesoporous Silicate Thin Films. Chemistry of Materials, 1997, 9, 1962-1967.	3.2	189
9	Practical implementation of dynamic methods for measuring atomic force microscope cantilever spring constants. Nanotechnology, 2006, 17, 2135-2145.	1.3	165
10	Gradient of Rigidity in the Lamellipodia of Migrating Cells Revealed by Atomic Force Microscopy. Biophysical Journal, 2005, 89, 667-675.	0.2	158
11	Probing oscillatory hydration potentials using thermal-mechanical noise in an atomic-force microscope. Physical Review B, 1995, 52, R8692-R8695.	1.1	143
12	Oxidative stress-induced posttranslational modifications of alpha-synuclein: Specific modification of alpha-synuclein by 4-hydroxy-2-nonenal increases dopaminergic toxicity. Molecular and Cellular Neurosciences, 2013, 54, 71-83.	1.0	143
13	Imaging viscoelastic properties of live cells by AFM: power-law rheology on the nanoscale. Soft Matter, 2015, 11, 4584-4591.	1.2	140
14	Comparison of Scanning Ion Conductance Microscopy with Atomic Force Microscopy for Cell Imaging. Langmuir, 2011, 27, 697-704.	1.6	134
15	Magnetic force microscopy of the submicron magnetic assembly in a magnetotactic bacterium. Applied Physics Letters, 1995, 66, 2582-2584.	1.5	133
16	Biomechanical and biomolecular characterization of extracellular matrix structures in human colon carcinomas. Matrix Biology, 2018, 68-69, 180-193.	1.5	121
17	Noncontact Measurement of the Local Mechanical Properties of Living Cells Using Pressure Applied via a Pipette. Biophysical Journal, 2008, 95, 3017-3027.	0.2	112
18	Evaluation of Lamina Cribrosa and Peripapillary Sclera Stiffness in Pseudoexfoliation and Normal Eyes by Atomic Force Microscopy. , 2012, 53, 2960.		103

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19	In vitro differentiation of human dental follicle cells with dexamethasone and insulin. Cell Biology International, 2005, 29, 567-575.	1.4	101
20	Accurate Height and Volume Measurements on Soft Samples with the Atomic Force Microscope. Langmuir, 2004, 20, 10038-10045.	1.6	98
21	Engineering of a bio-functionalized hybrid off-the-shelf heart valve. Biomaterials, 2014, 35, 2130-2139.	5.7	96
22	Image formation, resolution, and height measurement in scanning ion conductance microscopy. Journal of Applied Physics, 2009, 105, .	1.1	95
23	Regulation of oxidized platelet lipidome: implications for coronary artery disease. European Heart Journal, 2017, 38, 1993-2005.	1.0	92
24	Dynamic interactions of p53 with DNA in solution by time-lapse atomic force microscopy. Journal of Molecular Biology, 2001, 314, 233-243.	2.0	88
25	Focal Adhesion Kinase Stabilizes the Cytoskeleton. Biophysical Journal, 2011, 101, 2131-2138.	0.2	87
26	Mapping the mechanical stiffness of live cells with the scanning ion conductance microscope. Soft Matter, 2013, 9, 3230.	1.2	87
27	Comparison of Atomic Force Microscopy and Scanning Ion Conductance Microscopy for Live Cell Imaging. Langmuir, 2015, 31, 6807-6813.	1.6	84
28	Assembly of submicrometre ferromagnets in gallium arsenide semiconductors. Nature, 1995, 377, 707-710.	13.7	81
29	Functional Relevance of the Anaphylatoxin Receptor C3aR for Platelet Function and Arterial Thrombus Formation Marks an Intersection Point Between Innate Immunity and Thrombosis. Circulation, 2018, 138, 1720-1735.	1.6	77
30	Characterization and optimization of the detection sensitivity of an atomic force microscope for small cantilevers. Journal of Applied Physics, 1998, 84, 4661-4666.	1.1	70
31	Analyzing Heat Capacity Profiles of Peptide-Containing Membranes: Cluster Formation of Gramicidin A. Biophysical Journal, 2003, 84, 2427-2439.	0.2	68
32	Corynebacterium diphtheriae invasion-associated protein (DIP1281) is involved in cell surface organization, adhesion and internalization in epithelial cells. BMC Microbiology, 2010, 10, 2.	1.3	64
33	High-speed atomic force microscopy for large scan sizes using small cantilevers. Nanotechnology, 2010, 21, 225705.	1.3	63
34	Combined atomic force microscopy (AFM) and traction force microscopy (TFM) reveals a correlation between viscoelastic material properties and contractile prestress of living cells. Soft Matter, 2019, 15, 1721-1729.	1.2	61
35	Viscoelastic properties of normal and cancerous human breast cells are affected differently by contact to adjacent cells. Acta Biomaterialia, 2017, 55, 239-248.	4.1	58
36	Imaging and Patterning of Pore-Suspending Membranes with Scanning Ion Conductance Microscopy. Langmuir, 2009, 25, 3022-3028.	1.6	57

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37	Calculation of thermal noise in an atomic force microscope with a finite optical spot size. Nanotechnology, 2005, 16, 664-670.	1.3	55
38	Distribution of Young's Modulus in Porcine Corneas after Riboflavin/UVA-Induced Collagen Cross-Linking as Measured by Atomic Force Microscopy. PLoS ONE, 2014, 9, e88186.	1.1	55
39	Microfabricated small metal cantilevers with silicon tip for atomic force microscopy. Journal of Microelectromechanical Systems, 2000, 9, 112-116.	1.7	46
40	Optimized detection of normal vibration modes of atomic force microscope cantilevers with the optical beam deflection method. Journal of Applied Physics, 2005, 97, 083524.	1.1	46
41	Influence of Hydrocortisone on the Mechanical Properties of the Cerebral Endothelium In Vitro. Biophysical Journal, 2005, 89, 3904-3910.	0.2	46
42	Structural Insight into the Giant Ca2+-Binding Adhesin SiiE: Implications for the Adhesion of Salmonella enterica to Polarized Epithelial Cells. Structure, 2013, 21, 741-752.	1.6	46
43	Chorein Sensitivity of Actin Polymerization, Cell Shape and Mechanical Stiffness of Vascular Endothelial Cells. Cellular Physiology and Biochemistry, 2013, 32, 728-742.	1.1	46
44	Lateral Resolution and Image Formation in Scanning Ion Conductance Microscopy. Analytical Chemistry, 2015, 87, 7117-7124.	3.2	43
45	High-speed scanning ion conductance microscopy for sub-second topography imaging of live cells. Nanoscale, 2019, 11, 8579-8587.	2.8	43
46	Thrombin-induced cytoskeleton dynamics in spread human platelets observed with fast scanning ion conductance microscopy. Scientific Reports, 2017, 7, 4810.	1.6	42
47	Strain-specific differences in pili formation and the interaction of Corynebacterium diphtheriae with host cells. BMC Microbiology, 2010, 10, 257.	1.3	41
48	High-speed force mapping on living cells with a small cantilever atomic force microscope. Review of Scientific Instruments, 2014, 85, 073703.	0.6	40
49	AFM combines functional and morphological analysis of peripheral myelinated and demyelinated nerve fibers. NeuroImage, 2007, 37, 1218-1226.	2.1	37
50	Effect of Sample Slope on Image Formation in Scanning Ion Conductance Microscopy. Analytical Chemistry, 2014, 86, 9838-9845.	3.2	37
51	Vacuolar structures can be identified by AFM elasticity mapping. Ultramicroscopy, 2007, 107, 895-901.	0.8	36
52	Scanning ion conductance microscopy with distance-modulated shear force control. Nanotechnology, 2007, 18, 145505.	1.3	33
53	Imaging the elastic modulus of human platelets during thrombininduced activation using scanning ion conductance microscopy. Thrombosis and Haemostasis, 2015, 113, 305-311.	1.8	33
54	<title>Atomic force microscope for small cantilevers</title>. , 1997, 3009, 48.		32

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55	Force spectroscopy with a large dynamic range using small cantilevers and an array detector. Journal of Applied Physics, 2002, 91, 4739-4746.	1.1	32
56	Creep compliance mapping by atomic force microscopy. Polymer, 2014, 55, 219-225.	1.8	32
57	LeftyA decreases Actin Polymerization and Stiffness in Human Endometrial Cancer Cells. Scientific Reports, 2016, 6, 29370.	1.6	32
58	Nanomechanics of Molecules and Living Cells with Scanning Ion Conductance Microscopy. Analytical Chemistry, 2013, 85, 6988-6994.	3.2	30
59	Hematopoietic Stem and Progenitor Cell Expansion in Contact with Mesenchymal Stromal Cells in a Hanging Drop Model Uncovers Disadvantages of 3D Culture. Stem Cells International, 2016, 2016, 1-13.	1.2	27
60	High-frequency ultrasound-guided disruption of glycoprotein VI-targeted microbubbles targets atheroprogressison in mice. Biomaterials, 2015, 36, 80-89.	5.7	25
61	Reduced platelet forces underlie impaired hemostasis in mouse models of MYH9 -related disease. Science Advances, 2022, 8, eabn2627.	4.7	21
62	An Accurate Model for the Ion Currentâ€“Distance Behavior in Scanning Ion Conductance Microscopy Allows for Calibration of Pipet Tip Geometry and Tipâ€“Sample Distance. Analytical Chemistry, 2017, 89, 11875-11880.	3.2	20
63	Contour and persistence length of Corynebacterium diphtheriae pili by atomic force microscopy. European Biophysics Journal, 2012, 41, 561-570.	1.2	19
64	<title>Atomic force microscopy using small cantilevers</title>. , 1997, , .		18
65	Optical knife-edge displacement sensor for high-speed atomic force microscopy. Applied Physics Letters, 2014, 104, 103101.	1.5	18
66	Ultrafast Imaging of Cardiomyocyte Contractions by Combining Scanning Ion Conductance Microscopy with a Microelectrode Array. Analytical Chemistry, 2019, 91, 9648-9655.	3.2	18
67	Mapping the creep compliance of living cells with scanning ion conductance microscopy reveals a subcellular correlation between stiffness and fluidity. Nanoscale, 2019, 11, 6982-6989.	2.8	18
68	Neurons, Erythrocytes and Beyond â€“The Diverse Functions of Chorein. NeuroSignals, 2017, 25, 117-126.	0.5	17
69	Resonance compensating chirp mode for mapping the rheology of live cells by high-speed atomic force microscopy. Applied Physics Letters, 2018, 113, .	1.5	17
70	Spatial organization of Dps and DNAâ€“Dps complexes. Journal of Molecular Biology, 2021, 433, 166930.	2.0	17
71	Platelet ACKR3/CXCR7 favors antiplatelet lipids over anÂatherothrombotic lipidome and regulates thromboinflammation. Blood, 2022, 139, 1722-1742.	0.6	17
72	Structure and interactions of calcite spherulites with Î±-chitin in the brown shrimp (Penaeus aztecus) shell. Materials Science and Engineering C, 2007, 27, 8-13.	3.8	16

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73	Comparative morphology analysis of live blood platelets using scanning ion conductance and robotic dark-field microscopy. Platelets, 2016, 27, 541-546.	1.1	16
74	Array detector for the atomic force microscope. Applied Physics Letters, 2000, 76, 3644-3646.	1.5	15
75	The influence of Pyk2 on the mechanical properties in fibroblasts. Biochemical and Biophysical Research Communications, 2010, 393, 694-697.	1.0	14
76	Bacterial interactions with proteins and cells relevant to the development of life-threatening endocarditis studied by use of a quartz-crystal microbalance. Analytical and Bioanalytical Chemistry, 2014, 406, 3395-3406.	1.9	14
77	Time-Lapse Single-Biomolecule Atomic Force Microscopy Investigation on Modified Graphite in Solution. Langmuir, 2017, 33, 10027-10034.	1.6	14
78	Macro-SICM: A Scanning Ion Conductance Microscope for Large-Range Imaging. Analytical Chemistry, 2018, 90, 5048-5054.	3.2	13
79	In Situ Single-Molecule AFM Investigation of Surface-Induced Fibrinogen Unfolding on Graphite. Langmuir, 2019, 35, 9732-9739.	1.6	13
80	Spatial correlation of cell stiffness and traction forces in cancer cells measured with combined SICM and TFM. RSC Advances, 2021, 11, 13951-13956.	1.7	13
81	ACKR3 regulates platelet activation and ischemia-reperfusion tissue injury. Nature Communications, 2022, 13, 1823.	5.8	13
82	The effect of finite sample thickness in scanning ion conductance microscopy stiffness measurements. Applied Physics Letters, 2020, 117, .	1.5	11
83	Lipoconjugates for the Noncovalent Generation of Microarrays in Biochemical and Cellular Assays. ChemBioChem, 2002, 3, 1183-1191.	1.3	10
84	Magnetic force gradient mapping. Journal of Applied Physics, 2003, 94, 6525-6532.	1.1	9
85	Nanotemplate-directed DNA segmental thermal motion. RSC Advances, 2016, 6, 79584-79592.	1.7	8
86	Control of size of PbI2 nanocrystals using Langmuirâ€“Blodgett films of n-octadecyl succinic acid. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2001, 181, 115-121.	2.3	7
87	Note: Artificial neural networks for the automated analysis of force map data in atomic force microscopy. Review of Scientific Instruments, 2014, 85, 056104.	0.6	7
88	Scanning Ion Conductance Microscopy. Nanoscience and Technology, 2006, , 91-119.	1.5	6
89	Mechanics of migrating platelets investigated with scanning ion conductance microscopy. Nanoscale, 2022, 14, 8192-8199.	2.8	6
90	Comprehensive Analysis of Human Cytomegalovirus- and HIV-Mediated Plasma Membrane Remodeling in Macrophages. MBio, 2021, 12, e0177021.	1.8	5

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91	Effect of Oxidized LDL on Platelet Shape, Spreading, and Migration Investigated with Deep Learning Platelet Morphometry. Cells, 2021, 10, 2932.	1.8	5
92	High-Speed Atomic Force Microscopy of Biomolecules in Motion. , 0, , 221-247.		4
93	Skewness of the height distribution in cell topography images is a measure of cell shape. Japanese Journal of Applied Physics, 2018, 57, 08NB02.	0.8	4
94	Evidence of (anti)metamorphic properties of modified graphitic surfaces obtained in real time at a single-molecule level. Colloids and Surfaces B: Biointerfaces, 2020, 193, 111077.	2.5	4
95	Characterization of GPVI- or GPVI-CD39-Coated Nanoparticles and Their Impact on In Vitro Thrombus Formation. International Journal of Molecular Sciences, 2022, 23, 11.	1.8	4
96	Atomic force microscopy crosslinks interdisciplinary eye research. Medical Hypothesis, Discovery, and Innovation in Ophthalmology, 2015, 4, 1-4.	0.4	3
97	Low-Noise Methods for Optical Measurements of Cantilever Deflections. Nanoscience and Technology, 2007, , 51-74.	1.5	2
98	Combined Highâ€Speed Atomic Force and Optical Microscopy Shows That Viscoelastic Properties of Melanoma Cancer Cells Change during the Cell Cycle. Advanced Materials Technologies, 0, , 2101000.	3.0	1
99	Shear-Force-Controlled Scanning Ion Conductance Microscopy. , 0, , 197-212.		0
100	Scanning Ion Conductance Microscopy. Imaging & Microscopy, 2007, 9, 30-32.	0.1	0
101	Scanning Ion Conductance Microscopy. , 2010, , 433-460.		0
102	Intraoperative model based identification of tissue properties based on multimodal and multiscale measurements. Proceedings of SPIE, 2015, , .	0.8	0
103	Intraoperative model based identification of tissue properties using a multimodal and multiscale elastographic measurement approach. , 2015, , .		0
104	Scanning Ion Conductance Microscopy. , 2010, , 295-323.		0