James K Gimzewski

List of Publications by Year
in descending order

104 papers	9,236 citations	61984 43 h-index	38395 95 g-index
105 all docs	105 docs citations	105 times ranked	11653 citing authors

#	Article	IF	Citations
1	Nanomechanical analysis of cells from cancer patients. Nature Nanotechnology, 2007, 2, 780-783.	31.5	1,650
2	Short-term plasticity and long-term potentiation mimicked in single inorganic synapses. Nature Materials, 2011, 10, 591-595.	27.5	1,480
3	Inelastic tunneling excitation of tip-induced plasmon modes on noble-metal surfaces. Physical Review Letters, 1991, 67, 3796-3799.	7.8	424
4	AFM-based analysis of human metastatic cancer cells. Nanotechnology, 2008, 19, 384003.	2.6	329
5	Local Nanomechanical Motion of the Cell Wall of Saccharomyces cerevisiae. Science, 2004, 305, 1147-1150.	12.6	328
6	Structural-Mechanical Characterization of Nanoparticle Exosomes in Human Saliva, Using Correlative AFM, FESEM, and Force Spectroscopy. ACS Nano, 2010, 4, 1921-1926.	14.6	312
7	Learning Abilities Achieved by a Single Solidâ€State Atomic Switch. Advanced Materials, 2010, 22, 1831-1834.	21.0	274
8	On-Demand Nanodevice with Electrical and Neuromorphic Multifunction Realized by Local Ion Migration. ACS Nano, 2012, 6, 9515-9521.	14.6	186
9	Emergent Criticality in Complex Turing Bâ€Type Atomic Switch Networks. Advanced Materials, 2012, 24, 286-293.	21.0	182
10	A theoretical and experimental study of neuromorphic atomic switch networks for reservoir computing. Nanotechnology, 2013, 24, 384004.	2.6	178
11	Continuity of Graphene on Polycrystalline Copper. Nano Letters, 2011, 11, 251-256.	9.1	175
12	Quantitative Nanostructural and Single-Molecule Force Spectroscopy Biomolecular Analysis of Human-Saliva-Derived Exosomes. Langmuir, 2011, 27, 14394-14400.	3.5	174
13	Thermodynamically Controlled Self-Assembly of Covalent Nanoarchitectures in Aqueous Solution. ACS Nano, 2011, 5, 3923-3929.	14.6	162
14	Controlling the Synaptic Plasticity of a Cu₂S Gapâ€Type Atomic Switch. Advanced Functional Materials, 2012, 22, 3606-3613.	14.9	160
15	Atomic-Scale Characterization of Graphene Grown on Copper (100) Single Crystals. Journal of the American Chemical Society, 2011, 133, 12536-12543.	13.7	154
16	Neuromorphic Atomic Switch Networks. PLoS ONE, 2012, 7, e42772.	2.5	146
17	Glucose inhibits cardiac muscle maturation through nucleotide biosynthesis. ELife, 2017, 6, .	6.0	142
18	Synaptic plasticity and memory functions achieved in a WO_{3â^’x}-based nanoionics device by using the principle of atomic switch operation. Nanotechnology, 2013, 24, 384003.	2.6	117

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19	Photon emission in scanning tunneling microscopy: Interpretation of photon maps of metallic systems. Physical Review B, 1993, 48, 4746-4754.	3.2	115
20	Nanoscale visualization and characterization of Myxococcus xanthus cells with atomic force microscopy. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 6484-6489.	7.1	112
21	Emergent dynamics of neuromorphic nanowire networks. Scientific Reports, 2019, 9, 14920.	3.3	93
22	Correlative nanomechanical profiling with super-resolution F-actin imaging reveals novel insights into mechanisms of cisplatin resistance in ovarian cancer cells. Nanomedicine: Nanotechnology, Biology, and Medicine, 2012, 8, 757-766.	3.3	92
23	Atomic Force Microscopy Reveals Drebrin Induced Remodeling of F-Actin with Subnanometer Resolution. Nano Letters, 2011, 11, 825-827.	9.1	87
24	Applicability of AFM in cancer detection. Nature Nanotechnology, 2009, 4, 72-73.	31.5	86
25	A breakthrough therapy for dentin hypersensitivity: how dental products containing 8% arginine and calcium carbonate work to deliver effective relief of sensitive teeth. Journal of Clinical Dentistry, 2009, 20, 23-31.	0.9	83
26	Nanomechanical properties of glucans and associated cell-surface adhesion of Streptococcus mutans probed by atomic force microscopy under in situ conditions. Microbiology (United Kingdom), 2007, 153, 3124-3132.	1.8	77
27	Graphene MEMS: AFM Probe Performance Improvement. ACS Nano, 2013, 7, 4164-4170.	14.6	74
28	Green tea extract selectively targets nanomechanics of live metastatic cancer cells. Nanotechnology, 2011, 22, 215101.	2.6	70
29	The role of Rho GTPase in cell stiffness and cisplatin resistance in ovarian cancer cells. Integrative Biology (United Kingdom), 2014, 6, 611-617.	1.3	68
30	Sensory and short-term memory formations observed in a Ag2S gap-type atomic switch. Applied Physics Letters, 2011, 99, .	3.3	63
31	Functional characterization of cell-wall-associated protein WapA in Streptococcus mutans. Microbiology (United Kingdom), 2006, 152, 2395-2404.	1.8	61
32	Rigid microenvironments promote cardiac differentiation of mouse and human embryonic stem cells. Science and Technology of Advanced Materials, 2013, 14, 025003.	6.1	60
33	Nanoscale characterization of effect of l-arginine on Streptococcus mutans biofilm adhesion by atomic force microscopy. Microbiology (United Kingdom), 2014, 160, 1466-1473.	1.8	59
34	Distinct contributions of microtubule subtypes to cell membrane shape and stability. Nanomedicine: Nanotechnology, Biology, and Medicine, 2007, 3, 43-52.	3.3	58
35	Complementary TEM and AFM Force Spectroscopy to Characterize the Nanomechanical Properties of Nanoparticle Chain Aggregates. Nano Letters, 2004, 4, 2287-2292.	9.1	57
36	DNA Builds and Strengthens the Extracellular Matrix in Myxococcus xanthus Biofilms by Interacting with Exopolysaccharides. PLoS ONE, 2012, 7, e51905.	2.5	57

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37	Live Cell Interferometry Reveals Cellular Dynamism During Force Propagation. ACS Nano, 2008, 2, 841-846.	14.6	56
38	Nanofilaments on glioblastoma exosomes revealed by peak force microscopy. Journal of the Royal Society Interface, 2014, 11, 20131150.	3.4	56
39	Rapid, Massively Parallel Single-Cell Drug Response Measurements via Live Cell Interferometry. Biophysical Journal, 2011, 101, 1025-1031.	0.5	55
40	Time dependence of the frequency and amplitude of the local nanomechanical motion of yeast. Nanomedicine: Nanotechnology, Biology, and Medicine, 2005, 1, 178-183.	3.3	53
41	Nanoarchitectonic atomic switch networks for unconventional computing. Japanese Journal of Applied Physics, 2016, 55, 1102B2.	1.5	47
42	Atomic force microscopy study of the structureâ€“function relationships of the biofilm-forming bacteriumStreptococcus mutans. Nanotechnology, 2006, 17, S1-S7.	2.6	46
43	Nanocharacterization in Dentistry. International Journal of Molecular Sciences, 2010, 11, 2523-2545.	4.1	46
44	Morphological Transitions from Dendrites to Nanowires in the Electroless Deposition of Silver. Crystal Growth and Design, 2013, 13, 465-469.	3.0	46
45	Memristive operations demonstrated by gap-type atomic switches. Applied Physics A: Materials Science and Processing, 2011, 102, 811-815.	2.3	43
46	Spoken Digit Classification by In-Materio Reservoir Computing With Neuromorphic Atomic Switch Networks. Frontiers in Nanotechnology, 2021, 3, .	4.8	43
47	Isochromat spectroscopy of photons emitted from metal surfaces in an STM. Annalen Der Physik, 1993, 505, 133-140.	2.4	42
48	In Situ Mechanical Interferometry of Matrigel Films. Langmuir, 2009, 25, 36-39.	3.5	42
49	The role of proximity plasmon modes on noble metal surfaces in scanning tunneling microscopy. Surface Science, 1992, 269-270, 556-559.	1.9	36
50	Molecular Cooperativity of Drebrin1-300 Binding and Structural Remodeling of F-Actin. Biophysical Journal, 2012, 103, 275-283.	0.5	36
51	Two dimensional electrophysiological characterization of human pluripotent stem cell-derived cardiomyocyte system. Scientific Reports, 2017, 7, 43210.	3.3	35
52	High throughput cell nanomechanics with mechanical imaging interferometry. Nanotechnology, 2008, 19, 235101.	2.6	31
53	In Situ STM Investigation of Aromatic Poly(azomethine) Arrays Constructed by â€œOn-Siteâ€• Equilibrium Polymerization. Langmuir, 2012, 28, 13844-13851.	3.5	31
54	Enhanced photon emission from the STM: a general property of metal surfaces. Ultramicroscopy, 1992, 42-44, 355-359.	1.9	29

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55	DNA nanomapping using CRISPR-Cas9 as a programmable nanoparticle. Nature Communications, 2017, 8, 1665.	12.8	27
56	Atomic switch networks as complex adaptive systems. Japanese Journal of Applied Physics, 2018, 57, 03ED02.	1.5	27
57	Evaluation of bacteria-induced enamel demineralization using optical profilometry. Dental Materials, 2009, 25, 1517-1526.	3.5	26
58	Multistate resistive switching in silver nanoparticle films. Science and Technology of Advanced Materials, 2015, 16, 045004.	6.1	26
59	Self-organized and highly ordered domain structures within swarms ofMyxococcus xanthus. Cytoskeleton, 2006, 63, 141-148.	4.4	22
60	Emergence of Inâ€Materio Intelligence from an Incidental Structure of a Singleâ€Walled Carbon Nanotubeâ€“Porphyrin Polyoxometalate Random Network. Advanced Intelligent Systems, 2022, 4, .	6.1	22
61	Self-organized atomic switch networks. Japanese Journal of Applied Physics, 2014, 53, 01AA02.	1.5	20
62	Single molecule transcription profiling with AFM. Nanotechnology, 2007, 18, 044032.	2.6	17
63	Cancer cell mechanobiology: a new frontier for cancer research. Journal of the National Cancer Center, 2022, 2, 10-17.	7.4	17
64	Dynamic mechanical oscillations during metamorphosis of the monarch butterfly. Journal of the Royal Society Interface, 2009, 6, 29-37.	3.4	16
65	Thermodynamic Self-Assembly of Two-Dimensional Ï€-Conjugated Metalâ€“Porphyrin Covalent Organic Frameworks by â€œOn-Siteâ€•Equilibrium Polymerization. Journal of Nanoscience and Nanotechnology, 2014, 14, 2211-2216.	0.9	16
66	Nanoscale neuromorphic networks and criticality: a perspective. Journal of Physics Complexity, 2021, 2, 042001.	2.2	16
67	Localized Nanoscopic Surface Measurements of Nickel-Modified Mica for Single-Molecule DNA Sequence Sampling. ACS Applied Materials & Interfaces, 2010, 2, 3249-3256.	8.0	15
68	Image Analysis and Length Estimation of Biomolecules Using AFM. IEEE Transactions on Information Technology in Biomedicine, 2012, 16, 1200-1207.	3.2	14
69	Thin film interference in the optomechanical response of micromechanical silicon cantilevers. Applied Physics Letters, 2006, 89, 241916.	3.3	13
70	Positional selectivity of reversible azomethine condensation reactions at solid/liquid interfaces leading to supramolecule formation. Journal of Electroanalytical Chemistry, 2014, 716, 145-149.	3.8	13
71	Nanocytology as a potential biomarker for cancer. Biomarkers in Medicine, 2017, 11, 213-216.	1.4	13
72	Atomic force microscopy correlates antimetastatic potentials of HepG2 cell line with its redox/energy status: effects of curcumin and Khaya senegalensis. Journal of Integrative Medicine, 2017, 15, 214-230.	3.1	13

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73	Self-organization and Emergence of Dynamical Structures in Neuromorphic Atomic Switch Networks. , 2014, , 173-209.		12
74	Piezoelectric needle sensor reveals mechanical heterogeneity in human thyroid tissue lesions. Scientific Reports, 2019, 9, 9282.	3.3	12
75	Mechanical Interferometry of Nanoscale Motion and Local Mechanical Properties of Living Zebrafish Embryos. ACS Nano, 2009, 3, 2090-2094.	14.6	11
76	Fine Needle Elastography (FNE) device for biomechanically determining local variations of tissue mechanical properties. Journal of Biomechanics, 2015, 48, 81-88.	2.1	10
77	Single Cell Mechanotype and Associated Molecular Changes in Urothelial Cell Transformation and Progression. Frontiers in Cell and Developmental Biology, 2020, 8, 601376.	3.7	10
78	Atomic Force Microscopic Detection Enabling Multiplexed Low-Cycle-Number Quantitative Polymerase Chain Reaction for Biomarker Assays. Analytical Chemistry, 2014, 86, 6180-6183.	6.5	9
79	Nanostructured Self-Assembly of Inverted Formin 2 (INF2) and F-Actinâ€“INF2 Complexes Revealed by Atomic Force Microscopy. Langmuir, 2014, 30, 7533-7539.	3.5	9
80	High-Speed Atomic Force Microscopy Revealing Contamination in DNA Purification Systems. Analytical Chemistry, 2016, 88, 2527-2532.	6.5	9
81	Identification of a Human Airway Epithelial Cell Subpopulation with Altered Biophysical, Molecular, and Metastatic Properties. Cancer Prevention Research, 2017, 10, 514-524.	1.5	9
82	Inhibition of TRPV1 Channel Activity in Human CD4+ T Cells by Nanodiamond and Nanoplatinum Liquid, DPV576. Nanomaterials, 2018, 8, 770.	4.1	9
83	Nanoscale Extracellular Vesicles Carry the Mechanobiology Signatures of Breast Cancer Cells. ACS Applied Nano Materials, 2021, 4, 9876-9885.	5.0	9
84	The Quest for Characterizing Exosomes: Circulating Nano-Sized Vesicles. Journal of Nanomedicine & Nanotechnology, 2012, 03, .	1.1	8
85	Correlative nanoscale imaging of actin filaments and their complexes. Nanoscale, 2013, 5, 5692.	5.6	7
86	Biophysical and morphological effects of nanodiamond/nanoplatinum solution (DPV576) on metastatic murine breast cancer cellsin vitro. Nanotechnology, 2014, 25, 465101.	2.6	7
87	Benchtop Fabrication of Memristive Atomic Switch Networks. Journal of Nanoscience and Nanotechnology, 2014, 14, 2792-2798.	0.9	7
88	Application of AFM to the Nanomechanics of Cancer. MRS Advances, 2016, 1, 1817-1827.	0.9	7
89	Nanomechanical properties of piezoresistive cantilevers: Theory and experiment. Journal of Applied Physics, 2008, 104, 103527.	2.5	5
90	Amplification of Conformational Effects via tert-Butyl Groups: Hexa-tert-butyl Decacyclene on Cu(100) at Room Temperature. Langmuir, 2013, 29, 7309-7317.	3.5	5

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91	Observations of image contrast and dimerization of decacyclene by low temperature scanning tunneling microscopy. Journal of Chemical Physics, 2007, 127, 174703.	3.0	4
92	Monomolecular covalent honeycomb nanosheets produced by surface-mediated polycondensation between 1,3,5-triamino benzene and benzene-1,3,5-tricarbox aldehyde on Au(111). Nanoscale Advances, 2020, 2, 3202-3208.	4.6	4
93	Self-organization and Emergence ofÂDynamical Structures inÂNeuromorphic Atomic SwitchÂNetworks. , 2019, , 391-427.		4
94	Self-Organization and Emergence of Dynamic Systems. , 2016, , 163-180.		3
95	Marina crystal minerals (MCM) activate human dendritic cells to induce CD4+ and CD8+ T cell responses in vitro. International Journal of Immunopathology and Pharmacology, 2018, 32, 205873841879776.	2.1	3
96	Potential role of MRN-100, an iron-based compound, in upregulating production of cytokine IL-10 in human dendritic cells to promote an anti-inflammatory response in vitro. International Journal of Immunopathology and Pharmacology, 2019, 33, 205873841984493.	2.1	3
97	Exosomes: Nanoscale Packages Contain the Health-state [Status Quo] of the Cells that Secrete them. Journal of Nanomedicine & Nanotechnology, 2015, 06, .	1.1	2
98	Pacemaker translocations and power laws in 2D stem cell-derived cardiomyocyte cultures. PLoS ONE, 2022, 17, e0263976.	2.5	2
99	Atomic force microscope observation of branching in single transcript molecules derived from human cardiac muscle. Nanotechnology, 2008, 19, 384021.	2.6	1
100	Immunological Biosensors. , 2013, , 203-207.		1
101	Programmable Fading Memory in Atomic Switch Systems for Error Checking Applications. Natural Computing Series, 2021, , 273-303.	2.2	1
102	Artificial Synapses Realized by Atomic Switch Technology. Advances in Atom and Single Molecule Machines, 2020, , 175-199.	0.0	1
103	Cardio PyMEA: A user-friendly, open-source Python application for cardiomyocyte microelectrode array analysis. PLoS ONE, 2022, 17, e0266647.	2.5	1
104	Self-Organization and Emergence of Dynamic Systems. , 2015, , 1-14.		0