Richard Superfine

List of Publications by Year
in descending order

142	11,720	36271 51	28275 105
papers	citations	h-index	g-index

148	148	148	13240
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Bending and buckling of carbon nanotubes under large strain. Nature, 1997, 389, 582-584.	13.7	1,399
2	Vibrational spectroscopy of water at the vapor/water interface. Physical Review Letters, 1993, 70, 2313-2316.	2.9	926
3	Monolayers in Three Dimensions: NMR, SAXS, Thermal, and Electron Hopping Studies of Alkanethiol Stabilized Gold Clusters. Journal of the American Chemical Society, 1995, 117, 12537-12548.	6.6	831
4	Mechanical Stiffness Grades Metastatic Potential in Patient Tumor Cells and in Cancer Cell Lines. Cancer Research, 2011, 71, 5075-5080.	0.4	597
5	Isolated nuclei adapt to force and reveal a mechanotransduction pathway in the nucleus. Nature Cell Biology, 2014, 16, 376-381.	4.6	495
6	Nanometre-scale rolling and sliding of carbon nanotubes. Nature, 1999, 397, 236-238.	13.7	446
7	The Rho GEFs LARG and GEF-H1 regulate the mechanical response to force on integrins. Nature Cell Biology, 2011, 13, 722-727.	4.6	324
8	Magnetically Actuated Nanorod Arrays as Biomimetic Cilia. Nano Letters, 2007, 7, 1428-1434.	4.5	261
9	Fibrin Fibers Have Extraordinary Extensibility and Elasticity. Science, 2006, 313, 634-634.	6.0	230
10	DNA-functionalized single-walled carbon nanotubes. Nanotechnology, 2002, 13, 601-604.	1.3	221
11	A physical linkage between cystic fibrosis airway surface dehydration and Pseudomonas aeruginosa biofilms. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 18131-18136.	3.3	213
12	Biomimetic cilia arrays generate simultaneous pumping and mixing regimes. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 15670-15675.	3.3	212
13	Controlled manipulation of molecular samples with the nanoManipulator. IEEE/ASME Transactions on Mechatronics, 2000, 5, 189-198.	3.7	203
14	A Comparison of the Mechanical and Structural Properties of Fibrin Fibers with Other Protein Fibers. Cell Biochemistry and Biophysics, 2007, 49, 165-181.	0.9	194
15	Vibrational spectroscopy of a silane monolayer at air/solid and liquid/solid interfaces using sum-frequency generation. Chemical Physics Letters, 1988, 144, 1-5.	1.2	189
16	Nonlinear optical studies of the pure liquid/vapor interface: Vibrational spectra and polar ordering. Physical Review Letters, 1991, 66, 1066-1069.	2.9	182
17	Localized Tensional Forces on PECAM-1 Elicit a Global Mechanotransduction Response via the Integrin-RhoA Pathway. Current Biology, 2012, 22, 2087-2094.	1.8	153
18	Resonant Oscillators with Carbon-Nanotube Torsion Springs. Physical Review Letters, 2004, 93, 146101.	2.9	150

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19	Phase measurement for surface infraredâ€“visible sum-frequency generation. Optics Letters, 1990, 15, 1276.	1.7	139
20	Vinculin phosphorylation differentially regulates mechanotransduction at cellâ€“cell and cellâ€“matrix adhesions. Journal of Cell Biology, 2014, 205, 251-263.	2.3	135
21	In situresistance measurements of strained carbon nanotubes. Applied Physics Letters, 1999, 75, 2936-2938.	1.5	134
22	HIF1Î± and HIF2Î± independently activate SRC to promote melanoma metastases. Journal of Clinical Investigation, 2013, 123, 2078-2093.	3.9	132
23	Gearlike rolling motion mediated by commensurate contact:â€ƒCarbon nanotubes on HOPG. Physical Review B, 2000, 62, R10665-R10667.	1.1	121
24	Photothermal modulation for oscillating mode atomic force microscopy in solution. Applied Physics Letters, 1998, 72, 1911-1913.	1.5	120
25	Torsional Response and Stiffening of Individual Multiwalled Carbon Nanotubes. Physical Review Letters, 2002, 89, 255502.	2.9	118
26	Controlled placement of an individual carbon nanotube onto a microelectromechanical structure. Applied Physics Letters, 2002, 80, 2574-2576.	1.5	115
27	Observation of the Triplet Excited State of a Conjugated-Polymer Crystal. Physical Review Letters, 1986, 56, 1850-1853.	2.9	114
28	Manipulation of individual viruses: friction and mechanical properties. Biophysical Journal, 1997, 72, 1396-1403.	0.2	103
29	Tunable Resistance of a Carbon Nanotube-Graphite Interface. , 2000, 290, 1742-1744.		102
30	Two-Dimensional Manipulation and Orientation of Actinâ^'Myosin Systems with Dielectrophoresis. Nano Letters, 2003, 3, 431-437.	4.5	100
31	Learning at the nanoscale: The impact of students' use of remote microscopy on concepts of viruses, scale, and microscopy. Journal of Research in Science Teaching, 2003, 40, 303-322.	2.0	97
32	Nuclear Deformation Causes DNA Damage by Increasing Replication Stress. Current Biology, 2021, 31, 753-765.e6.	1.8	97
33	Haemodynamic and extracellular matrix cues regulate the mechanical phenotype and stiffness of aortic endothelial cells. Nature Communications, 2014, 5, 3984.	5.8	95
34	Regulation of hepatic stem/progenitor phenotype by microenvironment stiffness in hydrogel models of the human liver stem cell niche. Biomaterials, 2011, 32, 7389-7402.	5.7	94
35	Experimental Measurement of Single-Wall Carbon Nanotube Torsional Properties. Physical Review Letters, 2006, 96, 256102.	2.9	86
36	Visualization and Mechanical Manipulations of Individual Fibrin Fibers Suggest that Fiber Cross Section Has Fractal Dimension 1.3. Biophysical Journal, 2004, 87, 4226-4236.	0.2	83

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37	Fabrication of nanometer-scale mechanical devices incorporating individual multiwalled carbon nanotubes as torsional springs. Applied Physics Letters, 2003, 82, 805-807.	1.5	82
38	Thermally actuated untethered impact-driven locomotive microdevices. Applied Physics Letters, 2006, 89, 203512.	1.5	81
39	A highly tunable silicone-based magnetic elastomer with nanoscale homogeneity. Journal of Magnetism and Magnetic Materials, 2012, 324, 501-507.	1.0	81
40	Force Generation and Dynamics of Individual Cilia under External Loading. Biophysical Journal, 2010, 98, 57-66.	0.2	80
41	Experimental determination of the sign of molecular dipole moment derivatives: an infraredâ€"visible sum frequency generation absolute phase measurement study. Chemical Physics Letters, 1990, 172, 303-306.	1.2	76
42	Electromechanical response of single-walled carbon nanotubes to torsional strain in a self-contained device. Nature Nanotechnology, 2007, 2, 413-416.	15.6	76
43	Correlating nuclear morphology and external force with combined atomic force microscopy and light sheet imaging separates roles of chromatin and lamin A/C in nuclear mechanics. Molecular Biology of the Cell, 2020, 31, 1788-1801.	0.9	73
44	Multifunctional Shape and Size Specific Magneto-Polymer Composite Particles. Nano Letters, 2010, 10, 1113-1119.	4.5	67
45	Stiffening of Individual Fibrin Fibers Equitably Distributes Strain and Strengthens Networks. Biophysical Journal, 2010, 98, 1632-1640.	0.2	64
46	Evidence that Î±C Region Is Origin of Low Modulus, High Extensibility, and Strain Stiffening in Fibrin Fibers. Biophysical Journal, 2010, 99, 3038-3047.	0.2	64
47	Surface vibrational spectroscopy of molecular adsorbates on metals and semiconductors by infrared-visible sum-frequency generation. Surface Science, 1988, 200, L445-L450.	0.8	58
48	Development and Characterization of Novel Empty Adenovirus Capsids and Their Impact on Cellular Gene Expression. Journal of Virology, 2003, 77, 12881-12885.	1.5	58
49	Investigation and modification of molecular structures with the nanoManipulator. Journal of Molecular Graphics and Modelling, 1999, 17, 187-197.	1.3	55
50	Mechanics and Friction at the Nanometer Scale. Journal of Nanoparticle Research, 2000, 2, 237-248.	0.8	55
51	Visualization of individual carbon nanotubes with fluorescence microscopy using conventional fluorophores. Applied Physics Letters, 2003, 83, 1219-1221.	1.5	55
52	The Vinculin C-terminal Hairpin Mediates F-actin Bundle Formation, Focal Adhesion, and Cell Mechanical Properties. Journal of Biological Chemistry, 2011, 286, 45103-45115.	1.6	55
53	The RhoA Guanine Nucleotide Exchange Factor, LARG, Mediates ICAM-1â€"Dependent Mechanotransduction in Endothelial Cells To Stimulate Transendothelial Migration. Journal of Immunology, 2014, 192, 3390-3398.	0.4	54
54	TGF-Î² regulates LARG and GEF-H1 during EMT to affect stiffening response to force and cell invasion. Molecular Biology of the Cell, 2014, 25, 3528-3540.	0.9	53

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55	Nonlinear spectroscopic study of coadsorbed liquid-crystal and surfactant monolayers: Conformation and interaction. Physical Review A, 1990, 42, 3660-3663.	1.0	49
56	Identification of an Actin Binding Surface on Vinculin that Mediates Mechanical Cell and Focal Adhesion Properties. Structure, 2014, 22, 697-706.	1.6	49
57	Physical Determinants of Fibrinolysis in Single Fibrin Fibers. PLoS ONE, 2015, 10, e0116350.	1.1	48
58	Mechanical Properties and Gene Expression of Chondrocytes on Micropatterned Substrates Following Dedifferentiation in Monolayer. Cellular and Molecular Bioengineering, 2009, 2, 395-404.	1.0	47
59	Microtubule Acetylation Is Required for Mechanosensation in Drosophila. Cell Reports, 2018, 25, 1051-1065.e6.	2.9	47
60	Title is missing!. Tribology Letters, 2000, 9, 73-76.	1.2	43
61	DNA relaxation dynamics as a probe for the intracellular environment. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 9250-9255.	3.3	42
62	Study of diacetylene monomer and polymer monolayers using second- and third-harmonic generation. Journal of the Optical Society of America B: Optical Physics, 1988, 5, 668.	0.9	41
63	Quantitative manipulation of DNA and viruses with the nanomanipulator scanning force microscope. Surface and Interface Analysis, 1999, 27, 437-443.	0.8	40
64	Simple and efficient method for carbon nanotube attachment to scanning probes and other substrates. Applied Physics Letters, 2003, 82, 2506-2508.	1.5	38
65	Length of tandem repeats in fibrinâ€™s Î±C region correlates with fiber extensibility. Journal of Thrombosis and Haemostasis, 2008, 6, 1991-1993.	1.9	35
66	Submillisecond Elastic Recoil Reveals Molecular Origins of Fibrin Fiber Mechanics. Biophysical Journal, 2013, 104, 2671-2680.	0.2	35
67	Vertical Light Sheet Enhanced Side-View Imaging for AFM Cell Mechanics Studies. Scientific Reports, 2018, 8, 1504.	1.6	34
68	Remote atomic force microscopy of microscopic organisms: Technological innovations for hands-on science with middle and high school students. Science Education, 2004, 88, 55-71.	1.8	33
69	Interactions of Small Molecules and Au Nanoparticles with Solubilized Single-Wall Carbon Nanotubes. Journal of Physical Chemistry B, 2003, 107, 3726-3732.	1.2	32
70	Highly controllable near-surface swimming of magnetic Janus nanorods: application to payload capture and manipulation. Journal Physics D: Applied Physics, 2011, 44, 125001.	1.3	32
71	The design of DNA self-assembled computing circuitry. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2004, 12, 1214-1220.	2.1	29
72	A Self-Sensing Nanomechanical Resonator Built on a Single-Walled Carbon Nanotube. Nano Letters, 2008, 8, 3746-3749.	4.5	29

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73	Ultrathin self-assembled fibrin sheets. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 19438-19443.	3.3	29
74	Analysis of the interaction between adeno-associated virus and heparan sulfate using atomic force microscopy. Glycobiology, 2004, 14, 969-977.	1.3	28
75	High accuracy FIONAâ€“AFM hybrid imaging. Ultramicroscopy, 2011, 111, 350-355.	0.8	28
76	Quantitative assessment of the upper airway in infants and children with subglottic stenosis. Laryngoscope, 2016, 126, 1225-1231.	1.1	25
77	Volumetric nasal cavity analysis in children with unilateral and bilateral cleft lip and palate. Laryngoscope, 2016, 126, 1475-1480.	1.1	22
78	Micro-elastometry on whole blood clots using actuated surface-attached posts (ASAPs). Lab on A Chip, 2015, 15, 1385-1393.	3.1	21
79	Nanoparticle Diffusion Measures Bulk Clot Permeability. Biophysical Journal, 2011, 101, 943-950.	0.2	20
80	Comparison of endoscopic versus 3D CT derived airway measurements. Laryngoscope, 2013, 123, 2136-2141.	1.1	20
81	Phosphorylation at Y1065 in Vinculin Mediates Actin Bundling, Cell Spreading, and Mechanical Responses to Force. Biochemistry, 2014, 53, 5526-5536.	1.2	19
82	Vinculin and metavinculin exhibit distinct effects on focal adhesion properties, cell migration, and mechanotransduction. PLoS ONE, 2019, 14, e0221962.	1.1	19
83	Size-Uniform 200 nm Particles: Fabrication and Application to Magnetofection. Journal of Biomedical Nanotechnology, 2009, 5, 182-191.	0.5	18
84	Single particle tracking reveals biphasic transport during nanorod magnetophoresis through extracellular matrix. Soft Matter, 2014, 10, 4118-4125.	1.2	17
85	PAK2 links cell survival to mechanotransduction and metabolism. Journal of Cell Biology, 2019, 218, 1958-1971.	2.3	17
86	A survey of physical methods for studying nuclear mechanics and mechanobiology. APL Bioengineering, 2021, 5, 041508.	3.3	17
87	Cylinders vs. Spheres: Biofluid Shear Thinning in Driven Nanoparticle Transport. Annals of Biomedical Engineering, 2010, 38, 3311-3322.	1.3	16
88	Chapter 16 Magnetic Manipulation for Force Measurements in Cell Biology. Methods in Cell Biology, 2008, 89, 433-450.	0.5	15
89	Induction of ciliary orientation by matrix patterning and characterization of mucociliary transport. Biophysical Journal, 2021, 120, 1387-1395.	0.2	15
90	VIEW-MOD: a versatile illumination engine with a modular optical design for fluorescence microscopy. Optics Express, 2019, 27, 19950.	1.7	15

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91	Homodyne surface second-harmonic generation. Optics Letters, 1995, 20, 545.	1.7	14
92	Nonlinear signatures in active microbead rheology of entangled polymer solutions. Journal of Rheology, 2013, 57, 1247-1264.	1.3	14
93	Title is missing!. Biomedical Microdevices, 2001, 3, 9-18.	1.4	13
94	Microfluidic viscometry using magnetically actuated micropost arrays. PLoS ONE, 2018, 13, e0200345.	1.1	13
95	MAGNETIC FORCE MICROMANIPULATION SYSTEMS FOR THE BIOLOGICAL SCIENCES. Nano, 2006, 01, 191-205.	0.5	12
96	Statistical atlas construction via weighted functional boxplots. Medical Image Analysis, 2014, 18, 684-698.	7.0	12
97	In situimaging of polymer melt spreading with a high-temperature atomic force microscope. Applied Physics Letters, 1997, 71, 3513-3515.	1.5	11
98	Simultaneous atomic force microscopy measurement of topography and contact resistance of metal films and carbon nanotubes. Review of Scientific Instruments, 2003, 74, 3653-3655.	0.6	11
99	Epicyclic orbits in a viscous fluid about a precessing rod: Theory and experiments at the micro- and macro-scales. Physical Review E, 2007, 76, 016313.	0.8	10
100	Analysis of driven nanorod transport through a biopolymer matrix. Journal of Magnetism and Magnetic Materials, 2015, 380, 295-298.	1.0	10
101	Combined Selective Plane Illumination Microscopy and FRAP Maps Intranuclear Diffusion of NLS-GFP. Biophysical Journal, 2020, 119, 514-524.	0.2	10
102	Probing the Mechanisms for Surface-Induced Alignment of Liquid Crystals. Molecular Crystals and Liquid Crystals, 1991, 207, 77-85.	0.7	9
103	Highly responsive core-shell microactuator arrays for use in viscous and viscoelastic fluids. Journal of Micromechanics and Microengineering, 2015, 25, 025004.	1.5	9
104	Agnostic Particle Tracking for Three-Dimensional Motion of Cellular Granules and Membrane-Tethered Bead Dynamics. Biophysical Journal, 2008, 94, 2374-2384.	0.2	8
105	Pediatric Sleep-Related Breathing Disorders: Advances in imaging and computational modeling.. IEEE Pulse, 2014, 5, 33-39.	0.1	8
106	The Virtual Pediatric Airways Workbench. Studies in Health Technology and Informatics, 2016, 220, 295-300.	0.2	8
107	Properties of rareâ€earth metal superlattice grown by molecularâ€beam epitaxy (abstract). Journal of Applied Physics, 1985, 57, 3672-3672.	1.1	7
108	A Model for a Spreading and Melting Droplet on a Heated Substrate. SIAM Journal on Applied Mathematics, 2001, 61, 1502-1525.	0.8	7

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109	Stress communication and filtering of viscoelastic layers in oscillatory shear. Journal of Non-Newtonian Fluid Mechanics, 2009, 156, 112-120.	1.0	7
110	A pediatric airway atlas and its application in subglottic stenosis. , 2013, 2013, 1206-1209.		7
111	Buffer drains and mucus is transported upward in a tilted mucus clearance assay. American Journal of Physiology - Lung Cellular and Molecular Physiology, 2018, 315, L910-L918.	1.3	7
112	Hands-on tools for nanotechnology. Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena, 2001, 19, 2717.	1.6	6
113	Magnetomotive optical coherence elastography for relating lung structure and function in cystic fibrosis. Proceedings of SPIE, 2010, 7554, 755420.	0.8	6
114	Multi-view second-harmonic generation imaging of mouse tail tendon via reflective micro-prisms. Optics Letters, 2015, 40, 3201.	1.7	6
115	An Automated High-throughput Array Microscope for Cancer Cell Mechanics. Scientific Reports, 2016, 6, 27371.	1.6	5
116	A high throughput array microscope for the mechanical characterization of biomaterials. Review of Scientific Instruments, 2015, 86, 023711.	0.6	4
117	Touching In Biological Systems: A 3D Force Microscope. Microscopy and Microanalysis, 2002, 8, 174-175.	0.2	2
118	Analysis-preserving video microscopy compression via correlation and mathematical morphology. Microscopy Research and Technique, 2015, 78, 1055-1061.	1.2	2
119	A multi-dimensional evaluation of the nanomanipulator, a scientific sollaboration system. ACM SIGGROUP Bulletin, 1999, 20, 46-50.	0.4	2
120	Electrodeposited Au-CdTe-Au Nanowires: Solution-based Control Over Cd/Te Stoichiometry. ECS Transactions, 2009, 19, 99-109.	0.3	1
121	Viewing Nuclear Deformation with Sideways Microscopy. Biophysical Journal, 2014, 106, 42a-43a.	0.2	1
122	Effects of Opsonin Density and type on the Phagocytosis of Beads. Biophysical Journal, 2017, 112, 90a-91a.	0.2	1
123	Force Spectroscopy of Phagocytosis with High Frame Rate 3D Light Sheet Imaging. Biophysical Journal, 2018, 114, 530a.	0.2	1
124	Visualization and Natural Control Systems for Microscopy. , 2005, , 893-918.		1
125	Lithographically Defined Micropost Arrays for Programmable Actuation and Interfacial Hydrodynamics. ACS Applied Polymer Materials, 0, , .	2.0	1
126	Scanning Force Microscopy and Nanomangulation: Studies of Dna and Proteins Involved in Dna Repair. Microscopy and Microanalysis, 1999, 5, 1004-1005.	0.2	0

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127	AFM Manipulation Of Small Fibrin Networks. Biophysical Journal, 2009, 96, 38a.	0.2	0
128	AFM Mechanical Studies Of A Novel Form Of The Biopolymer Fibrin: Elastomeric Sheets. Biophysical Journal, 2009, 96, 39a.	0.2	0
129	Undriven Bead Diffusion Through Extracellular Matrix. Biophysical Journal, 2009, 96, 42a.	0.2	0
130	Fibrin Fibers Exhibit Two Distinct Temporal Regimes of Recoil Dynamics. Biophysical Journal, 2011, 100, 224a.	0.2	0
131	Investigating the Role of the Alpha-C domain in Fibrin Fiber Mechanics. Biophysical Journal, 2011, 100, 481a.	0.2	0
132	Blood Clot Mechanical Properties measured with Arrays of Magnetically Actuated Core-Shell Microrods. Biophysical Journal, 2013, 104, 546a.	0.2	0
133	Fabrication of Surface-Attached Magnetic Post Arrays for Biosensing Applications. Biophysical Journal, 2013, 104, 528a.	0.2	0
134	Microtubule Doublet Curvature and its Role in Cilia Actuation. Biophysical Journal, 2013, 104, 150a.	0.2	0
135	Array Microscope for High Throughput Stiffness Characterization of Cancer Biology. Biophysical Journal, 2014, 106, 619a.	0.2	0
136	Analysisâ€aware microscopy video compression. Microscopy Research and Technique, 2018, 81, 693-703.	1.2	0
137	Nuclear Deformation with Combined AFM and 3D Multi-Color Live-Cell Line Bessel Sheet Imaging. Biophysical Journal, 2019, 116, 24a.	0.2	0
138	Forces of Phagocytosis with Two-Channel Live Cell Bessel Light Sheet 3D Imaging. Biophysical Journal, 2019, 116, 417a.	0.2	0
139	A Side-view on Nuclear Mechanics: Combined Atomic Force Microscopy and Light Sheet Microscopy Inform Chromatin's Role in Regulating Nuclear Morphology. Biophysical Journal, 2020, 118, 285a.	0.2	0
140	Combined AFM and Vertical Light Sheet Microscopy to Correlate Actin Accumulation to Engulfment Forces During Phagocytosis. Biophysical Journal, 2020, 118, 33a.	0.2	0
141	A MODEL FOR A SPREADING AND MELTING DROPLET ON A HEATED SUBSTRATE. , 2002, , 236-236.		0
142	High Throughput Screening of Fibrin Clots: Transport and Mechanics Measured by Microbeads. Blood, 2008, 112, 4095-4095.	0.6	0