Nathan J Sniadecki

List of Publications by Year
in descending order

66 papers	5,139 citations	126708 33 h-index	123241 61 g-index
74 all docs	74 docs citations	74 times ranked	7274 citing authors

#	Article	IF	Citations
1	Emergent patterns of growth controlled by multicellular form and mechanics. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 11594-11599.	3.3	760
2	Mechanical tugging force regulates the size of cellâ€“cell junctions. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 9944-9949.	3.3	633
3	Tri-iodo-l-thyronine promotes the maturation of human cardiomyocytes-derived from induced pluripotent stem cells. Journal of Molecular and Cellular Cardiology, 2014, 72, 296-304.	0.9	357
4	Magnetic microposts as an approach to apply forces to living cells. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 14553-14558.	3.3	314
5	Nanotechnology for Cellâ€“Substrate Interactions. Annals of Biomedical Engineering, 2006, 34, 59-74.	1.3	296
6	Let-7 family of microRNA is required for maturation and adult-like metabolism in stem cell-derived cardiomyocytes. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, E2785-94.	3.3	223
7	Fatty Acids Enhance the Maturation of Cardiomyocytes Derived from Human Pluripotent Stem Cells. Stem Cell Reports, 2019, 13, 657-668.	2.3	187
8	Decoupling Substrate Stiffness, Spread Area, and Micropost Density: A Close Spatial Relationship between Traction Forces and Focal Adhesions. Biophysical Journal, 2012, 103, 640-648.	0.2	176
9	Review on Cell Mechanics: Experimental and Modeling Approaches. Applied Mechanics Reviews, 2013, 65, .	4.5	164
10	Measuring the Contractile Forces of Human Induced Pluripotent Stem Cell-Derived Cardiomyocytes With Arrays of Microposts. Journal of Biomechanical Engineering, 2014, 136, 051005.	0.6	136
11	Afterload promotes maturation of human induced pluripotent stem cell derived cardiomyocytes in engineered heart tissues. Journal of Molecular and Cellular Cardiology, 2018, 118, 147-158.	0.9	127
12	Substrate Stiffness Increases Twitch Power of Neonatal Cardiomyocytes in Correlation with Changes in Myofibril Structure and Intracellular Calcium. Biophysical Journal, 2011, 101, 2455-2464.	0.2	122
13	Microfabricated Silicone Elastomeric Post Arrays for Measuring Traction Forces of Adherent Cells. Methods in Cell Biology, 2007, 83, 313-328.	0.5	87
14	Platelet retraction force measurements using flexible post force sensors. Lab on A Chip, 2010, 10, 991.	3.1	82
15	LAMP-2B regulates human cardiomyocyte function by mediating autophagosomeâ€“lysosome fusion. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 556-565.	3.3	78
16	TFPa/HADHA is required for fatty acid beta-oxidation and cardiolipin re-modeling in human cardiomyocytes. Nature Communications, 2019, 10, 4671.	5.8	77
17	Micropost arrays for measuring stem cell-derived cardiomyocyte contractility. Methods, 2016, 94, 43-50.	1.9	76
18	SARS-CoV-2 Infects Human Pluripotent Stem Cell-Derived Cardiomyocytes, Impairing Electrical and Mechanical Function. Stem Cell Reports, 2021, 16, 478-492.	2.3	75

#	Article	IF	Citations
19	The desmoplakinâ€“intermediate filament linkage regulates cell mechanics. Molecular Biology of the Cell, 2017, 28, 3156-3164.	0.9	70
20	Flow mechanotransduction regulates traction forces, intercellular forces, and adherens junctions. American Journal of Physiology - Heart and Circulatory Physiology, 2012, 302, H2220-H2229.	1.5	69
21	Contractile forces in platelet aggregates under microfluidic shear gradients reflect platelet inhibition and bleeding risk. Nature Communications, 2019, 10, 1204.	5.8	69
22	Magnetic microposts for mechanical stimulation of biological cells: Fabrication, characterization, and analysis. Review of Scientific Instruments, 2008, 79, 044302.	0.6	61
23	Tunable electroconductive decellularized extracellular matrix hydrogels for engineering human cardiac microphysiological systems. Biomaterials, 2021, 272, 120764.	5.7	60
24	Glycoprotein Ib-IX-V Complex Transmits Cytoskeletal Forces That Enhance Platelet Adhesion. Biophysical Journal, 2016, 111, 601-608.	0.2	56
25	Simple replica micromolding of biocompatible styrenic elastomers. Lab on A Chip, 2013, 13, 2773.	3.1	54
26	Cronos Titin Is Expressed in Human Cardiomyocytes and Necessary for Normal Sarcomere Function. Circulation, 2019, 140, 1647-1660.	1.6	50
27	Real-Time Force and Frequency Analysis of Engineered Human Heart Tissue Derived from Induced Pluripotent Stem Cells Using Magnetic Sensing. Tissue Engineering - Part C: Methods, 2016, 22, 932-940.	1.1	47
28	Chromatin compartment dynamics in a haploinsufficient model of cardiac laminopathy. Journal of Cell Biology, 2019, 218, 2919-2944.	2.3	46
29	Mechanical Forces in Endothelial Cells during Firm Adhesion and Early Transmigration of Human Monocytes. Cellular and Molecular Bioengineering, 2010, 3, 50-59.	1.0	45
30	Decoupling diffusional from dimensional control of signaling in 3D culture reveals a role for myosin in tubulogenesis. Journal of Cell Science, 2010, 123, 2877-2883.	1.2	45
31	Induced Pressure Pumping in Polymer Microchannels via Field-Effect Flow Control. Analytical Chemistry, 2004, 76, 1942-1947.	3.2	41
32	Shear force at the cell-matrix interface: enhanced analysis for microfabricated post array detectors. Mcb Mechanics and Chemistry of Biosystems, 2005, 2, 1-16.	0.3	37
33	Thermal fracture of oxidized polydimethylsiloxane during soft lithography of nanopost arrays. Journal of Micromechanics and Microengineering, 2011, 21, 054013.	1.5	34
34	A microfluidic approach for hemoglobin detection in whole blood. AIP Advances, 2017, 7, .	0.6	31
35	Mechanobiology of Platelets: Techniques to Study the Role of Fluid Flow and Platelet Retraction Forces at the Micro- and Nano-Scale. International Journal of Molecular Sciences, 2011, 12, 9009-9030.	1.8	28
36	Nonmuscle Myosin IIA Regulates Platelet Contractile Forces Through Rho Kinase and Myosin Light-Chain Kinase. Journal of Biomechanical Engineering, 2016, 138, .	0.6	27

#	Article	IF	Citations
37	Substrate Stiffness, Cell Anisotropy, and Cellâ€“Cell Contact Contribute to Enhanced Structural and Calcium Handling Properties of Human Embryonic Stem Cell-Derived Cardiomyocytes. ACS Biomaterials Science and Engineering, 2019, 5, 3876-3888.	2.6	26
38	Cell Mechanics of Craniosynostosis. ACS Biomaterials Science and Engineering, 2017, 3, 2733-2743.	2.6	24
39	Gain-of-function cardiomyopathic mutations in RBM20 rewire splicing regulation and re-distribute ribonucleoprotein granules within processing bodies. Nature Communications, 2021, 12, 6324.	5.8	23
40	Simulations of the contractile cycle in cell migration using a bio-chemicalâ€“mechanical model. Computer Methods in Biomechanics and Biomedical Engineering, 2011, 14, 459-468.	0.9	20
41	Hyaluronan-CD44 interactions mediate contractility and migration in periodontal ligament cells. Cell Adhesion and Migration, 2019, 13, 139-151.	1.1	18
42	Activation of the IGF1 Pathway Mediates Changes in Cellular Contractility and Motility in Single-Suture Craniosynostosis. Journal of Cell Science, 2016, 129, 483-91.	1.2	16
43	A Rainbow Reporter Tracks Single Cells and Reveals Heterogeneous Cellular Dynamics among Pluripotent Stem Cells and Their Differentiated Derivatives. Stem Cell Reports, 2020, 15, 226-241.	2.3	16
44	Storage temperature determines platelet GPVI levels and function in mice and humans. Blood Advances, 2021, 5, 3839-3849.	2.5	16
45	Effect of Silanization Film Thickness in Soft Lithography of Nanoscale Features. Journal of Nanotechnology in Engineering and Medicine, 2011, 2, .	0.8	14
46	In silico CDM model sheds light on force transmission in cell from focal adhesions to nucleus. Journal of Biomechanics, 2016, 49, 2625-2634.	0.9	10
47	Engineering Heart Morphogenesis. Trends in Biotechnology, 2020, 38, 835-845.	4.9	10
48	A Change of Heart: Human Cardiac Tissue Engineering as a Platform for Drug Development. Current Cardiology Reports, 2022, 24, 473-486.	1.3	10
49	Micropatterning on Micropost Arrays. Methods in Cell Biology, 2014, 121, 61-73.	0.5	9
50	(De)form and Function: Measuring Cellular Forces with Deformable Materials and Deformable Structures. Advanced Healthcare Materials, 2020, 9, 1901454.	3.9	9
51	Engrafted Human Induced Pluripotent Stem Cellâ€“Derived Cardiomyocytes Undergo Clonal Expansion In Vivo. Circulation, 2021, 143, 1635-1638.	1.6	9
52	Black dots: High-yield traction force microscopy reveals structural factors contributing to platelet forces. Acta Biomaterialia, 2023, 163, 302-311.	4.1	8
53	Clot-On-A-Chip: A Microfluidic Device To Study Platelet Aggregation and Contractility Under Shear. Blood, 2013, 122, 2363-2363.	0.6	7
54	Magnetically-actuated microposts stimulate axon growth. Biophysical Journal, 2022, 121, 374-382.	0.2	7

#	Article	IF	Citations
55	Spatial and temporal coordination of traction forces in one-dimensional cell migration. Cell Adhesion and Migration, 2016, 10, 529-539.	1.1	6
56	The Giardia ventrolateral flange is a lamellar membrane protrusion that supports attachment. PLoS Pathogens, 2022, 18, e1010496.	2.1	5
57	Engineered Heart Tissues for Contractile, Structural, and Transcriptional Assessment of Human Pluripotent Stem Cell-Derived Cardiomyocytes in a Three-Dimensional, Auxotonic Environment. Methods in Molecular Biology, 2022, , 87-97.	0.4	5
58	Disc and Actin Associated Protein 1 influences attachment in the intestinal parasite Giardia lamblia. PLoS Pathogens, 2022, 18, e1010433.	2.1	4
59	The consequence of substrates of large-scale rigidity on actin network tension in adherent cells. Computer Methods in Biomechanics and Biomedical Engineering, 2019, 22, 1073-1082.	0.9	3
60	Engineered Microenvironments to Investigate Cellular Behavior. , 2006, 2006, 2362-5.		2
61	A Magnetic Post Approach for Measuring the Viscoelasticity of Biomaterials. Journal of Microelectromechanical Systems, 2016, 25, 153-159.	1.7	1
62	Black Dots: Microcontact Printed Reference-Free Traction Force Microscopy. Biophysical Journal, 2021, 120, 363a-364a.	0.2	0
63	Reconstitution Of The Microvascular Thrombopoietic Niche Reveals Cross-Talk Between Megakaryocytes and The Microvasculature. Blood, 2013, 122, 2456-2456.	0.6	0
64	Platelet Cytoskeletal Force Transmission Through The GPIb-IX-V Complex. Blood, 2013, 122, 197-197.	0.6	0
65	Platelet Storage Temperature Determines Recovery of GPVI-Function In Vivo. Blood, 2020, 136, 39-39.	0.6	0
66	Engineered Microenvironments to Investigate Cellular Behavior. Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2006, , .	0.5	0