

Jianping Fu

List of Publications by Citations

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131
papers

7,257
citations

44
h-index

83
g-index

152
ext. papers

8,557
ext. citations

10.5
avg, IF

6.18
L-index

#	Paper	IF	Citations
131	Mechanical regulation of cell function with geometrically modulated elastomeric substrates. <i>Nature Methods</i> , 2010 , 7, 733-6	21.6	804
130	Forcing stem cells to behave: a biophysical perspective of the cellular microenvironment. <i>Annual Review of Biophysics</i> , 2012 , 41, 519-42	21.1	319
129	Cell shape and substrate rigidity both regulate cell stiffness. <i>Biophysical Journal</i> , 2011 , 100, L25-7	2.9	298
128	Nanotopography influences adhesion, spreading, and self-renewal of human embryonic stem cells. <i>ACS Nano</i> , 2012 , 6, 4094-103	16.7	287
127	A patterned anisotropic nanofluidic sieving structure for continuous-flow separation of DNA and proteins. <i>Nature Nanotechnology</i> , 2007 , 2, 121-8	28.7	271
126	Molecular sieving using nanofilters: past, present and future. <i>Lab on A Chip</i> , 2008 , 8, 23-33	7.2	227
125	Multiplex serum cytokine immunoassay using nanoplasmonic biosensor microarrays. <i>ACS Nano</i> , 2015 , 9, 4173-81	16.7	201
124	Nanoroughened surfaces for efficient capture of circulating tumor cells without using capture antibodies. <i>ACS Nano</i> , 2013 , 7, 566-75	16.7	194
123	Hippo/YAP-mediated rigidity-dependent motor neuron differentiation of human pluripotent stem cells. <i>Nature Materials</i> , 2014 , 13, 599-604	27	191
122	Assaying stem cell mechanobiology on microfabricated elastomeric substrates with geometrically modulated rigidity. <i>Nature Protocols</i> , 2011 , 6, 187-213	18.8	190
121	How vinculin regulates force transmission. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013 , 110, 9788-93	11.5	175
120	Controlled modelling of human epiblast and amnion development using stem cells. <i>Nature</i> , 2019 , 573, 421-425	50.4	169
119	Biocompatible PEG-Chitosan@Carbon Dots Hybrid Nanogels for Two-Photon Fluorescence Imaging, Near-Infrared Light/pH Dual-Responsive Drug Carrier, and Synergistic Therapy. <i>Advanced Functional Materials</i> , 2015 , 25, 5537-5547	15.6	164
118	Nanotopographical Surfaces for Stem Cell Fate Control: Engineering Mechanobiology from the Bottom. <i>Nano Today</i> , 2014 , 9, 759-784	17.9	136
117	A pluripotent stem cell-based model for post-implantation human amniotic sac development. <i>Nature Communications</i> , 2017 , 8, 208	17.4	129
116	Self-organized amniogenesis by human pluripotent stem cells in a biomimetic implantation-like niche. <i>Nature Materials</i> , 2017 , 16, 419-425	27	124
115	Integrated micro/nanoengineered functional biomaterials for cell mechanics and mechanobiology: a materials perspective. <i>Advanced Materials</i> , 2014 , 26, 1494-533	24	109

114	Microfluidic blood cell sorting: now and beyond. <i>Small</i> , 2014 , 10, 1687-703	11	107
113	Photolithographic surface micromachining of polydimethylsiloxane (PDMS). <i>Lab on A Chip</i> , 2012 , 12, 391-5	7.2	107
112	A Nanofilter Array Chip for Fast Gel-Free Biomolecule Separation. <i>Applied Physics Letters</i> , 2005 , 87, 2639-41	9.4	107
111	Mechanics-guided embryonic patterning of neuroectoderm tissue from human pluripotent stem cells. <i>Nature Materials</i> , 2018 , 17, 633-641	27	107
110	Molecular sieving in periodic free-energy landscapes created by patterned nanofilter arrays. <i>Physical Review Letters</i> , 2006 , 97, 018103	7.4	103
109	Continuous-flow microfluidic blood cell sorting for unprocessed whole blood using surface-micromachined microfiltration membranes. <i>Lab on A Chip</i> , 2014 , 14, 2565-75	7.2	96
108	Fluorescent porous carbon nanocapsules for two-photon imaging, NIR/pH dual-responsive drug carrier, and photothermal therapy. <i>Biomaterials</i> , 2015 , 53, 117-26	15.6	95
107	Adhesion strength-based, label-free isolation of human pluripotent stem cells. <i>Nature Methods</i> , 2013 , 10, 438-44	21.6	93
106	Mechanics regulates fate decisions of human embryonic stem cells. <i>PLoS ONE</i> , 2012 , 7, e37178	3.7	92
105	On human pluripotent stem cell control: The rise of 3D bioengineering and mechanobiology. <i>Biomaterials</i> , 2015 , 52, 26-43	15.6	90
104	A silicone-based stretchable micropost array membrane for monitoring live-cell subcellular cytoskeletal response. <i>Lab on A Chip</i> , 2012 , 12, 731-40	7.2	80
103	Ultrasensitive ELISA using enzyme-loaded nanospherical brushes as labels. <i>Analytical Chemistry</i> , 2014 , 86, 9367-71	7.8	78
102	Integrated nanoplasmonic sensing for cellular functional immunoanalysis using human blood. <i>ACS Nano</i> , 2014 , 8, 2667-76	16.7	76
101	Simulation of the contractile response of cells on an array of micro-posts. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2009 , 367, 3477-97	3	74
100	Elastomeric microposts integrated into microfluidics for flow-mediated endothelial mechanotransduction analysis. <i>Lab on A Chip</i> , 2012 , 12, 1865-73	7.2	70
99	Artificial molecular sieves and filters: a new paradigm for biomolecule separation. <i>Trends in Biotechnology</i> , 2008 , 26, 311-20	15.1	70
98	Acoustic tweezing cytometry for live-cell subcellular modulation of intracellular cytoskeleton contractility. <i>Scientific Reports</i> , 2013 , 3, 2176	4.9	63
97	Synergistic regulation of cell function by matrix rigidity and adhesive pattern. <i>Biomaterials</i> , 2011 , 32, 9584-93	15.6	63

96	Lumen Formation Is an Intrinsic Property of Isolated Human Pluripotent Stem Cells. <i>Stem Cell Reports</i> , 2015 , 5, 954-962	8	62
95	Mechanosensitive subcellular rheostasis drives emergent single-cell mechanical homeostasis. <i>Nature Materials</i> , 2016 , 15, 961-967	27	57
94	Microfluidics for cryopreservation. <i>Biotechnology Advances</i> , 2017 , 35, 323-336	17.8	56
93	An integrated microfluidic platform for in situ cellular cytokine secretion immunophenotyping. <i>Lab on A Chip</i> , 2012 , 12, 4093-101	7.2	55
92	Uniaxial cell stretching device for live-cell imaging of mechanosensitive cellular functions. <i>Review of Scientific Instruments</i> , 2013 , 84, 114304	1.7	49
91	Live-cell subcellular measurement of cell stiffness using a microengineered stretchable micropost array membrane. <i>Integrative Biology (United Kingdom)</i> , 2012 , 4, 1289-98	3.7	46
90	Effects of substrate stiffness and actomyosin contractility on coupling between force transmission and vinculin-paxillin recruitment at single focal adhesions. <i>Molecular Biology of the Cell</i> , 2017 , 28, 1901-1911	3.5	46
89	Human Primordial Germ Cells Are Specified from Lineage-Primed Progenitors. <i>Cell Reports</i> , 2019 , 29, 4568-4582.e5	10.6	44
88	AC Electroosmosis-Enhanced Nanoplasmodfluidic Detection of Ultralow-Concentration Cytokine. <i>Nano Letters</i> , 2017 , 17, 2374-2380	11.5	40
87	Rapid, automated, parallel quantitative immunoassays using highly integrated microfluidics and AlphaLISA. <i>Scientific Reports</i> , 2015 , 5, 11339	4.9	40
86	Surface-micromachined microfiltration membranes for efficient isolation and functional immunophenotyping of subpopulations of immune cells. <i>Advanced Healthcare Materials</i> , 2013 , 2, 965-975	10.1	38
85	Age-Associated Increase in Skin Fibroblast-Derived Prostaglandin E2 Contributes to Reduced Collagen Levels in Elderly Human Skin. <i>Journal of Investigative Dermatology</i> , 2015 , 135, 2181-2188	4.3	37
84	Substrates with engineered step changes in rigidity induce traction force polarity and durotaxis. <i>Cellular and Molecular Bioengineering</i> , 2014 , 7, 26-34	3.9	36
83	Angiogenesis in Liquid Tumors: An In Vitro Assay for Leukemic-Cell-Induced Bone Marrow Angiogenesis. <i>Advanced Healthcare Materials</i> , 2016 , 5, 1014-24	10.1	36
82	Dorsal-ventral patterned neural cyst from human pluripotent stem cells in a neurogenic niche. <i>Science Advances</i> , 2019 , 5, eaax5933	14.3	36
81	Global architecture of the F-actin cytoskeleton regulates cell shape-dependent endothelial mechanotransduction. <i>Integrative Biology (United Kingdom)</i> , 2014 , 6, 300-11	3.7	35
80	Acoustic tweezing cytometry enhances osteogenesis of human mesenchymal stem cells through cytoskeletal contractility and YAP activation. <i>Biomaterials</i> , 2017 , 134, 22-30	15.6	34
79	Stem-cell-based embryo models for fundamental research and translation. <i>Nature Materials</i> , 2021 , 20, 132-144	27	34

78	Multiparametric Biomechanical and Biochemical Phenotypic Profiling of Single Cancer Cells Using an Elasticity Microcytometer. <i>Small</i> , 2016 , 12, 2300-11	11	31
77	Multiplexed Nanoplasmonic Temporal Profiling of T-Cell Response under Immunomodulatory Agent Exposure. <i>ACS Sensors</i> , 2016 , 1, 941-948	9.2	29
76	Supersoft lithography: candy-based fabrication of soft silicone microstructures. <i>Lab on A Chip</i> , 2015 , 15, 3760-5	7.2	28
75	Mechanical Tension Promotes Formation of Gastrulation-like Nodes and Patterns Mesoderm Specification in Human Embryonic Stem Cells. <i>Developmental Cell</i> , 2020 , 55, 679-694.e11	10.2	28
74	Desktop aligner for fabrication of multilayer microfluidic devices. <i>Review of Scientific Instruments</i> , 2015 , 86, 075008	1.7	27
73	Nanotopography regulates motor neuron differentiation of human pluripotent stem cells. <i>Nanoscale</i> , 2018 , 10, 3556-3565	7.7	26
72	Continuous-flow bioseparation using microfabricated anisotropic nanofluidic sieving structures. <i>Nature Protocols</i> , 2009 , 4, 1681-98	18.8	26
71	Centrifugal microfluidics for sorting immune cells from whole blood. <i>Sensors and Actuators B: Chemical</i> , 2017 , 245, 1050-1061	8.5	25
70	UV-modulated substrate rigidity for multiscale study of mechanoresponsive cellular behaviors. <i>Langmuir</i> , 2012 , 28, 10789-96	4	24
69	Mechanobiology: a new frontier for human pluripotent stem cells. <i>Integrative Biology (United Kingdom)</i> , 2013 , 5, 450-7	3.7	23
68	In silico experimentation of glioma microenvironment development and anti-tumor therapy. <i>PLoS Computational Biology</i> , 2012 , 8, e1002355	5	23
67	Emerging microfluidic tools for functional cellular immunophenotyping: a new potential paradigm for immune status characterization. <i>Frontiers in Oncology</i> , 2013 , 3, 98	5.3	22
66	Microfabricated nanotopological surfaces for study of adhesion-dependent cell mechanosensitivity. <i>Small</i> , 2013 , 9, 81-9	11	21
65	An apicosome initiates self-organizing morphogenesis of human pluripotent stem cells. <i>Journal of Cell Biology</i> , 2017 , 216, 3981-3990	7.3	20
64	Patterning Cell and Tissue Function. <i>Cellular and Molecular Bioengineering</i> , 2008 , 1, 15-23	3.9	20
63	Atomic force microscopy indentation and inverse analysis for non-linear viscoelastic identification of breast cancer cells. <i>Mathematical Biosciences</i> , 2016 , 277, 77-88	3.9	20
62	Modulation of Micro RNA Expression and Osteoblast Differentiation by Nanotopography. <i>International Journal of Oral and Maxillofacial Implants</i> , 2018 , 33, 269-280	2.8	20
61	Two-bubble acoustic tweezing cytometry for biomechanical probing and stimulation of cells. <i>Biophysical Journal</i> , 2015 , 108, 32-42	2.9	19

60	Encoding through the host-guest structure: construction of multiplexed fluorescent beads. <i>Chemical Communications</i> , 2014 , 50, 14041-4	5.8	18
59	Rapid quantification of disease-marker proteins using continuous-flow immunoseparation in a nanosieve fluidic device. <i>Analytical Chemistry</i> , 2009 , 81, 7067-74	7.8	18
58	Nanoroughened adhesion-based capture of circulating tumor cells with heterogeneous expression and metastatic characteristics. <i>BMC Cancer</i> , 2016 , 16, 614	4.8	18
57	Emerging microengineered tools for functional analysis and phenotyping of blood cells. <i>Trends in Biotechnology</i> , 2014 , 32, 586-594	15.1	17
56	A Miniaturized Hemoretractometer for Blood Clot Retraction Testing. <i>Small</i> , 2016 , 12, 3926-34	11	16
55	Acoustic Tweezing Cytometry Induces Rapid Initiation of Human Embryonic Stem Cell Differentiation. <i>Scientific Reports</i> , 2018 , 8, 12977	4.9	16
54	Microfluidic-based high-throughput optical trapping of nanoparticles. <i>Lab on A Chip</i> , 2017 , 17, 2125-2134	7.2	15
53	Tracking the tumor invasion front using long-term fluidic tumoroid culture. <i>Scientific Reports</i> , 2017 , 7, 10784	4.9	15
52	Human embryo research, stem cell-derived embryo models and in vitro gametogenesis: Considerations leading to the revised ISSCR guidelines. <i>Stem Cell Reports</i> , 2021 , 16, 1416-1424	8	15
51	Notch signaling in regulating angiogenesis in a 3D biomimetic environment. <i>Lab on A Chip</i> , 2017 , 17, 1948-1959	7.4	14
50	Magneto-thermal heating facilitates the cryogenic recovery of stem cell-laden alginate-FeO nanocomposite hydrogels. <i>Biomaterials Science</i> , 2018 , 6, 3139-3151	7.4	14
49	Biophysical Phenotyping and Modulation of ALDH+ Inflammatory Breast Cancer Stem-Like Cells. <i>Small</i> , 2019 , 15, e1802891	11	12
48	Mechanotransduction-Induced Reversible Phenotypic Switching in Prostate Cancer Cells. <i>Biophysical Journal</i> , 2017 , 112, 1236-1245	2.9	11
47	Acoustic Actuation of Integrin-Bound Microbubbles for Mechanical Phenotyping during Differentiation and Morphogenesis of Human Embryonic Stem Cells. <i>Small</i> , 2018 , 14, e1803137	11	11
46	Microengineered human amniotic ectoderm tissue array for high-content developmental phenotyping. <i>Biomaterials</i> , 2019 , 216, 119244	15.6	10
45	Multiplexed Luminescence Oxygen Channeling Immunoassay Based on Dual-Functional Barcodes with a Host-Guest Structure: A Facile and Robust Suspension Array Platform. <i>Small</i> , 2020 , 16, e1907521	11	10
44	A systems mechanobiology model to predict cardiac reprogramming outcomes on different biomaterials. <i>Biomaterials</i> , 2018 , 181, 280-292	15.6	10
43	Tuning the surface properties of hydrogel at the nanoscale with focused ion irradiation. <i>Soft Matter</i> , 2014 , 10, 8448-56	3.6	10

42	Microengineered synthetic cellular microenvironment for stem cells. <i>Wiley Interdisciplinary Reviews: Nanomedicine and Nanobiotechnology</i> , 2012 , 4, 414-27	9.2	10
41	Force-FAK signaling coupling at individual focal adhesions coordinates mechanosensing and microtissue repair. <i>Nature Communications</i> , 2021 , 12, 2359	17.4	10
40	Controlled Tubular Unit Formation from Collagen Film for Modular Tissue Engineering. <i>ACS Biomaterials Science and Engineering</i> , 2017 , 3, 2860-2868	5.5	9
39	Decreasing effective nanofluidic filter size by modulating electrical double layers: separation enhancement in microfabricated nanofluidic filters. <i>Electrophoresis</i> , 2008 , 29, 4646-51	3.6	9
38	Amnion signals are essential for mesoderm formation in primates. <i>Nature Communications</i> , 2021 , 12, 5126	17.4	9
37	Improving survival of disassociated human embryonic stem cells by mechanical stimulation using acoustic tweezing cytometry. <i>Biophysical Journal</i> , 2015 , 108, 1315-1317	2.9	8
36	Surface micromachining of polydimethylsiloxane for microfluidics applications. <i>Biomicrofluidics</i> , 2016 , 10, 054114	3.2	8
35	Capillary assisted deposition of carbon nanotube film for strain sensing. <i>Applied Physics Letters</i> , 2017 , 111, 173105	3.4	7
34	Carbon Nanotube Strain Sensor Based Hemoretractometer for Blood Coagulation Testing. <i>ACS Sensors</i> , 2018 , 3, 670-676	9.2	7
33	Spatially resolved cell polarity proteomics of a human epiblast model. <i>Science Advances</i> , 2021 , 7,	14.3	7
32	Reprogrammed iBlastoids contain amnion-like cells but not trophectoderm		7
31	Biophysical phenotypes and determinants of anterior vs. posterior primitive streak cells derived from human pluripotent stem cells. <i>Acta Biomaterialia</i> , 2019 , 86, 125-134	10.8	6
30	Synthetic human embryology: towards a quantitative future. <i>Current Opinion in Genetics and Development</i> , 2020 , 63, 30-35	4.9	5
29	Mass-producible microporous silicon membranes for specific leukocyte subset isolation, immunophenotyping, and personalized immunomodulatory drug screening in vitro. <i>Lab on A Chip</i> , 2019 , 19, 3065-3076	7.2	5
28	Harnessing mechanobiology of human pluripotent stem cells for regenerative medicine. <i>ACS Chemical Neuroscience</i> , 2014 , 5, 621-3	5.7	5
27	Cell Shape and Substrate Rigidity Both Regulate Cell Stiffness. <i>Biophysical Journal</i> , 2011 , 100, 303a	2.9	5
26	Amnion signals are essential for mesoderm formation in primates		5
25	Accelerated Biofluid Filling in Complex Microfluidic Networks by Vacuum-Pressure Accelerated Movement (V-PAM). <i>Small</i> , 2016 , 12, 4521-30	11	4

24	A microfluidics-based stem cell model of early post-implantation human development. <i>Nature Protocols</i> , 2021 , 16, 309-326	18.8	4
23	Single-Crystalline, Nanoporous Gallium Nitride Films With Fine Tuning of Pore Size for Stem Cell Engineering. <i>Journal of Nanotechnology in Engineering and Medicine</i> , 2014 , 5, 0410041-410049		3
22	Protocol for controlled modeling of human epiblast and amnion development using stem cells		3
21	Integrated electroplated heat spreaders for high power semiconductor lasers. <i>Journal of Applied Physics</i> , 2008 , 104, 064907	2.5	2
20	Micro/nanoengineered technologies for human pluripotent stem cells maintenance and differentiation. <i>Nano Today</i> , 2021 , 41, 101310-101310	17.9	2
19	Bioengineered pluripotent stem cell models: new approaches to explore early human embryo development. <i>Current Opinion in Biotechnology</i> , 2020 , 66, 52-58	11.4	2
18	Effect of Cell Spreading on Rosette Formation by Human Pluripotent Stem Cell-Derived Neural Progenitor Cells. <i>Frontiers in Cell and Developmental Biology</i> , 2020 , 8, 588941	5.7	2
17	Acoustic Tweezing Cytometry (ATC) on Dissociated Human Embryonic Stem Cells (HESCs). <i>Biophysical Journal</i> , 2016 , 110, 95a	2.9	2
16	Back-focal-plane interferometric detection of nanoparticles in spatially confined microfluidic channels. <i>Review of Scientific Instruments</i> , 2019 , 90, 023107	1.7	1
15	Modeling of human neurulation using bioengineered pluripotent stem cell culture. <i>Current Opinion in Biomedical Engineering</i> , 2020 , 13, 127-133	4.4	1
14	Nanofluidic molecular filters for efficient protein separation and preconcentration		1
13	Visualization and quantification of dynamic intercellular coupling in human embryonic stem cells using single cell sonoporation. <i>Scientific Reports</i> , 2020 , 10, 18253	4.9	1
12	Generation of fate patterns via intercellular forces		1
11	Branching development of early post-implantation human embryonic-like tissues in 3D stem cell culture. <i>Biomaterials</i> , 2021 , 275, 120898	15.6	1
10	SnapShot: Embryo models. <i>Stem Cell Reports</i> , 2021 , 16, 1142-1142.e1	8	0
9	Engineering multiscale structural orders for high-fidelity embryoids and organoids.. <i>Cell Stem Cell</i> , 2022 , 29, 722-743	18	0
8	Emerging Roles of YAP/TAZ in Mechanobiology 2016 , 83-96		
7	Clot Retraction: A Miniaturized Hemoretractometer for Blood Clot Retraction Testing (Small 29/2016). <i>Small</i> , 2016 , 12, 3925	11	

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5 Microfluidics: Accelerated Biofluid Filling in Complex Microfluidic Networks by Vacuum-Pressure Accelerated Movement (V-PAM) (Small 33/2016). *Small*, **2016**, 12, 4444-4444 11

4 Stretchable micropost array cytometry 32-46

3 Elucidating the behavior of trophoblast derivatives in mouse implantation.. *Developmental Cell*, **2022**, 57, 295-297 10.2

2 Nanofluidic devices for rapid continuous-flow bioseparation. *Methods in Molecular Biology*, **2011**, 790, 127-40 1.4

1 Machine learning-assisted imaging analysis of a human epiblast model. *Integrative Biology (United Kingdom)*, **2021**, 13, 221-229 3.7