Jianping Fu

List of Publications by Year in descending order

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Version: 2024-02-01

141 papers	9,534 citations	41258 49 h-index	40881 93 g-index
152 all docs	152 docs citations	152 times ranked	12680 citing authors

#	Article	IF	Citations
1	Mechanical regulation of cell function with geometrically modulated elastomeric substrates. Nature Methods, 2010, 7, 733-736.	9.0	944
2	Forcing Stem Cells to Behave: A Biophysical Perspective of the Cellular Microenvironment. Annual Review of Biophysics, 2012, 41, 519-542.	4.5	367
3	Cell Shape and Substrate Rigidity Both Regulate Cell Stiffness. Biophysical Journal, 2011, 100, L25-L27.	0.2	364
4	Nanotopography Influences Adhesion, Spreading, and Self-Renewal of Human Embryonic Stem Cells. ACS Nano, 2012, 6, 4094-4103.	7.3	353
5	Controlled modelling of human epiblast and amnion development using stem cells. Nature, 2019, 573, 421-425.	13.7	338
6	A patterned anisotropic nanofluidic sieving structure for continuous-flow separation of DNA and proteins. Nature Nanotechnology, 2007, 2, 121-128.	15.6	306
7	Molecular sieving using nanofilters: Past, present and future. Lab on A Chip, 2008, 8, 23-33.	3.1	268
8	Multiplex Serum Cytokine Immunoassay Using Nanoplasmonic Biosensor Microarrays. ACS Nano, 2015, 9, 4173-4181.	7.3	267
9	Hippo/YAP-mediated rigidity-dependent motor neuron differentiation of human pluripotent stemÂcells. Nature Materials, 2014, 13, 599-604.	13.3	238
10	Assaying stem cell mechanobiology on microfabricated elastomeric substrates with geometrically modulated rigidity. Nature Protocols, 2011, 6, 187-213.	5.5	236
11	Nanoroughened Surfaces for Efficient Capture of Circulating Tumor Cells without Using Capture Antibodies. ACS Nano, 2013, 7, 566-575.	7.3	220
12	Nanotopographical surfaces for stem cell fate control: Engineering mechanobiology from the bottom. Nano Today, 2014, 9, 759-784.	6.2	220
13	How vinculin regulates force transmission. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 9788-9793.	3.3	209
14	A pluripotent stem cell-based model for post-implantation human amniotic sac development. Nature Communications, 2017, 8, 208.	5.8	203
15	Biocompatible PEGâ€Chitosan@Carbon Dots Hybrid Nanogels for Twoâ€Photon Fluorescence Imaging, Nearâ€Infrared Light/pH Dualâ€Responsive Drug Carrier, and Synergistic Therapy. Advanced Functional Materials, 2015, 25, 5537-5547.	7.8	201
16	Self-organized amniogenesis by human pluripotent stem cells in a biomimetic implantation-like niche. Nature Materials, 2017, 16, 419-425.	13.3	189
17	Mechanics-guided embryonic patterning of neuroectoderm tissue from human pluripotent stem cells. Nature Materials, 2018, 17, 633-641.	13.3	174
18	Microfluidic Blood Cell Sorting: Now and Beyond. Small, 2014, 10, 1687-1703.	5.2	134

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19	Photolithographic surface micromachining of polydimethylsiloxane (PDMS). Lab on A Chip, 2012, 12, 391-395.	3.1	131
20	Nanofilter array chip for fast gel-free biomolecule separation. Applied Physics Letters, 2005, 87, 263902.	1.5	121
21	Integrated Micro/Nanoengineered Functional Biomaterials for Cell Mechanics and Mechanobiology: A Materials Perspective. Advanced Materials, 2014, 26, 1494-1533.	11.1	121
22	Continuous-flow microfluidic blood cell sorting for unprocessed whole blood using surface-micromachined microfiltration membranes. Lab on A Chip, 2014, 14, 2565-2575.	3.1	116
23	Human Primordial Germ Cells Are Specified from Lineage-Primed Progenitors. Cell Reports, 2019, 29, 4568-4582.e5.	2.9	114
24	Molecular Sieving in Periodic Free-Energy Landscapes Created by Patterned Nanofilter Arrays. Physical Review Letters, 2006, 97, 018103.	2.9	111
25	Adhesion strengthâ€“based, label-free isolation of human pluripotent stem cells. Nature Methods, 2013, 10, 438-444.	9.0	110
26	On human pluripotent stem cell control: The rise of 3D bioengineering and mechanobiology. Biomaterials, 2015, 52, 26-43.	5.7	105
27	Fluorescent porous carbon nanocapsules for two-photon imaging, NIR/pH dual-responsive drug carrier, and photothermal therapy. Biomaterials, 2015, 53, 117-126.	5.7	105
28	Mechanics Regulates Fate Decisions of Human Embryonic Stem Cells. PLoS ONE, 2012, 7, e37178.	1.1	102
29	Lumen Formation Is an Intrinsic Property of Isolated Human Pluripotent Stem Cells. Stem Cell Reports, 2015, 5, 954-962.	2.3	98
30	Ultrasensitive ELISA Using Enzyme-Loaded Nanospherical Brushes as Labels. Analytical Chemistry, 2014, 86, 9367-9371.	3.2	92
31	A silicone-based stretchable micropost array membrane for monitoring live-cell subcellular cytoskeletal response. Lab on A Chip, 2012, 12, 731-740.	3.1	89
32	Integrated Nanoplasmonic Sensing for Cellular Functional Immunoanalysis Using Human Blood. ACS Nano, 2014, 8, 2667-2676.	7.3	89
33	Stem-cell-based embryo models for fundamental research and translation. Nature Materials, 2021, 20, 132-144.	13.3	86
34	Microfluidics for cryopreservation. Biotechnology Advances, 2017, 35, 323-336.	6.0	84
35	Mechanical Tension Promotes Formation of Gastrulation-like Nodes and Patterns Mesoderm Specification in Human Embryonic Stem Cells. Developmental Cell, 2020, 55, 679-694.e11.	3.1	84
36	Artificial molecular sieves and filters: a new paradigm for biomolecule separation. Trends in Biotechnology, 2008, 26, 311-320.	4.9	80

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37	Simulation of the contractile response of cells on an array of micro-posts. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2009, 367, 3477-3497.	1.6	80
38	Mechanosensitive subcellular rheostasis drives emergent single-cell mechanicalÂhomeostasis. Nature Materials, 2016, 15, 961-967.	13.3	77
39	Elastomeric microposts integrated into microfluidics for flow-mediated endothelial mechanotransduction analysis. Lab on A Chip, 2012, 12, 1865.	3.1	76
40	Synergistic regulation of cell function by matrix rigidity and adhesive pattern. Biomaterials, 2011, 32, 9584-9593.	5.7	75
41	Acoustic tweezing cytometry for live-cell subcellular modulation of intracellular cytoskeleton contractility. Scientific Reports, 2013, 3, 2176.	1.6	75
42	Effects of substrate stiffness and actomyosin contractility on coupling between force transmission and vinculinâ€“paxillin recruitment at single focal adhesions. Molecular Biology of the Cell, 2017, 28, 1901-1911.	0.9	74
43	Debate ethics of embryo models from stem cells. Nature, 2018, 564, 183-185.	13.7	72
44	An integrated microfluidic platform for in situ cellular cytokine secretion immunophenotyping. Lab on A Chip, 2012, 12, 4093.	3.1	60
45	Dorsal-ventral patterned neural cyst from human pluripotent stem cells in a neurogenic niche. Science Advances, 2019, 5, eaax5933.	4.7	59
46	Human embryo research, stem cell-derived embryo models and inÂvitro gametogenesis: Considerations leading to the revised ISSCR guidelines. Stem Cell Reports, 2021, 16, 1416-1424.	2.3	59
47	Amnion signals are essential for mesoderm formation in primates. Nature Communications, 2021, 12, 5126.	5.8	59
48	Uniaxial cell stretching device for live-cell imaging of mechanosensitive cellular functions. Review of Scientific Instruments, 2013, 84, 114304.	0.6	58
49	Acoustic tweezing cytometry enhances osteogenesis of human mesenchymal stem cells through cytoskeletal contractility and YAP activation. Biomaterials, 2017, 134, 22-30.	5.7	57
50	Live-cell subcellular measurement of cell stiffness using a microengineered stretchable micropost array membrane. Integrative Biology (United Kingdom), 2012, 4, 1289.	0.6	56
51	AC Electroosmosis-Enhanced Nanoplasmofluidic Detection of Ultralow-Concentration Cytokine. Nano Letters, 2017, 17, 2374-2380.	4.5	55
52	Age-Associated Increase in Skin Fibroblastâ€“Derived Prostaglandin E 2 Contributes to Reduced Collagen Levels in Elderly Human Skin. Journal of Investigative Dermatology, 2015, 135, 2181-2188.	0.3	51
53	Substrates with Engineered Step Changes in Rigidity Induce Traction Force Polarity and Durotaxis. Cellular and Molecular Bioengineering, 2014, 7, 26-34.	1.0	48
54	Rapid, automated, parallel quantitative immunoassays using highly integrated microfluidics and AlphaLISA. Scientific Reports, 2015, 5, 11339.	1.6	48

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55	Angiogenesis in Liquid Tumors: An In Vitro Assay for Leukemicâ€Cellâ€Induced Bone Marrow Angiogenesis. Advanced Healthcare Materials, 2016, 5, 1014-1024.	3.9	44
56	Surfaceâ€Micromachined Microfiltration Membranes for Efficient Isolation and Functional Immunophenotyping of Subpopulations of Immune Cells. Advanced Healthcare Materials, 2013, 2, 965-975.	3.9	43
57	Global architecture of the F-actin cytoskeleton regulates cell shape-dependent endothelial mechanotransduction. Integrative Biology (United Kingdom), 2014, 6, 300.	0.6	42
58	An apicosome initiates self-organizing morphogenesis of human pluripotent stem cells. Journal of Cell Biology, 2017, 216, 3981-3990.	2.3	41
59	Nanotopography regulates motor neuron differentiation of human pluripotent stem cells. Nanoscale, 2018, 10, 3556-3565.	2.8	38
60	Supersoft lithography: candy-based fabrication of soft silicone microstructures. Lab on A Chip, 2015, 15, 3760-3765.	3.1	37
61	Desktop aligner for fabrication of multilayer microfluidic devices. Review of Scientific Instruments, 2015, 86, 075008.	0.6	37
62	Multiparametric Biomechanical and Biochemical Phenotypic Profiling of Single Cancer Cells Using an Elasticity Microcytometer. Small, 2016, 12, 2300-2311.	5.2	36
63	Multiplexed Nanoplasmonic Temporal Profiling of T-Cell Response under Immunomodulatory Agent Exposure. ACS Sensors, 2016, 1, 941-948.	4.0	35
64	Centrifugal microfluidics for sorting immune cells from whole blood. Sensors and Actuators B: Chemical, 2017, 245, 1050-1061.	4.0	34
65	UV-Modulated Substrate Rigidity for Multiscale Study of Mechanoresponsive Cellular Behaviors. Langmuir, 2012, 28, 10789-10796.	1.6	28
66	Continuous-flow bioseparation using microfabricated anisotropic nanofluidic sieving structures. Nature Protocols, 2009, 4, 1681-1698.	5.5	27
67	Two-Bubble Acoustic Tweezing Cytometry for Biomechanical Probing and Stimulation of Cells. Biophysical Journal, 2015, 108, 32-42.	0.2	27
68	Modulation of Micro RNA Expression and Osteoblast Differentiation by Nanotopography. International Journal of Oral and Maxillofacial Implants, 2018, 33, 269-280.	0.6	27
69	Force-FAK signaling coupling at individual focal adhesions coordinates mechanosensing and microtissue repair. Nature Communications, 2021, 12, 2359.	5.8	27
70	In silico Experimentation of Glioma Microenvironment Development and Anti-tumor Therapy. PLoS Computational Biology, 2012, 8, e1002355.	1.5	26
71	Microfabricated Nanotopological Surfaces for Study of Adhesionâ€Dependent Cell Mechanosensitivity. Small, 2013, 9, 81-89.	5.2	26
72	Emerging Microfluidic Tools for Functional Cellular Immunophenotyping: A New Potential Paradigm for Immune Status Characterization. Frontiers in Oncology, 2013, 3, 98.	1.3	25

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73	Atomic force microscopy indentation and inverse analysis for non-linear viscoelastic identification of breast cancer cells. Mathematical Biosciences, 2016, 277, 77-88.	0.9	25
74	Patterning Cell and Tissue Function. Cellular and Molecular Bioengineering, 2008, 1, 15-23.	1.0	24
75	Mechanobiology: a new frontier for human pluripotent stem cells. Integrative Biology (United) Tj ETQq1 1 0.784314 rgBT /Overlock 10	0.6	24
76	A Miniaturized Hemoretractometer for Blood Clot Retraction Testing. Small, 2016, 12, 3926-3934.	5.2	24
77	Tracking the tumor invasion front using long-term fluidic tumoroid culture. Scientific Reports, 2017, 7, 10784.	1.6	24
78	Nanoroughened adhesion-based capture of circulating tumor cells with heterogeneous expression and metastatic characteristics. BMC Cancer, 2016, 16, 614.	1.1	23
79	Magnetothermal heating facilitates the cryogenic recovery of stem cellâ€“laden alginateâ€“Fe₃O₄ nanocomposite hydrogels. Biomaterials Science, 2018, 6, 3139-3151.	2.6	23
80	Encoding through the hostâ€“guest structure: construction of multiplexed fluorescent beads. Chemical Communications, 2014, 50, 14041-14044.	2.2	22
81	Microfluidic-based high-throughput optical trapping of nanoparticles. Lab on A Chip, 2017, 17, 2125-2134.	3.1	22
82	Microengineered human amniotic ectoderm tissue array for high-content developmental phenotyping. Biomaterials, 2019, 216, 119244.	5.7	22
83	Biophysical Phenotyping and Modulation of ALDH+ Inflammatory Breast Cancer Stemâ€Like Cells. Small, 2019, 15, e1802891.	5.2	21
84	Mechanotransduction-Induced Reversible Phenotypic Switching in Prostate Cancer Cells. Biophysical Journal, 2017, 112, 1236-1245.	0.2	20
85	Acoustic Tweezing Cytometry Induces Rapid Initiation of Human Embryonic Stem Cell Differentiation. Scientific Reports, 2018, 8, 12977.	1.6	20
86	Rapid Quantification of Disease-Marker Proteins Using Continuous-Flow Immunoseparation in a Nanosieve Fluidic Device. Analytical Chemistry, 2009, 81, 7067-7074.	3.2	19
87	Notch signaling in regulating angiogenesis in a 3D biomimetic environment. Lab on A Chip, 2017, 17, 1948-1959.	3.1	19
88	Engineering multiscale structural orders for high-fidelity embryoids and organoids. Cell Stem Cell, 2022, 29, 722-743.	5.2	19
89	Emerging microengineered tools for functional analysis and phenotyping of blood cells. Trends in Biotechnology, 2014, 32, 586-594.	4.9	18
90	A microfluidics-based stem cell model of early post-implantation human development. Nature Protocols, 2021, 16, 309-326.	5.5	16

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91	Acoustic Actuation of Integrinâ€Bound Microbubbles for Mechanical Phenotyping during Differentiation and Morphogenesis of Human Embryonic Stem Cells. Small, 2018, 14, e1803137.	5.2	15
92	Capillary assisted deposition of carbon nanotube film for strain sensing. Applied Physics Letters, 2017, 111, 173105.	1.5	14
93	Multiplexed Luminescence Oxygen Channeling Immunoassay Based on Dualâ€Functional Barcodes with a Hostâ€“Guest Structure: A Facile and Robust Suspension Array Platform. Small, 2020, 16, e1907521.	5.2	14
94	Spatially resolved cell polarity proteomics of a human epiblast model. Science Advances, 2021, 7, .	4.7	14
95	Surface micromachining of polydimethylsiloxane for microfluidics applications. Biomicrofluidics, 2016, 10, 054114.	1.2	13
96	A systems mechanobiology model to predict cardiac reprogramming outcomes on different biomaterials. Biomaterials, 2018, 181, 280-292.	5.7	13
97	Effect of Cell Spreading on Rosette Formation by Human Pluripotent Stem Cell-Derived Neural Progenitor Cells. Frontiers in Cell and Developmental Biology, 2020, 8, 588941.	1.8	13
98	Tuning the surface properties of hydrogel at the nanoscale with focused ion irradiation. Soft Matter, 2014, 10, 8448-8456.	1.2	12
99	Microengineered synthetic cellular microenvironment for stem cells. Wiley Interdisciplinary Reviews: Nanomedicine and Nanobiotechnology, 2012, 4, 414-427.	3.3	11
100	Controlled Tubular Unit Formation from Collagen Film for Modular Tissue Engineering. ACS Biomaterials Science and Engineering, 2017, 3, 2860-2868.	2.6	11
101	Micro/nanoengineered technologies for human pluripotent stem cells maintenance and differentiation. Nano Today, 2021, 41, 101310.	6.2	11
102	Decreasing effective nanofluidic filter size by modulating electrical double layers: Separation enhancement in microfabricated nanofluidic filters. Electrophoresis, 2008, 29, 4646-4651.	1.3	10
103	Improving Survival of Disassociated Human Embryonic Stem Cells by Mechanical Stimulation Using Acoustic Tweezing Cytometry. Biophysical Journal, 2015, 108, 1315-1317.	0.2	9
104	Synthetic human embryology: towards a quantitative future. Current Opinion in Genetics and Development, 2020, 63, 30-35.	1.5	9
105	First complete model of the human embryo. Nature, 2021, 591, 531-532.	13.7	9
106	Accelerated Biofluid Filling in Complex Microfluidic Networks by Vacuumâ€Pressure Accelerated Movement (Vâ€PAM). Small, 2016, 12, 4521-4530.	5.2	8
107	Carbon Nanotube Strain Sensor Based Hemoretractometer for Blood Coagulation Testing. ACS Sensors, 2018, 3, 670-676.	4.0	8
108	Biophysical phenotypes and determinants of anterior vs. posterior primitive streak cells derived from human pluripotent stem cells. Acta Biomaterialia, 2019, 86, 125-134.	4.1	8

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109	Bioengineered pluripotent stem cell models: new approaches to explore early human embryo development. Current Opinion in Biotechnology, 2020, 66, 52-58.	3.3	8
110	Cell Shape and Substrate Rigidity Both Regulate Cell Stiffness. Biophysical Journal, 2011, 100, 303a.	0.2	6
111	Mass-producible microporous silicon membranes for specific leukocyte subset isolation, immunophenotyping, and personalized immunomodulatory drug screening in vitro. Lab on A Chip, 2019, 19, 3065-3076.	3.1	6
112	Harnessing Mechanobiology of Human Pluripotent Stem Cells for Regenerative Medicine. ACS Chemical Neuroscience, 2014, 5, 621-623.	1.7	5
113	Branching development of early post-implantation human embryonic-like tissues in 3D stem cell culture. Biomaterials, 2021, 275, 120898.	5.7	5
114	Single-Crystalline, Nanoporous Gallium Nitride Films With Fine Tuning of Pore Size for Stem Cell Engineering. Journal of Nanotechnology in Engineering and Medicine, 2014, 5, 0410041-410049.	0.8	4
115	Regulation of Cytoskeleton Contractility and Osteogenesis of Human Mesenchymal Stem Cells using Acoustic Tweezing Cytometry (ATC). Biophysical Journal, 2016, 110, 134a.	0.2	4
116	Modeling of human neurulation using bioengineered pluripotent stem cell culture. Current Opinion in Biomedical Engineering, 2020, 13, 127-133.	1.8	4
117	Integrated electroplated heat spreaders for high power semiconductor lasers. Journal of Applied Physics, 2008, 104, 064907.	1.1	3
118	Highly parallel single-cell force cytometry. Nature Biomedical Engineering, 2018, 2, 60-61.	11.6	3
119	Visualization and quantification of dynamic intercellular coupling in human embryonic stem cells using single cell sonoporation. Scientific Reports, 2020, 10, 18253.	1.6	3
120	Acoustic Tweezing Cytometry (ATC) on Dissociated Human Embryonic Stem Cells (HESCS). Biophysical Journal, 2016, 110, 95a.	0.2	2
121	Back-focal-plane interferometric detection of nanoparticles in spatially confined microfluidic channels. Review of Scientific Instruments, 2019, 90, 023107.	0.6	2
122	Nanofluidic molecular filters for efficient protein separation and preconcentration. , 0, , .		1
123	SnapShot: Embryo models. Stem Cell Reports, 2021, 16, 1142-1142.e1.	2.3	1
124	Machine learning-assisted imaging analysis of a human epiblast model. Integrative Biology (United) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50	0.6	1
125	Nanofluidic Devices for Rapid Analysis of DNA and Proteins. LEOS Summer Topical Meeting, 2007, , .	0.0	0
126	Micro-Engineered Sythetical Extrocellular Metrix for Stem Cell Differentiation Study. , 2010, , .		0

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127	Investigation of Mechanoresponsive Behaviors of Human Embryonic Stem Cells Using Microfabricated Elastomeric Post Arrays. , 2012, , .		0
128	The Non-Equilibrium Thermodynamics and Kinetics Governing Coupled Stress Fiber and Focal Adhesion Dynamics. Biophysical Journal, 2012, 102, 348a.	0.2	0
129	Biosample Preparation by Lab-on-a-Chip Devices. , 2013, , 1-19.		0
130	Synthetic micro/nanoengineered tools to study mechanobiology and its regulatory role for human pluripotent stem cells. , 2013, , .		0
131	Special Section on Nanoscale Materials, Devices, and Systems for Biosensing, Biomanipulation, and Biofabrication. Journal of Nanotechnology in Engineering and Medicine, 2014, 5, .	0.8	0
132	Stretchable micropost array cytometry: a powerful tool for cell mechanics and mechanobiology research. , 0, , 32-46.		0
133	Emerging Roles of YAP/TAZ in Mechanobiology. , 2016, , 83-96.		0
134	Clot Retraction: A Miniaturized Hemoretractometer for Blood Clot Retraction Testing (Small) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 462	5.2	0
135	Microfluidics: Accelerated Biofluid Filling in Complex Microfluidic Networks by Vacuum-Pressure Accelerated Movement (V-PAM) (Small 33/2016). Small, 2016, 12, 4444-4444.	5.2	0
136	O-045 Synthetic human embryo-like structures: a new paradigm for human embryology. Human Reproduction, 2021, 36, .	0.4	0
137	Mechanical Regulation of Stem Cell Differentiation on Geometrically Modulated Elastomeric Substrates. , 2010, , .		0
138	Nanofluidic Devices for Rapid Continuous-Flow Bioseparation. Methods in Molecular Biology, 2011, 790, 127-140.	0.4	0
139	Nanotopography Directs Fate of Human Embryonic Stem Cells. , 2012, , .		0
140	Cell Shape Dictates Differential Sensitivity of Subcellular Contractile Forces in Response to Directional Substrate Stretch. , 2013, , .		0
141	Elucidating the behavior of trophectoderm derivatives in mouse implantation. Developmental Cell, 2022, 57, 295-297.	3.1	0