Mingming Wu

List of Publications by Year
in descending order

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56	4,369	147566	161609
papers	citations	31 h-index	54 g-index

57	57	57	5883
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	A mechanical metamaterial made from a DNA hydrogel. Nature Nanotechnology, 2012, 7, 816-820.	15.6	484
2	A hydrogel-based microfluidic device for the studies of directed cell migration. Lab on A Chip, 2007, 7, 763.	3.1	305
3	Fibrous nonlinear elasticity enables positive mechanical feedback between cells and ECMs. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 14043-14048.	3.3	267
4	Scaling law in liquid drop coalescence driven by surface tension. Physics of Fluids, 2004, 16, L51-L54.	1.6	234
5	Experimental studies on the shape and path of small air bubbles rising in clean water. Physics of Fluids, 2002, 14, L49.	1.6	218
6	Logarithmic Sensing in Escherichia coli Bacterial Chemotaxis. Biophysical Journal, 2009, 96, 2439-2448.	0.2	211
7	A three-channel microfluidic device for generating static linear gradients and its application to the quantitative analysis of bacterial chemotaxis. Lab on A Chip, 2006, 6, 381-388.	3.1	207
8	Dendritic cell chemotaxis in 3D under defined chemokine gradients reveals differential response to ligands CCL21 and CCL19. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 5614-5619.	3.3	178
9	An agarose-based microfluidic platform with a gradient buffer for 3D chemotaxis studies. Biomedical Microdevices, 2009, 11, 827-835.	1.4	145
10	Three-dimensional fluorescent particle tracking at micron-scale using a single camera. Experiments in Fluids, 2005, 38, 461-465.	1.1	131
11	Collective Bacterial Dynamics Revealed Using a Three-Dimensional Population-Scale Defocused Particle Tracking Technique. Applied and Environmental Microbiology, 2006, 72, 4987-4994.	1.4	129
12	Assessing Adhesion Forces of Type I and Type IV Pili of Xylella fastidiosa Bacteria by Use of a Microfluidic Flow Chamber. Applied and Environmental Microbiology, 2007, 73, 2690-2696.	1.4	121
13	Effects of Gel Thickness on Microscopic Indentation Measurements ofÂGelÂModulus. Biophysical Journal, 2011, 101, 643-650.	0.2	108
14	Responses of Escherichia coli Bacteria to Two Opposing Chemoattractant Gradients Depend on the Chemoreceptor Ratio. Journal of Bacteriology, 2010, 192, 1796-1800.	1.0	97
15	Hydrodynamic tracer diffusion in suspensions of swimming bacteria. Physics of Fluids, 2014, 26, .	1.6	96
16	Fluid viscoelasticity promotes collective swimming of sperm. Scientific Reports, 2017, 7, 3152.	1.6	93
17	Emergence of Upstream Swimming via a Hydrodynamic Transition. Physical Review Letters, 2015, 114, 108102.	2.9	91
18	Cooperative Roles of SDF-1Î± and EGF Gradients on Tumor Cell Migration Revealed by a Robust 3D Microfluidic Model. PLoS ONE, 2013, 8, e68422.	1.1	89

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19	Designing compartmentalized hydrogel microparticles for cell encapsulation and scalable 3D cell culture. Journal of Materials Chemistry B, 2015, 3, 353-360.	2.9	86
20	Microfluidics for Mammalian Cell Chemotaxis. Annals of Biomedical Engineering, 2012, 40, 1316-1327.	1.3	80
21	Microgrooves and fluid flows provide preferential passageways for sperm over pathogen Tritrichomonas foetus. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 5431-5436.	3.3	79
22	Toward single cell traction microscopy within 3D collagen matrices. Experimental Cell Research, 2013, 319, 2396-2408.	1.2	78
23	Cooperative roles of biological flow and surface topography in guiding sperm migration revealed by a microfluidic model. Lab on A Chip, 2014, 14, 1348-1356.	3.1	78
24	Pair velocity correlations among swimmingEscherichia colibacteria are determined by force-quadrupole hydrodynamic interactions. Physics of Fluids, 2007, 19, 061701.	1.6	65
25	Interstitial flows promote amoeboid over mesenchymal motility of breast cancer cells revealed by a three dimensional microfluidic model. Integrative Biology (United Kingdom), 2015, 7, 1402-1411.	0.6	61
26	Modeling Tumor Microenvironments In Vitro. Journal of Biomechanical Engineering, 2014, 136, 021011.	0.6	56
27	Dynamics of Bovine Sperm Interaction with Epithelium Differ Between Oviductal Isthmus and Ampulla. Biology of Reproduction, 2016, 95, 90-90.	1.2	49
28	Microfluidic modeling of the biophysical microenvironment in tumor cell invasion. Lab on A Chip, 2017, 17, 3221-3233.	3.1	45
29	Gravity and Surface Tension Effects on the Shape Change of Soft Materials. Langmuir, 2013, 29, 8665-8674.	1.6	44
30	Mapping Three-Dimensional Stress and Strain Fields within a Soft Hydrogel Using a Fluorescence Microscope. Biophysical Journal, 2012, 102, 2241-2250.	0.2	40
31	A contact line pinning based microfluidic platform for modelling physiological flows. Lab on A Chip, 2013, 13, 3876.	3.1	39
32	Dynamic self-organization of microwell-aggregated cellular mixtures. Soft Matter, 2016, 12, 5739-5746.	1.2	33
33	Biologically inspired micro-robotic swimmers remotely controlled by ultrasound waves. Lab on A Chip, 2021, 21, 4095-4103.	3.1	33
34	Different Migration Patterns of Sea Urchin and Mouse Sperm Revealed by a Microfluidic Chemotaxis Device. PLoS ONE, 2013, 8, e60587.	1.1	32
35	Tumor spheroids under perfusion within a 3D microfluidic platform reveal critical roles of cell-cell adhesion in tumor invasion. Scientific Reports, 2020, 10, 9648.	1.6	28
36	Generation of a Gluconobacter oxydans knockout collection for improved extraction of rare earth elements. Nature Communications, 2021, 12, 6693.	5.8	28

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37	A microfluidic platform for profiling biomechanical properties of bacteria. Lab on A Chip, 2014, 14, 2491-2498.	3.1	27
38	Oxygen Tension and Riboflavin Gradients Cooperatively Regulate the Migration of Shewanella oneidensis MR-1 Revealed by a Hydrogel-Based Microfluidic Device. Frontiers in Microbiology, 2016, 7, 1438.	1.5	24
39	Bacterial collective motion near the contact line of an evaporating sessile drop. Physics of Fluids, 2014, 26, .	1.6	22
40	Glycation of collagen matrices promotes breast tumor cell invasion. Integrative Biology (United) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 62	0.6	19
41	An adaptive algorithm for tracking 3D bead displacements: application in biological experiments. Measurement Science and Technology, 2014, 25, 055701.	1.4	15
42	On the Mechanics of Cardiac Function of Drosophila Embryo. PLoS ONE, 2008, 3, e4045.	1.1	14
43	A 3D in situ cell counter reveals that breast tumor cell (MDAâ€MBâ€231) proliferation rate is reduced by the collagen matrix density. Biotechnology Progress, 2015, 31, 990-996.	1.3	14
44	Physical confinement induces malignant transformation in mammary epithelial cells. Biomaterials, 2019, 217, 119307.	5.7	13
45	The Architecture of Co-Culture Spheroids Regulates Tumor Invasion within a 3D Extracellular Matrix. Biophysical Reviews and Letters, 2020, 15, 131-141.	0.9	12
46	An array microhabitat system for high throughput studies of microalgal growth under controlled nutrient gradients. Lab on A Chip, 2015, 15, 3687-3694.	3.1	11
47	Epidermal growth factor promotes a mesenchymal over an amoeboid motility of MDA-MB-231 cells embedded within a 3D collagen matrix. European Physical Journal Plus, 2016, 131, 1.	1.2	8
48	Nanobiotechnology for the Environment: Innovative Solutions for the Management of Harmful Algal Blooms. Journal of Agricultural and Food Chemistry, 2018, 66, 6474-6479.	2.4	6
49	Assessing Neural Stem Cell Motility Using an Agarose Gel-based Microfluidic Device. Journal of Visualized Experiments, 2008, , .	0.2	5
50	An array microhabitat device with dual gradients revealed synergistic roles of nitrogen and phosphorous in the growth of microalgae. Lab on A Chip, 2020, 20, 798-805.	3.1	5
51	Lymphoidal chemokine CCL19 promoted the heterogeneity of the breast tumor cell motility within a 3D microenvironment revealed by a LÃ©vy distribution analysis. Integrative Biology (United Kingdom), 2020, 12, 12-20.	0.6	4
52	Microfluidic and mathematical modeling of aquatic microbial communities. Analytical and Bioanalytical Chemistry, 2021, 413, 2331-2344.	1.9	4
53	Spatial and temporal dynamics of RhoA activities of single breast tumor cells in a 3D environment revealed by a machine learning-assisted FRET technique. Experimental Cell Research, 2022, 410, 112939.	1.2	4
54	Tumor spheroid invasion in epidermal growth factor gradients revealed by a 3D microfluidic device. Physical Biology, 2022, 19, 036002.	0.8	2

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55	The Architecture of Co-Culture Spheroids Regulates Tumor Invasion Within a 3D Extracellular Matrix. , 2020, , 197-207.		1
56	Microscope-based light gradient generation for quantitative growth studies of photosynthetic micro-organisms. Lab on A Chip, 0, , .	3.1	0