Hang Lu

List of Publications by Year
in descending order

103 papers	4,148 citations	126708 33 h-index	133063 59 g-index
116 all docs	116 docs citations	116 times ranked	4264 citing authors

#	Article	IF	Citations
1	Oxygen sensation and social feeding mediated by a C. elegans guanylate cyclase homologue. Nature, 2004, 430, 317-322.	13.7	529
2	Automated on-chip rapid microscopy, phenotyping and sorting of C. elegans. Nature Methods, 2008, 5, 637-643.	9.0	354
3	Real-time multimodal optical control of neurons and muscles in freely behaving Caenorhabditis elegans. Nature Methods, 2011, 8, 153-158.	9.0	192
4	Long-term high-resolution imaging and culture of C. elegans in chip-gel hybrid microfluidic device for developmental studies. Lab on A Chip, 2010, 10, 1862.	3.1	138
5	A microfluidic array for large-scale ordering and orientation of embryos. Nature Methods, 2011, 8, 171-176.	9.0	133
6	Imaging Single-Cell Signaling Dynamics with a Deterministic High-Density Single-Cell Trap Array. Analytical Chemistry, 2011, 83, 7044-7052.	3.2	130
7	Microfluidics for the analysis of behavior, nerve regeneration, and neural cell biology in C. elegans. Current Opinion in Neurobiology, 2009, 19, 561-567.	2.0	114
8	Autoinhibition of a Neuronal Kinesin UNC-104/KIF1A Regulates the Size and Density of Synapses. Cell Reports, 2016, 16, 2129-2141.	2.9	105
9	Microfluidics-enabled phenotyping, imaging, and screening of multicellular organisms. Lab on A Chip, 2010, 10, 1509.	3.1	104
10	Microfluidic chamber arrays for whole-organism behavior-based chemical screening. Lab on A Chip, 2011, 11, 3689.	3.1	103
11	Autonomous screening of C. elegans identifies genes implicated in synaptogenesis. Nature Methods, 2012, 9, 977-980.	9.0	98
12	An integrin Î±IIbÎ²3 intermediate affinity state mediates biomechanical platelet aggregation. Nature Materials, 2019, 18, 760-769.	13.3	94
13	An Insulin-to-Insulin Regulatory Network Orchestrates Phenotypic Specificity in Development and Physiology. PLoS Genetics, 2014, 10, e1004225.	1.5	90
14	Microfluidics as a tool for C. elegans research. WormBook, 2013, , 1-19.	5.3	81
15	Computer-enhanced high-throughput genetic screens of C. elegans in a microfluidic system. Lab on A Chip, 2009, 9, 38-40.	3.1	70
16	Automated high-throughput cell microsurgery on-chip. Lab on A Chip, 2009, 9, 2764.	3.1	69
17	Pre-TCR ligand binding impacts thymocyte development before Î±Î²TCR expression. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 8373-8378.	3.3	62
18	Dynamics of Inductive ERK Signaling in the Drosophila Embryo. Current Biology, 2015, 25, 1784-1790.	1.8	62

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19	Parallel Processing of Two Mechanosensory Modalities by a Single Neuron in C.Âelegans. Developmental Cell, 2019, 51, 617-631.e3.	3.1	62
20	Hydrogel-droplet microfluidic platform for high-resolution imaging and sorting of early larval Caenorhabditis elegans. Lab on A Chip, 2015, 15, 1424-1431.	3.1	61
21	A multispectral optical illumination system with precise spatiotemporal control for the manipulation of optogenetic reagents. Nature Protocols, 2012, 7, 207-220.	5.5	58
22	Microfluidic trap array for massively parallel imaging of Drosophila embryos. Nature Protocols, 2013, 8, 721-736.	5.5	56
23	A multi-channel device for high-density target-selective stimulation and long-term monitoring of cells and subcellular features in C. elegans. Lab on A Chip, 2014, 14, 4513-4522.	3.1	56
24	Laterally Orienting C. elegans Using Geometry at Microscale for High-Throughput Visual Screens in Neurodegeneration and Neuronal Development Studies. PLoS ONE, 2012, 7, e35037.	1.1	55
25	A gene-expression-based neural code for food abundance that modulates lifespan. ELife, 2015, 4, e06259.	2.8	53
26	Kinetics of gene derepression by ERK signaling. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 10330-10335.	3.3	51
27	Automated and controlled mechanical stimulation and functional imaging in vivo in C. elegans. Lab on A Chip, 2017, 17, 2609-2618.	3.1	49
28	An Afferent Neuropeptide System Transmits Mechanosensory Signals Triggering Sensitization and Arousal in C.Âelegans. Neuron, 2018, 99, 1233-1246.e6.	3.8	49
29	Advances in microfluidic cell separation and manipulation. Current Opinion in Chemical Engineering, 2013, 2, 398-404.	3.8	48
30	Von Willebrand factor-A1 domain binds platelet glycoprotein IbÎ± in multiple states with distinctive force-dependent dissociation kinetics. Thrombosis Research, 2015, 136, 606-612.	0.8	46
31	Ankyrin Is An Intracellular Tether for TMC Mechanotransduction Channels. Neuron, 2020, 107, 112-125.e10.	3.8	45
32	Microfluidic-based patterning of embryonic stem cells for in vitro development studies. Lab on A Chip, 2013, 13, 4617.	3.1	40
33	A Systematic Ensemble Approach to Thermodynamic Modeling of Gene Expression from Sequence Data. Cell Systems, 2015, 1, 396-407.	2.9	39
34	An automated programmable platform enabling multiplex dynamic stimuli delivery and cellular response monitoring for high-throughput suspension single-cell signaling studies. Lab on A Chip, 2015, 15, 1497-1507.	3.1	38
35	A Generalizable, Tunable Microfluidic Platform for Delivering Fast Temporally Varying Chemical Signals to Probe Single-Cell Response Dynamics. Analytical Chemistry, 2014, 86, 10138-10147.	3.2	37
36	Deep phenotyping unveils hidden traits and genetic relations in subtle mutants. Nature Communications, 2016, 7, 12990.	5.8	37

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37	An automated platform to monitor long-term behavior and healthspan in Caenorhabditis elegans under precise environmental control. Communications Biology, 2020, 3, 297.	2.0	37
38	Single-cell analysis of embryoid body heterogeneity using microfluidic trapping array. Biomedical Microdevices, 2014, 16, 79-90.	1.4	36
39	Regulation of Synaptic Extracellular Matrix Composition Is Critical for Proper Synapse Morphology. Journal of Neuroscience, 2014, 34, 12678-12689.	1.7	32
40	Optics-Integrated Microfluidic Platforms for Biomolecular Analyses. Biophysical Journal, 2016, 110, 1684-1697.	0.2	30
41	Muscle contraction phenotypic analysis enabled by optogenetics reveals functional relationships of sarcomere components in Caenorhabditis elegans. Scientific Reports, 2016, 6, 19900.	1.6	28
42	Automated Processing of Imaging Data through Multi-tiered Classification of Biological Structures Illustrated Using Caenorhabditis elegans. PLoS Computational Biology, 2015, 11, e1004194.	1.5	27
43	On-chip functional neuroimaging with mechanical stimulation in<i>Caenorhabditis elegans</i>larvae for studying development and neural circuits. Lab on A Chip, 2018, 18, 601-609.	3.1	26
44	Quantitative screening of genes regulating tryptophan hydroxylase transcription in Caenorhabditis elegans using microfluidics and an adaptive algorithm. Integrative Biology (United Kingdom), 2013, 5, 372-380.	0.6	24
45	Graphical-model framework for automated annotation of cell identities in dense cellular images. ELife, 2021, 10, .	2.8	23
46	An integrated platform for large-scale data collection and precise perturbation of live Drosophila embryos. Scientific Reports, 2016, 6, 21366.	1.6	23
47	Droplet array for screening acute behaviour response to chemicals in<i>Caenorhabditis elegans</i>. Lab on A Chip, 2017, 17, 4303-4311.	3.1	19
48	Microfluidics in systems biology â€" hype or truly useful?. Current Opinion in Biotechnology, 2016, 39, 215-220.	3.3	18
49	A microfluidic trap array for longitudinal monitoring and multi-modal phenotypic analysis of individual stem cell aggregates. Lab on A Chip, 2017, 17, 3634-3642.	3.1	18
50	A perspective on optical developments in microfluidic platforms for <i>Caenorhabditis elegans</i> research. Biomicrofluidics, 2014, 8, 011301.	1.2	17
51	Automated screening of<i>C. elegans</i>neurodegeneration mutants enabled by microfluidics and image analysis algorithms. Integrative Biology (United Kingdom), 2018, 10, 539-548.	0.6	17
52	Single-cell resolution of intracellular T cell Ca²⁺dynamics in response to frequency-based H₂O₂stimulation. Integrative Biology (United Kingdom), 2017, 9, 238-247.	0.6	16
53	Twitchin kinase inhibits muscle activity. Molecular Biology of the Cell, 2017, 28, 1591-1600.	0.9	16
54	Deep learning for robust and flexible tracking in behavioral studies for C. elegans. PLoS Computational Biology, 2022, 18, e1009942.	1.5	16

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55	Temporal ordering and registration of images in studies of developmental dynamics. Development (Cambridge), 2015, 142, 1717-24.	1.2	15
56	Quantitative multivariate analysis of dynamic multicellular morphogenic trajectories. Integrative Biology (United Kingdom), 2015, 7, 825-833.	0.6	15
57	Recent Advances and Trends in Microfluidic Platforms for <i>C. elegans</i> Biological Assays. Annual Review of Analytical Chemistry, 2018, 11, 245-264.	2.8	15
58	Microfluidics for High-Throughput Quantitative Studies of Early Development. Annual Review of Biomedical Engineering, 2016, 18, 285-309.	5.7	14
59	Trends in high-throughput and functional neuroimaging inCaenorhabditis elegans. Wiley Interdisciplinary Reviews: Systems Biology and Medicine, 2017, 9, e1376.	6.6	14
60	Molecular evolution of troponin I and a role of its Nâ€terminal extension in nematode locomotion. Cytoskeleton, 2016, 73, 117-130.	1.0	13
61	Multimodal Stimulation in a Microfluidic Device Facilitates Studies of Interneurons in Sensory Integration in <i>C. elegans</i>. Small, 2020, 16, e1905852.	5.2	13
62	Parallel imaging of Drosophila embryos for quantitative analysis of genetic perturbations of the Ras pathway. DMM Disease Models and Mechanisms, 2017, 10, 923-929.	1.2	12
63	Enabling Systems Biology Approaches Through Microfabricated Systems. Analytical Chemistry, 2013, 85, 8882-8894.	3.2	11
64	A programmable platform for sub-second multichemical dynamic stimulation and neuronal functional imaging in<i>C. elegans</i>. Lab on A Chip, 2018, 18, 505-513.	3.1	11
65	Microfluidic platform with spatiotemporally controlled micro-environment for studying long-term C. elegans developmental arrests. Lab on A Chip, 2017, 17, 1826-1833.	3.1	10
66	Time-Resolved Single-Cell Assay for Measuring Intracellular Reactive Oxygen Species upon Exposure to Ambient Particulate Matter. Environmental Science & Technology, 2020, 54, 13121-13130.	4.6	10
67	smFISH in chips: a microfluidic-based pipeline to quantify in situ gene expression in whole organisms. Lab on A Chip, 2020, 20, 266-273.	3.1	9
68	AÂspontaneous complex structural variant in rcan-1 increases exploratory behavior and laboratory fitness of Caenorhabditis elegans. PLoS Genetics, 2020, 16, e1008606.	1.5	9
69	Animal microsurgery using microfluidics. Current Opinion in Biotechnology, 2014, 25, 24-29.	3.3	8
70	Synthesizing developmental trajectories. PLoS Computational Biology, 2017, 13, e1005742.	1.5	8
71	Rapid and multi-cycle smFISH enabled by microfluidic ion concentration polarization for <i>in-situ</i> profiling of tissue-specific gene expression in whole <i>C. elegans</i>. Biomicrofluidics, 2019, 13, 064101.	1.2	8
72	High-Temporal-Resolution smFISH Method for Gene Expression Studies in <i>Caenorhabditis elegans</i> Embryos. Analytical Chemistry, 2021, 93, 1369-1376.	3.2	8

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73	A Microfluidic Systems Biology Approach for Live Single-Cell Mitochondrial ROS Imaging. Methods in Enzymology, 2013, 526, 219-230.	0.4	7
74	Genetic control of encoding strategy in a food-sensing neural circuit. ELife, 2017, 6, .	2.8	7
75	Microfluidic post method for 3-dimensional modeling of plateletâ€“leukocyte interactions. Analyst, The, 2022, 147, 1222-1235.	1.7	7
76	Sequentially pulsed fluid delivery to establish soluble gradients within a scalable microfluidic chamber array. Biomicrofluidics, 2013, 7, 011804.	1.2	6
77	Microfluidic auto-alignment of protein patterns for dissecting multi-receptor crosstalk in platelets. Lab on A Chip, 2018, 18, 2966-2974.	3.1	6
78	Dynamic Mitochondrial Migratory Features Associated with Calcium Responses during T Cell Antigen Recognition. Journal of Immunology, 2019, 203, 760-768.	0.4	6
79	Reverse-Correlation Analysis of the Mechanosensation Circuit and Behavior in C. elegans Reveals Temporal and Spatial Encoding. Scientific Reports, 2019, 9, 5182.	1.6	6
80	The kinetics of E-selectin- and P-selectin-induced intermediate activation of integrin Î±LÎ²2 on neutrophils. Journal of Cell Science, 2021, 134, .	1.2	6
81	Automated and Dynamic Control of Chemical Content in Droplets for Scalable Screens of Small Animals. Small, 2022, 18, e2200319.	5.2	6
82	Fast, versatile and quantitative annotation of complex images. BioTechniques, 2019, 66, 269-275.	0.8	5
83	Recent Advances in Microfluidic Techniques for Systems Biology. Analytical Chemistry, 2019, 91, 315-329.	3.2	5
84	Emerging applications of microfluidic techniques for <i>inÂvitro</i> toxicity studies of atmospheric particulate matter. Aerosol Science and Technology, 2021, 55, 623-639.	1.5	5
85	Conformational changes in twitchin kinase in vivo revealed by FRET imaging of freely moving C. elegans. ELife, 2021, 10, .	2.8	5
86	Enabling high-throughput single-animal gene-expression studies with molecular and micro-scale technologies. Lab on A Chip, 2020, 20, 4528-4538.	3.1	4
87	Microfluidic perfusion modulates growth and motor neuron differentiation of stem cell aggregates. Analyst, The, 2020, 145, 4815-4826.	1.7	4
88	Microswimmer Combing: Controlling Interfacial Dynamics for Openâ€Surface Multifunctional Screening of Small Animals. Advanced Healthcare Materials, 2021, 10, e2001887.	3.9	4
89	Quantification of Information Encoded by Gene Expression Levels During Lifespan Modulation Under Broad-range Dietary Restriction in C. elegans. Journal of Visualized Experiments, 2017, , .	0.2	3
90	Calcium Dynamics of Ex Vivo Long-Term Cultured CD8+ T Cells Are Regulated by Changes in Redox Metabolism. PLoS ONE, 2016, 11, e0159248.	1.1	2

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91	A portable, low-cost device for precise control of specimen temperature under stereomicroscopes. PLoS ONE, 2020, 15, e0230241.	1.1	2
92	Topological Data Analysis of C. elegans Locomotion and Behavior. Frontiers in Artificial Intelligence, 2021, 4, 668395.	2.0	2
93	A Multicellular Network Mechanism for Temperature-Robust Food Sensing. Cell Reports, 2020, 33, 108521.	2.9	2
94	Digging deeper: methodologies for high-content phenotyping in Caenorhabditis elegans. Lab Animal, 2019, 48, 207-216.	0.2	1
95	Molecular evolution of troponin I and a role of its N-terminal extension in nematode locomotion. Cytoskeleton, 2016, 73, Spc1-Spc1.	1.0	0
96	Musings on the future of scientific (physical but not socially distanced) conferences: testing the water with organizing the on-line MicroTAS2020. Lab on A Chip, 2021, 21, 987-993.	3.1	0
97	Title is missing!. , 2020, 16, e1008606.		0
98	Title is missing!. , 2020, 16, e1008606.		0
99	Title is missing!. , 2020, 16, e1008606.		0
100	Title is missing!. , 2020, 16, e1008606.		0
101	Title is missing!. , 2020, 16, e1008606.		0
102	Title is missing!. , 2020, 16, e1008606.		0
103	Automated and Dynamic Control of Chemical Content in Droplets for Scalable Screens of Small Animals (Small 17/2022). Small, 2022, 18, .	5.2	0