

Kristian Franze

List of Publications by Year in descending order

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Version: 2024-02-01

69
papers

7,985
citations

71061

41
h-index

110317

64
g-index

88
all docs

88
docs citations

88
times ranked

10387
citing authors

#	ARTICLE	IF	CITATIONS
1	Mechanosensing is critical for axon growth in the developing brain. <i>Nature Neuroscience</i> , 2016, 19, 1592-1598.	7.1	478
2	Viscoelastic properties of individual glial cells and neurons in the CNS. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2006, 103, 17759-17764.	3.3	473
3	Fumarate is an epigenetic modifier that elicits epithelial-to-mesenchymal transition. <i>Nature</i> , 2016, 537, 544-547.	13.7	443
4	Tissue stiffening coordinates morphogenesis by triggering collective cell migration in vivo. <i>Nature</i> , 2018, 554, 523-527.	13.7	404
5	Muller cells are living optical fibers in the vertebrate retina. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2007, 104, 8287-8292.	3.3	356
6	The relationship between glial cell mechanosensitivity and foreign body reactions in the central nervous system. <i>Biomaterials</i> , 2014, 35, 3919-3925.	5.7	331
7	Niche stiffness underlies the ageing of central nervous system progenitor cells. <i>Nature</i> , 2019, 573, 130-134.	13.7	311
8	Metastable Underwater Superhydrophobicity. <i>Physical Review Letters</i> , 2010, 105, 166104.	2.9	304
9	Late Endosomes Act as mRNA Translation Platforms and Sustain Mitochondria in Axons. <i>Cell</i> , 2019, 176, 56-72.e15.	13.5	300
10	Mechanics in Neuronal Development and Repair. <i>Annual Review of Biomedical Engineering</i> , 2013, 15, 227-251.	5.7	293
11	The soft mechanical signature of glial scars in the central nervous system. <i>Nature Communications</i> , 2017, 8, 14787.	5.8	292
12	Reversible switching between superhydrophobic states on a hierarchically structured surface. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2012, 109, 10210-10213.	3.3	247
13	Mechanical difference between white and gray matter in the rat cerebellum measured by scanning force microscopy. <i>Journal of Biomechanics</i> , 2010, 43, 2986-2992.	0.9	221
14	The mechanical control of nervous system development. <i>Development (Cambridge)</i> , 2013, 140, 3069-3077.	1.2	199
15	Contact inhibition controls cell survival and proliferation via YAP/TAZ-autophagy axis. <i>Nature Communications</i> , 2018, 9, 2961.	5.8	193
16	Photomechanical Responses in <i>Drosophila</i> Photoreceptors. <i>Science</i> , 2012, 338, 260-263.	6.0	178
17	Neurite Branch Retraction Is Caused by a Threshold-Dependent Mechanical Impact. <i>Biophysical Journal</i> , 2009, 97, 1883-1890.	0.2	154
18	Auxetic nuclei in embryonic stem cells exiting pluripotency. <i>Nature Materials</i> , 2014, 13, 638-644.	13.3	145

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19	Retinal Glial (Müller) Cells: Sensing and Responding to Tissue Stretch. , 2010, 51, 1683.		138
20	CNS Cell Distribution and Axon Orientation Determine Local Spinal Cord Mechanical Properties. Biophysical Journal, 2015, 108, 2137-2147.	0.2	136
21	The biophysics of neuronal growth. Reports on Progress in Physics, 2010, 73, 094601.	8.1	131
22	Mechanosensitivity of astrocytes on optimized polyacrylamide gels analyzed by quantitative morphometry. Journal of Physics Condensed Matter, 2010, 22, 194114.	0.7	122
23	Growth cones as soft and weak force generators. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 13420-13425.	3.3	117
24	Microglia mechanics: immune activation alters traction forces and durotaxis. Frontiers in Cellular Neuroscience, 2015, 9, 363.	1.8	113
25	Defining the Adult Neural Stem Cell Niche Proteome Identifies Key Regulators of Adult Neurogenesis. Cell Stem Cell, 2020, 26, 277-293.e8.	5.2	109
26	Complex Stiffness Gradient Substrates for Studying Mechanotactic Cell Migration. Advanced Materials, 2012, 24, 6059-6064.	11.1	101
27	Rapid changes in tissue mechanics regulate cell behaviour in the developing embryonic brain. ELife, 2019, 8, .	2.8	101
28	Müller glia provide essential tensile strength to the developing retina. Journal of Cell Biology, 2015, 210, 1075-1083.	2.3	99
29	Spatial mapping of the mechanical properties of the living retina using scanning force microscopy. Soft Matter, 2011, 7, 3147.	1.2	90
30	Cortical cell stiffness is independent of substrate mechanics. Nature Materials, 2020, 19, 1019-1025.	13.3	89
31	KymoButler, a deep learning software for automated kymograph analysis. ELife, 2019, 8, .	2.8	83
32	Selective staining by vital dyes of Müller glial cells in retinal wholemounts. Glia, 2004, 45, 59-66.	2.5	75
33	Photonic Crystal Light Collectors in Fish Retina Improve Vision in Turbid Water. Science, 2012, 336, 1700-1703.	6.0	71
34	Towards brain-tissue-like biomaterials. Nature Communications, 2020, 11, 3423.	5.8	71
35	Single-molecule analysis of endogenous β -actin mRNA trafficking reveals a mechanism for compartmentalized mRNA localization in axons. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, E9697-E9706.	3.3	69
36	Tissue stiffness at the human maternal-fetal interface. Human Reproduction, 2019, 34, 1999-2008.	0.4	68

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37	Long-term imaging of cellular forces with high precision by elastic resonator interference stress microscopy. <i>Nature Cell Biology</i> , 2017, 19, 864-872.	4.6	61
38	Atomic force microscopy-based force measurements on animal cells and tissues. <i>Methods in Cell Biology</i> , 2015, 125, 211-235.	0.5	58
39	Integrating Chemistry and Mechanics: The Forces Driving Axon Growth. <i>Annual Review of Cell and Developmental Biology</i> , 2020, 36, 61-83.	4.0	58
40	F-actin dynamics regulates mammalian organ growth and cell fate maintenance. <i>Journal of Hepatology</i> , 2019, 71, 130-142.	1.8	56
41	Atomic force microscopy and its contribution to understanding the development of the nervous system. <i>Current Opinion in Genetics and Development</i> , 2011, 21, 530-537.	1.5	52
42	Speed and Sensitivity of Phototransduction in <i>Drosophila</i> Depend on Degree of Saturation of Membrane Phospholipids. <i>Journal of Neuroscience</i> , 2015, 35, 2731-2746.	1.7	49
43	Laminin Levels Regulate Tissue Migration and Anterior-Posterior Polarity during Egg Morphogenesis in <i>Drosophila</i> . <i>Cell Reports</i> , 2017, 20, 211-223.	2.9	42
44	The role of cell body density in ruminant retina mechanics assessed by atomic force and Brillouin microscopy. <i>Physical Biology</i> , 2017, 14, 065006.	0.8	38
45	Cell surface fluctuations regulate early embryonic lineage sorting. <i>Cell</i> , 2022, 185, 777-793.e20.	13.5	37
46	Brain tissue stiffness is a sensitive marker for acidosis. <i>Journal of Neuroscience Methods</i> , 2016, 271, 50-54.	1.3	36
47	ECM-Regulator timp Is Required for Stem Cell Niche Organization and Cyst Production in the <i>Drosophila</i> Ovary. <i>PLoS Genetics</i> , 2016, 12, e1005763.	1.5	33
48	Development of the anterior-posterior axis is a self-organizing process in the absence of maternal cues in the mouse embryo. <i>Cell Research</i> , 2015, 25, 1368-1371.	5.7	31
49	GABA receptors in Müller glial cells of the human retina. <i>Glia</i> , 2004, 46, 302-310.	2.5	28
50	All-Optical Detection of Neuronal Membrane Depolarization in Live Cells Using Colloidal Quantum Dots. <i>Nano Letters</i> , 2019, 19, 8539-8549.	4.5	27
51	Prevention of the foreign body response to implantable medical devices by inflammasome inhibition. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2022, 119, e2115857119.	3.3	27
52	Mechanochemical Crosstalk Produces Cell-Intrinsic Patterning of the Cortex to Orient the Mitotic Spindle. <i>Current Biology</i> , 2020, 30, 3687-3696.e4.	1.8	24
53	Theory for Durotactic Axon Guidance. <i>Physical Review Letters</i> , 2021, 126, 118101.	2.9	24
54	Force Generation by Molecular-Motor-Powered Microtubule Bundles; Implications for Neuronal Polarization and Growth. <i>Frontiers in Cellular Neuroscience</i> , 2015, 9, 441.	1.8	23

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55	StemBond hydrogels control the mechanical microenvironment for pluripotent stem cells. Nature Communications, 2021, 12, 6132.	5.8	22
56	Effect of vital dyes on human corneal endothelium and elasticity of Descemetâ€™s membrane. PLoS ONE, 2017, 12, e0184375.	1.1	14
57	Optical Neuronal Guidance. Methods in Cell Biology, 2007, 83, 495-520.	0.5	12
58	Biomechanics of the CNS. , 2009, , 173-213.		6
59	Spatial heterogeneity of cell-matrix adhesive forces predicts human glioblastoma migration. Neuro-Oncology Advances, 2020, 2, vdaa081.	0.4	6
60	Mechanical Regulation of Neurite Polarization and Growth: A Computational Study. Biophysical Journal, 2020, 118, 1914-1920.	0.2	6
61	Soft Polydimethylsiloxane-Supported Lipid Bilayers for Studying T Cell Interactions. Biophysical Journal, 2021, 120, 35-45.	0.2	6
62	Vinculin is required for neuronal mechanosensing but not for axon outgrowth. Experimental Cell Research, 2021, 407, 112805.	1.2	6
63	Live Cells as Optical Fibers in the Vertebrate Retina. , 2012, , .		4
64	Axons in the Chick Embryo Follow Soft Pathways Through Developing Somite Segments. Frontiers in Cell and Developmental Biology, 0, 10, .	1.8	3
65	Dual-beam laser traps in biology and medicine: when one beam is not enough. , 2010, , .		2
66	The Costs of Close Contacts: Visualizing the Energy Landscape of Cell Contacts at the Nanoscale. Biophysical Journal, 2020, 118, 1261-1269.	0.2	2
67	Complex Stiffness Gradient Substrates for Studying Mechanotactic Cell Migration (Adv. Mater.) Tj ETQq1 1 0.784314.rgBT /Overlock 11.1 1		1
68	The Mechanical Control of Nervous System Development. Biophysical Journal, 2017, 112, 2a.	0.2	0
69	Microtubule Polarity in Axons is Sorted by a Molecular Gradient of Dynactin. Biophysical Journal, 2020, 118, 598a.	0.2	0