

# Alex Groisman

## List of Publications by Year in descending order

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82  
papers

5,931  
citations

61984

43  
h-index

76900

74  
g-index

91  
all docs

91  
docs citations

91  
times ranked

7849  
citing authors

#	ARTICLE	IF	CITATIONS
1	Microfluidic Memory and Control Devices. <i>Science</i> , 2003, 300, 955-958.	12.6	340
2	MAPK-mediated bimodal gene expression and adaptive gradient sensing in yeast. <i>Nature</i> , 2007, 446, 46-51.	27.8	277
3	A microfluidic chemostat for experiments with bacterial and yeast cells. <i>Nature Methods</i> , 2005, 2, 685-689.	19.0	243
4	Separation of Plasma from Whole Human Blood in a Continuous Cross-Flow in a Molded Microfluidic Device. <i>Analytical Chemistry</i> , 2006, 78, 3765-3771.	6.5	198
5	High-Throughput and High-Resolution Flow Cytometry in Molded Microfluidic Devices. <i>Analytical Chemistry</i> , 2006, 78, 5653-5663.	6.5	174
6	A Microfluidic Rectifier: Anisotropic Flow Resistance at Low Reynolds Numbers. <i>Physical Review Letters</i> , 2004, 92, 094501.	7.8	168
7	Incoherent Feedforward Control Governs Adaptation of Activated Ras in a Eukaryotic Chemotaxis Pathway. <i>Science Signaling</i> , 2012, 5, ra2.	3.6	154
8	Slings enable neutrophil rolling at high shear. <i>Nature</i> , 2012, 488, 399-403.	27.8	153
9	Protein kinase A governs a RhoA RhoGDI protrusion retraction pacemaker in migrating cells. <i>Nature Cell Biology</i> , 2011, 13, 660-667.	10.3	149
10	Traction microscopy to identify force modulation in subresolution adhesions. <i>Nature Methods</i> , 2015, 12, 653-656.	19.0	138
11	Microfluidic experiments reveal that antifreeze proteins bound to ice crystals suffice to prevent their growth. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013, 110, 1309-1314.	7.1	137
12	Chaotic flow and efficient mixing in a microchannel with a polymer solution. <i>Physical Review E</i> , 2004, 69, 066305.	2.1	135
13	Self-Organization in High-Density Bacterial Colonies: Efficient Crowd Control. <i>PLoS Biology</i> , 2007, 5, e302.	5.6	131
14	Microfluidic devices for studies of shear-dependent platelet adhesion. <i>Lab on A Chip</i> , 2008, 8, 1486.	6.0	129
15	Visualizing a one-way protein encounter complex by ultrafast single-molecule mixing. <i>Nature Methods</i> , 2011, 8, 239-241.	19.0	128
16	Fine temporal control of the medium gas content and acidity and on-chip generation of series of oxygen concentrations for cell cultures. <i>Lab on A Chip</i> , 2009, 9, 1073.	6.0	125
17	External and internal constraints on eukaryotic chemotaxis. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2010, 107, 9656-9659.	7.1	120
18	Effect of flow and peristaltic mixing on bacterial growth in a gut-like channel. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016, 113, 11414-11419.	7.1	120

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19	Two-dimensional hydrodynamic focusing in a simple microfluidic device. <i>Applied Physics Letters</i> , 2005, 87, 114104.	3.3	118
20	Perfusion in Microfluidic Cross-Flow: Separation of White Blood Cells from Whole Blood and Exchange of Medium in a Continuous Flow. <i>Analytical Chemistry</i> , 2007, 79, 2023-2030.	6.5	117
21	Femtosecond laser-drilled capillary integrated into a microfluidic device. <i>Applied Physics Letters</i> , 2005, 86, 201106.	3.3	115
22	Cellular memory in eukaryotic chemotaxis. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014, 111, 14448-14453.	7.1	115
23	Vimentin fibers orient traction stress. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017, 114, 5195-5200.	7.1	115
24	Acute Drug Treatment in the Early <i>C. elegans</i> Embryo. <i>PLoS ONE</i> , 2011, 6, e24656.	2.5	114
25	Generation of oxygen gradients with arbitrary shapes in a microfluidic device. <i>Lab on A Chip</i> , 2010, 10, 388-391.	6.0	96
26	On-chip microfluidic tuning of an optical microring resonator. <i>Applied Physics Letters</i> , 2006, 88, 111107.	3.3	95
27	Bound attractant at the leading vs. the trailing edge determines chemotactic prowess. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2007, 104, 13349-13354.	7.1	95
28	Integrin-mediated Protein Kinase A Activation at the Leading Edge of Migrating Cells. <i>Molecular Biology of the Cell</i> , 2008, 19, 4930-4941.	2.1	88
29	Generation of complex concentration profiles in microchannels in a logarithmically small number of steps. <i>Lab on A Chip</i> , 2007, 7, 264-272.	6.0	86
30	Neutrophil recruitment limited by high-affinity bent $\beta 2$ integrin binding ligand in cis. <i>Nature Communications</i> , 2016, 7, 12658.	12.8	84
31	An easy to assemble microfluidic perfusion device with a magnetic clamp. <i>Lab on A Chip</i> , 2009, 9, 1085.	6.0	77
32	A microfluidic $2 \times 2$ optical switch. <i>Applied Physics Letters</i> , 2004, 85, 6119-6121.	3.3	76
33	The nucleus of endothelial cell as a sensor of blood flow direction. <i>Biology Open</i> , 2013, 2, 1007-1012.	1.2	74
34	Chaotic Mixing in a Steady Flow in a Microchannel. <i>Physical Review Letters</i> , 2005, 94, 134501.	7.8	72
35	Optofluidic $1 \times 4$ Switch. <i>Optics Express</i> , 2008, 16, 13499.	3.4	69
36	Ultrafast microfluidic mixer with three-dimensional flow focusing for studies of biochemical kinetics. <i>Lab on A Chip</i> , 2010, 10, 598-609.	6.0	66

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37	Functional Hierarchy of Redundant Actin Assembly Factors Revealed by Fine-Grained Registration of Intrinsic Image Fluctuations. <i>Cell Systems</i> , 2015, 1, 37-50.	6.2	65
38	Microfluidic Device for Single-Molecule Experiments with Enhanced Photostability. <i>Journal of the American Chemical Society</i> , 2009, 131, 13610-13612.	13.7	61
39	Measurements of Elastic Moduli of Silicone Gel Substrates with a Microfluidic Device. <i>PLoS ONE</i> , 2011, 6, e25534.	2.5	58
40	High Refractive Index Silicone Gels for Simultaneous Total Internal Reflection Fluorescence and Traction Force Microscopy of Adherent Cells. <i>PLoS ONE</i> , 2011, 6, e23807.	2.5	58
41	Self-induced mechanical stress can trigger biofilm formation in uropathogenic <i>Escherichia coli</i> . <i>Nature Communications</i> , 2018, 9, 4087.	12.8	57
42	Blood flow-induced Notch activation and endothelial migration enable vascular remodeling in zebrafish embryos. <i>Nature Communications</i> , 2018, 9, 5314.	12.8	54
43	Innate Non-Specific Cell Substratum Adhesion. <i>PLoS ONE</i> , 2012, 7, e42033.	2.5	49
44	Mechanism of bidirectional chemotaxis in <i>Escherichia coli</i> . <i>ELife</i> , 2017, 6, .	6.0	47
45	Bioluminescent response of individual dinoflagellate cells to hydrodynamic stress measured with millisecond resolution in a microfluidic device. <i>Journal of Experimental Biology</i> , 2008, 211, 2865-2875.	1.7	46
46	High-Affinity Bent $\beta$ 2-Integrin Molecules in Arresting Neutrophils Face Each Other through Binding to ICAMs In cis. <i>Cell Reports</i> , 2019, 26, 119-130.e5.	6.4	46
47	Set of two orthogonal adaptive cylindrical lenses in a monolith elastomer device. <i>Optics Express</i> , 2005, 13, 9003.	3.4	43
48	Quantitative Measurements of the Strength of Adhesion of Human Neutrophils to a Substratum in a Microfluidic Device. <i>Analytical Chemistry</i> , 2007, 79, 2249-2258.	6.5	39
49	Studies of bacterial aerotaxis in a microfluidic device. <i>Lab on A Chip</i> , 2012, 12, 4835.	6.0	39
50	Enhanced Dendritic Actin Network Formation in Extended Lamellipodia Drives Proliferation in Growth-Challenged Rac1P29S Melanoma Cells. <i>Developmental Cell</i> , 2019, 49, 444-460.e9.	7.0	36
51	Pre-complexation of talin and vinculin without tension is required for efficient nascent adhesion maturation. <i>ELife</i> , 2021, 10, .	6.0	36
52	Gradient sensing in defined chemotactic fields. <i>Integrative Biology (United Kingdom)</i> , 2010, 2, 659-668.	1.3	35
53	A microfluidic system for studying the behavior of zebrafish larvae under acute hypoxia. <i>Lab on A Chip</i> , 2015, 15, 857-866.	6.0	35
54	Effector and Regulatory T Cells Roll at High Shear Stress by Inducible Tether and Sling Formation. <i>Cell Reports</i> , 2017, 21, 3885-3899.	6.4	34

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55	High-Resolution Temperature-Concentration Diagram of $\alpha$ -Synuclein Conformation Obtained from a Single Förster Resonance Energy Transfer Image in a Microfluidic Device. <i>Analytical Chemistry</i> , 2009, 81, 6929-6935.	6.5	30
56	Pneumatically actuated adaptive lenses with millisecond response time. <i>Applied Physics Letters</i> , 2007, 91, .	3.3	28
57	Cell motility dependence on adhesive wetting. <i>Soft Matter</i> , 2019, 15, 2043-2050.	2.7	26
58	Tau/MAPT disease-associated variant A152T alters tau function and toxicity via impaired retrograde axonal transport. <i>Human Molecular Genetics</i> , 2019, 28, 1498-1514.	2.9	26
59	Microtargeted Gene Silencing and Ectopic Expression in Live Embryos Using Biolistic Delivery with a Pneumatic Capillary Gun. <i>Journal of Neuroscience</i> , 2006, 26, 6119-6123.	3.6	25
60	Microfluidics-based side view flow chamber reveals tether-to-sling transition in rolling neutrophils. <i>Scientific Reports</i> , 2016, 6, 28870.	3.3	25
61	CYK-4 functions independently of its centralspindlin partner ZEN-4 to cellularize oocytes in germline syncytia. <i>ELife</i> , 2018, 7, .	6.0	25
62	Rigidity of silicone substrates controls cell spreading and stem cell differentiation. <i>Scientific Reports</i> , 2016, 6, 33411.	3.3	24
63	Ultrafast cooling reveals microsecond-scale biomolecular dynamics. <i>Nature Communications</i> , 2014, 5, 5737.	12.8	23
64	$\text{G}\alpha_{i2}$ and $\text{G}\alpha_{i3}$ Differentially Regulate Arrest from Flow and Chemotaxis in Mouse Neutrophils. <i>Journal of Immunology</i> , 2016, 196, 3828-3833.	0.8	23
65	Cellular memory in eukaryotic chemotaxis depends on the background chemoattractant concentration. <i>Physical Review E</i> , 2021, 103, 012402.	2.1	17
66	Live Cell Imaging of Paxillin in Rolling Neutrophils by Dual-Color Quantitative Dynamic Footprinting. <i>Microcirculation</i> , 2011, 18, 361-372.	1.8	14
67	Amyloidogenic Processing of Amyloid Precursor Protein Drives Stretch-Induced Disruption of Axonal Transport in hiPSC-Derived Neurons. <i>Journal of Neuroscience</i> , 2021, 41, 10034-10053.	3.6	14
68	Combinatorial influences of paclitaxel and strain on axonal transport. <i>Experimental Neurology</i> , 2015, 271, 358-367.	4.1	12
69	Visualizing mechanical modulation of nanoscale organization of cell-matrix adhesions. <i>Integrative Biology (United Kingdom)</i> , 2016, 8, 795-804.	1.3	12
70	Coupling traction force patterns and actomyosin wave dynamics reveals mechanics of cell motion. <i>Molecular Systems Biology</i> , 2021, 17, e10505.	7.2	10
71	Microwell devices with finger-like channels for long-term imaging of HIV-1 expression kinetics in primary human lymphocytes. <i>Lab on A Chip</i> , 2012, 12, 4305.	6.0	8
72	Indispensable functions of ABL and PDGF receptor kinases in epithelial adherence of attaching/effacing pathogens under physiological conditions. <i>American Journal of Physiology - Cell Physiology</i> , 2014, 307, C180-C189.	4.6	8

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73	Localized electrical stimulation triggers cell-type-specific proliferation in biofilms. <i>Cell Systems</i> , 2022, 13, 488-498.e4.	6.2	8
74	Mitofusin <sup>2</sup> regulates leukocyte adhesion and $\beta$ 2 integrin activation. <i>Journal of Leukocyte Biology</i> , 2021, , .	3.3	7
75	A Four-Well Dish for High-Resolution Longitudinal Imaging of the Tail and Posterior Trunk of Larval Zebrafish. <i>Zebrafish</i> , 2017, 14, 489-491.	1.1	6
76	Novel micropatterning technique reveals dependence of cell-substrate adhesion and migration of social amoebas on parental strain, development, and fluorescent markers. <i>PLoS ONE</i> , 2020, 15, e0236171.	2.5	4
77	Localized RNAi and Ectopic Gene Expression in the Medicinal Leech. <i>Journal of Visualized Experiments</i> , 2008, , .	0.3	3
78	On-chip microfluidic tuning of an microring resonator. , 2006, , .		1
79	Optofluidic 1&#x00D7;4 switch. , 2008, , .		1
80	Linear conversion of pressure into concentration, rapid switching of concentration, and generation of linear ramps of concentration in a microfluidic device. <i>Biomicrofluidics</i> , 2012, 6, 024109.	2.4	1
81	Aggregation Temperature of <i>Escherichia coli</i> Depends on Steepness of the Thermal Gradient. <i>Biophysical Journal</i> , 2020, 118, 2816-2828.	0.5	1
82	Microfluidic device functionalized with P <sup>a</sup> selectin reveals discontinuous rolling of leukocytes in mouse whole blood. <i>FASEB Journal</i> , 2009, 23, 949.4.	0.5	0