Dimitrios Vavylonis

List of Publications by Year
in descending order

68 papers	2,898 citations	257450 24 h-index	197818 49 g-index
83 all docs	83 docs citations	83 times ranked	2746 citing authors

#	Article	IF	Citations
1	Assembly Mechanism of the Contractile Ring for Cytokinesis by Fission Yeast. Science, 2008, 319, 97-100.	12.6	346
2	Polymerization kinetics of ADP- and ADP-Pi-actin determined by fluorescence microscopy. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 8827-8832.	7.1	192
3	Segmentation and tracking of cytoskeletal filaments using open active contours. Cytoskeleton, 2010, 67, 693-705.	2.0	179
4	Model of Formin-Associated Actin Filament Elongation. Molecular Cell, 2006, 21, 455-466.	9.7	174
5	Oscillatory Dynamics of Cdc42 GTPase in the Control of Polarized Growth. Science, 2012, 337, 239-243.	12.6	148
6	Actin polymerization kinetics, cap structure, and fluctuations. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 8543-8548.	7.1	121
7	Nanoscale movements of cellulose microfibrils in primary cell walls. Nature Plants, 2017, 3, 17056.	9.3	121
8	Spontaneous Cdc42 Polarization Independent of GDI-Mediated Extraction and Actin-Based Trafficking. PLoS Biology, 2015, 13, e1002097.	5.6	107
9	Disentangling loosening from softening: insights into primary cell wall structure. Plant Journal, 2019, 100, 1101-1117.	5.7	96
10	SOAX: A software for quantification of 3D biopolymer networks. Scientific Reports, 2015, 5, 9081.	3.3	92
11	Î±-Actinin and fimbrin cooperate with myosin II to organize actomyosin bundles during contractile-ring assembly. Molecular Biology of the Cell, 2012, 23, 3094-3110.	2.1	84
12	Interactive, Computer-Assisted Tracking of Speckle Trajectories in Fluorescence Microscopy: Application to Actin Polymerization and Membrane Fusion. Biophysical Journal, 2011, 101, 1794-1804.	0.5	77
13	Excitable Actin Dynamics in Lamellipodial Protrusion and Retraction. Biophysical Journal, 2012, 102, 1493-1502.	0.5	74
14	Reconstitution of contractile actomyosin rings in vesicles. Nature Communications, 2021, 12, 2254.	12.8	74
15	Two Functionally Distinct Sources of Actin Monomers Supply the Leading Edge of Lamellipodia. Cell Reports, 2015, 11, 433-445.	6.4	69
16	Reactive Polymer Interfaces:Â How Reaction Kinetics Depend on Reactivity and Density of Chemical Groups. Macromolecules, 1999, 32, 1785-1796.	4.8	56
17	A review of models of fluctuating protrusion and retraction patterns at the leading edge of motile cells. Cytoskeleton, 2012, 69, 195-206.	2.0	51
18	3D actin network centerline extraction with multiple active contours. Medical Image Analysis, 2014, 18, 272-284.	11.6	50

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19	Local Pheromone Release from Dynamic Polarity Sites Underlies Cell-Cell Pairing during Yeast Mating. Current Biology, 2016, 26, 1117-1125.	3.9	47
20	ACD toxinâ€“produced actin oligomers poison formin-controlled actin polymerization. Science, 2015, 349, 535-539.	12.6	46
21	New single-molecule speckle microscopy reveals modification of the retrograde actin flow by focal adhesions at nanometer scales. Molecular Biology of the Cell, 2014, 25, 1010-1024.	2.1	44
22	Dynamic Network Morphology and Tension Buildup in a 3D Model of Cytokinetic Ring Assembly. Biophysical Journal, 2014, 107, 2618-2628.	0.5	43
23	Distributed Actin Turnover in the Lamellipodium and FRAP Kinetics. Biophysical Journal, 2013, 104, 247-257.	0.5	41
24	Automated actin filament segmentation, tracking and tip elongation measurements based on open active contour models. , 2009, 2009, 1302-1305.		40
25	Model of Fission Yeast Cell Shape Driven by Membrane-Bound Growth Factors and the Cytoskeleton. PLoS Computational Biology, 2013, 9, e1003287.	3.2	32
26	Actin cable distribution and dynamics arising from cross-linking, motor pulling, and filament turnover. Molecular Biology of the Cell, 2014, 25, 3006-3016.	2.1	28
27	Myosin-dependent actin stabilization as revealed by single-molecule imaging of actin turnover. Molecular Biology of the Cell, 2018, 29, 1941-1947.	2.1	26
28	ER-PM Contacts Define Actomyosin Kinetics for Proper Contractile Ring Assembly. Current Biology, 2016, 26, 647-653.	3.9	24
29	Model of For3p-Mediated Actin Cable Assembly in Fission Yeast. PLoS ONE, 2008, 3, e4078.	2.5	23
30	Model of myosin node aggregation into a contractile ring: the effect of local alignment. Journal of Physics Condensed Matter, 2011, 23, 374103.	1.8	21
31	Computational modeling highlights the role of the disordered Formin Homology 1 domain in profilinâ€actin transfer. FEBS Letters, 2018, 592, 1804-1816.	2.8	21
32	Actin Cross-Linking Toxin Is a Universal Inhibitor of Tandem-Organized and Oligomeric G-Actin Binding Proteins. Current Biology, 2018, 28, 1536-1547.e9.	3.9	20
33	Cell patterning by secretion-induced plasma membrane flows. Science Advances, 2021, 7, eabg6718.	10.3	20
34	Interfacial Reactions: Mixed Order Kinetics and Segregation Effects. Physical Review Letters, 2000, 84, 3193-3196.	7.8	19
35	Building a dendritic actin filament network branch by branch: models of filament orientation pattern and force generation in lamellipodia. Biophysical Reviews, 2018, 10, 1577-1585.	3.2	19
36	Actin Filament Tracking Based on Particle Filters and Stretching Open Active Contour Models. Lecture Notes in Computer Science, 2009, 12, 673-681.	1.3	19

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37	Extraction and analysis of actin networks based on Open Active Contour models. , 2011, 2011, 1334-1340.		18
38	Cytoskeletal dynamics in fission yeast: A review of models for polarization and division. HFSP Journal, 2010, 4, 122-130.	2.5	17
39	Exploration and stabilization of Ras1 mating zone: A mechanism with positive and negative feedbacks. PLoS Computational Biology, 2018, 14, e1006317.	3.2	16
40	Cell protrusion and retraction driven by fluctuations in actin polymerization: A twoâ€dimensional model. Cytoskeleton, 2017, 74, 490-503.	2.0	15
41	Organization of associating or crosslinked actin filaments in confinement. Cytoskeleton, 2019, 76, 532-548.	2.0	15
42	Lamellipodium tip actin barbed ends serve as a force sensor. Genes To Cells, 2019, 24, 705-718.	1.2	13
43	The Ultrasensitivity of Living Polymers. Physical Review Letters, 2003, 90, 118301.	7.8	12
44	Image Analysis Tools to Quantify Cell Shape and Protein Dynamics near the Leading Edge. Cell Structure and Function, 2013, 38, 1-7.	1.1	12
45	Automated Tracking of Biopolymer Growth and Network Deformation with TSOAX. Scientific Reports, 2019, 9, 1717.	3.3	12
46	Convection-Induced Biased Distribution of Actin Probes in Live Cells. Biophysical Journal, 2019, 116, 142-150.	0.5	12
47	Computational model of polarized actin cables and cytokinetic actin ring formation in budding yeast. Cytoskeleton, 2015, 72, 517-533.	2.0	11
48	Model of turnover kinetics in the lamellipodium: implications of slow- and fast- diffusing capping protein and Arp2/3 complex. Physical Biology, 2016, 13, 066009.	1.8	11
49	Kinetics of Myosin Node Aggregation into a Contractile Ring. Physical Review Letters, 2010, 105, 048102.	7.8	10
50	Insights into Actin Polymerization and Nucleation Using a Coarse-Grained Model. Biophysical Journal, 2020, 119, 553-566.	0.5	10
51	Discrete mechanical model of lamellipodial actin network implements molecular clutch mechanism and generates arcs and microspikes. PLoS Computational Biology, 2021, 17, e1009506.	3.2	9
52	Fission Yeast Polarization: Modeling Cdc42 Oscillations, Symmetry Breaking, and Zones of Activation and Inhibition. Cells, 2020, 9, 1769.	4.1	8
53	Pulsed Laser Polymerization at Low Conversions: Broadening and Chain Transfer Effects. Macromolecular Theory and Simulations, 2003, 12, 401-412.	1.4	6
54	Molecular viewing of actin polymerizing actions and beyond: Combination analysis of singleâ€molecule speckle microscopy with modeling, FRAP and sâ€FDAP (sequential fluorescence decay after) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 57 Td	1.5	6

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55	Formation of contractile networks and fibers in the medial cell cortex through myosinâ€II turnover, contraction, and stressâ€stabilization. Cytoskeleton, 2015, 72, 29-46.	2.0	6
56	Rounding Out the Understanding of ACD Toxicity with the Discovery of Cyclic Forms of Actin Oligomers. International Journal of Molecular Sciences, 2021, 22, 718.	4.1	6
57	Cdc42 GTPase-activating proteins (GAPs) regulate generational inheritance of cell polarity and cell shape in fission yeast. Molecular Biology of the Cell, 2021, 32, ar14.	2.1	4
58	A mechanism with severing near barbed ends and annealing explains structure and dynamics of dendritic actin networks. ELife, 0, 11, .	6.0	4
59	Cell Biology: Capturing Forminâ€™s Mechano-Inhibition. Current Biology, 2017, 27, R1078-R1080.	3.9	3
60	A Systems-Biology Approach to Yeast Actin Cables. Advances in Experimental Medicine and Biology, 2012, 736, 325-335.	1.6	2
61	Segmentation and Tracking of Cytoskeletal Filaments Using Open Active Contours. Biophysical Journal, 2011, 100, 445a.	0.5	1
62	Stress Fiber Organization and Dynamics in Cells Adhered to Substrates of Varying Stiffness. Biophysical Journal, 2012, 102, 694a.	0.5	0
63	Actin biophysics in the tradition of Fumio Oosawa: A special issue with contributions from participants at the 2016 â€œNow in Actinâ€• meeting in Nagoya. Cytoskeleton, 2017, 74, 445.	2.0	0
64	Lamellipodia in Stationary and Fluctuating States. Modeling and Simulation in Science, Engineering and Technology, 2018, , 211-258.	0.6	0
65	Multiscale Model of the Formin Homology 1 Domain Illustrates its Role in Regulation of Actin Polymerization. Biophysical Journal, 2018, 114, 144a.	0.5	0
66	A special issue on discrete modeling of the cytoskeleton. Cytoskeleton, 2019, 76, 493-494.	2.0	0
67	Molecular basis of cytokinesis in fission yeast. FASEB Journal, 2008, 22, 115.2.	0.5	0
68	An interview with Dimitrios Vavylonis, Lehigh University, Bethlehem, <scp>PA</scp>, <scp>USA</scp>. Cytoskeleton, 2022, 79, 3-4.	2.0	0