

Francois J Nedelec

List of Publications by Year in descending order

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67
papers

6,776
citations

81743

39
h-index

106150

65
g-index

86
all docs

86
docs citations

86
times ranked

5548
citing authors

#	ARTICLE	IF	CITATIONS
1	Self-organization of microtubules and motors. <i>Nature</i> , 1997, 389, 305-308.	13.7	748
2	Physical Properties Determining Self-Organization of Motors and Microtubules. <i>Science</i> , 2001, 292, 1167-1171.	6.0	555
3	Asymmetric division of contractile domains couples cell positioning and fate specification. <i>Nature</i> , 2016, 536, 344-348.	13.7	303
4	Pulsatile cell-autonomous contractility drives compaction in the mouse embryo. <i>Nature Cell Biology</i> , 2015, 17, 849-855.	4.6	267
5	Mechanism of phototaxis in marine zooplankton. <i>Nature</i> , 2008, 456, 395-399.	13.7	254
6	The 2020 motile active matter roadmap. <i>Journal of Physics Condensed Matter</i> , 2020, 32, 193001.	0.7	242
7	Mechanisms for focusing mitotic spindle poles by minus end-directed motor proteins. <i>Journal of Cell Biology</i> , 2005, 171, 229-240.	2.3	240
8	Crosslinkers and Motors Organize Dynamic Microtubules to Form Stable Bipolar Arrays in Fission Yeast. <i>Cell</i> , 2007, 128, 357-368.	13.5	222
9	Architecture and Connectivity Govern Actin Network Contractility. <i>Current Biology</i> , 2016, 26, 616-626.	1.8	221
10	Cortical Microtubule Contacts Position the Spindle in <i>C. elegans</i> Embryos. <i>Cell</i> , 2007, 129, 499-510.	13.5	212
11	Collective Langevin dynamics of flexible cytoskeletal fibers. <i>New Journal of Physics</i> , 2007, 9, 427-427.	1.2	202
12	Katanin Contributes to Interspecies Spindle Length Scaling in <i>Xenopus</i> . <i>Cell</i> , 2011, 147, 1397-1407.	13.5	184
13	Computer simulations reveal motor properties generating stable antiparallel microtubule interactions. <i>Journal of Cell Biology</i> , 2002, 158, 1005-1015.	2.3	183
14	Systematic Nanoscale Analysis of Endocytosis Links Efficient Vesicle Formation to Patterned Actin Nucleation. <i>Cell</i> , 2018, 174, 884-896.e17.	13.5	175
15	Chromophore-assisted light inactivation and self-organization of microtubules and motors. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 1998, 95, 4293-4298.	3.3	143
16	Phospho-Regulated Interaction between Kinesin-6 Klp9p and Microtubule Bundler Ase1p Promotes Spindle Elongation. <i>Developmental Cell</i> , 2009, 17, 257-267.	3.1	130
17	A computational model predicts <i>Xenopus</i> meiotic spindle organization. <i>Journal of Cell Biology</i> , 2010, 191, 1239-1249.	2.3	125
18	Nesprin-1±-Dependent Microtubule Nucleation from the Nuclear Envelope via Akap450 Is Necessary for Nuclear Positioning in Muscle Cells. <i>Current Biology</i> , 2017, 27, 2999-3009.e9.	1.8	125

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19	Self-organisation and forces in the microtubule cytoskeleton. <i>Current Opinion in Cell Biology</i> , 2003, 15, 118-124.	2.6	122
20	Visualizing the functional architecture of the endocytic machinery. <i>ELife</i> , 2015, 4, .	2.8	112
21	A self-organization framework for symmetry breaking in the mammalian embryo. <i>Nature Reviews Molecular Cell Biology</i> , 2013, 14, 452-459.	16.1	109
22	Dynamic Concentration of Motors in Microtubule Arrays. <i>Physical Review Letters</i> , 2001, 86, 3192-3195.	2.9	101
23	A theory that predicts behaviors of disordered cytoskeletal networks. <i>Molecular Systems Biology</i> , 2017, 13, 941.	3.2	100
24	Plastin increases cortical connectivity to facilitate robust polarization and timely cytokinesis. <i>Journal of Cell Biology</i> , 2017, 216, 1371-1386.	2.3	99
25	Determinants of Polar versus Nematic Organization in Networks of Dynamic Microtubules and Mitotic Motors. <i>Cell</i> , 2018, 175, 796-808.e14.	13.5	92
26	Augmin promotes meiotic spindle formation and bipolarity in <i>Xenopus</i> egg extracts. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2011, 108, 14473-14478.	3.3	91
27	Modelling microtubule patterns. <i>Nature Cell Biology</i> , 2006, 8, 1204-1211.	4.6	88
28	Membrane Mechanics of Endocytosis in Cells with Turgor. <i>PLoS Computational Biology</i> , 2015, 11, e1004538.	1.5	88
29	Chromatin Shapes the Mitotic Spindle. <i>Cell</i> , 2009, 138, 502-513.	13.5	84
30	A theory of microtubule catastrophes and their regulation. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2009, 106, 21173-21178.	3.3	77
31	Microtubule Dynamics Scale with Cell Size to Set Spindle Length and Assembly Timing. <i>Developmental Cell</i> , 2018, 45, 496-511.e6.	3.1	76
32	Regulation of Microtubule Dynamics by Reaction Cascades Around Chromosomes. <i>Science</i> , 2008, 322, 1243-1247.	6.0	72
33	Centrosome centering and decentering by microtubule network rearrangement. <i>Molecular Biology of the Cell</i> , 2016, 27, 2833-2843.	0.9	70
34	Force- and length-dependent catastrophe activities explain interphase microtubule organization in fission yeast. <i>Molecular Systems Biology</i> , 2009, 5, 241.	3.2	68
35	Cross-linkers both drive and brake cytoskeletal remodeling and furrowing in cytokinesis. <i>Molecular Biology of the Cell</i> , 2018, 29, 622-631.	0.9	68
36	Condensins Promote Chromosome Recoiling during Early Anaphase to Complete Sister Chromatid Separation. <i>Developmental Cell</i> , 2010, 19, 232-244.	3.1	64

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37	An Arp2/3 Nucleated F-Actin Shell Fragments Nuclear Membranes at Nuclear Envelope Breakdown in Starfish Oocytes. <i>Current Biology</i> , 2014, 24, 1421-1428.	1.8	56
38	Mechanical design principles of a mitotic spindle. <i>ELife</i> , 2014, 3, e03398.	2.8	53
39	Amplification of actin polymerization forces. <i>Journal of Cell Biology</i> , 2016, 212, 763-766.	2.3	50
40	Polarity sorting drives remodeling of actin-myosin networks. <i>Journal of Cell Science</i> , 2018, 132, .	1.2	50
41	Balance of microtubule stiffness and cortical tension determines the size of blood cells with marginal band across species. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017, 114, 4418-4423.	3.3	46
42	Dynein Transmits Polarized Actomyosin Cortical Flows to Promote Centrosome Separation. <i>Cell Reports</i> , 2016, 14, 2250-2262.	2.9	43
43	Self-Organization of Minimal Anaphase Spindle Midzone Bundles. <i>Current Biology</i> , 2019, 29, 2120-2130.e7.	1.8	43
44	Geometrical and Mechanical Properties Control Actin Filament Organization. <i>PLoS Computational Biology</i> , 2015, 11, e1004245.	1.5	30
45	F-Actin nucleated on chromosomes coordinates their capture by microtubules in oocyte meiosis. <i>Journal of Cell Biology</i> , 2018, 217, 2661-2674.	2.3	30
46	A disassembly-driven mechanism explains F-actin-mediated chromosome transport in starfish oocytes. <i>ELife</i> , 2018, 7, .	2.8	26
47	Patterns of molecular motors that guide and sort filaments. <i>Lab on A Chip</i> , 2012, 12, 4903.	3.1	25
48	Spindle pole body-anchored Kar3 drives the nucleus along microtubules from another nucleus in preparation for nuclear fusion during yeast karyogamy. <i>Genes and Development</i> , 2013, 27, 335-349.	2.7	25
49	A computational model of the early stages of acentriolar meiotic spindle assembly. <i>Molecular Biology of the Cell</i> , 2019, 30, 863-875.	0.9	22
50	Mechanism of nuclear movements in a multinucleated cell. <i>Molecular Biology of the Cell</i> , 2017, 28, 645-660.	0.9	20
51	Spatial Regulation Improves Antiparallel Microtubule Overlap during Mitotic Spindle Assembly. <i>Biophysical Journal</i> , 2008, 94, 2598-2609.	0.2	19
52	Effects of spatial dimensionality and steric interactions on microtubule-motor self-organization. <i>Physical Biology</i> , 2019, 16, 046004.	0.8	16
53	Collective behavior of minus-ended motors in mitotic microtubule asters gliding toward DNA. <i>Physical Biology</i> , 2014, 11, 016008.	0.8	14
54	The mitotic spindle and actin tails. <i>Biology of the Cell</i> , 2004, 96, 237-240.	0.7	13

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55	Theory of antiparallel microtubule overlap stabilization by motors and diffusible crosslinkers. Cytoskeleton, 2019, 76, 600-610.	1.0	12
56	Bond Type and Discretization of Nonmuscle Myosin II Are Critical for Simulated Contractile Dynamics. Biophysical Journal, 2020, 118, 2703-2717.	0.2	10
57	ConfocalGN: A minimalistic confocal image generator. SoftwareX, 2017, 6, 243-247.	1.2	9
58	Dynamics of microtubule aster formation by motor complexes. Comptes Rendus Physique, 2001, 2, 841-847.	0.1	8
59	Insights from graph theory on the morphologies of actomyosin networks with multilinkers. Physical Review E, 2020, 102, 062420.	0.8	6
60	Large-scale microtubule networks contract quite well. ELife, 2016, 5, .	2.8	5
61	Microtubule rescue at midzone edges promotes overlap stability and prevents spindle collapse during anaphase B. ELife, 2022, 11, .	2.8	5
62	Geometrical and Mechanical Properties Control Actin Filament Organization. Biophysical Journal, 2014, 106, 568a-569a.	0.2	3
63	preconfig: A Versatile Configuration File Generator for Varying Parameters. Journal of Open Research Software, 2017, 5, 9.	2.7	3
64	Assaying Spatial Organization of Microtubules by Kinesin Motors. , 2001, 164, 213-222.		2
65	Spindle Assembly on Immobilized Chromatin Micropatterns. Methods in Enzymology, 2014, 540, 435-448.	0.4	1
66	Mitotic Spindle Assembly on Chromatin Patterns Made with Deep UV Photochemistry. Methods in Cell Biology, 2014, 120, 3-17.	0.5	1
67	Chromatin Shapes the Mitotic Spindle. , 2009, 138, 502-513.		1