Josef A KÃ¤s

List of Publications by Year
in descending order

103 papers	10,232 citations	87888 38 h-index	34986 98 g-index
105 all docs	105 docs citations	105 times ranked	9911 citing authors

#	Article	IF	Citations
1	Optical Deformability as an Inherent Cell Marker for Testing Malignant Transformation and Metastatic Competence. Biophysical Journal, 2005, 88, 3689-3698.	0.5	1,268
2	Elasticity of Semiflexible Biopolymer Networks. Physical Review Letters, 1995, 75, 4425-4428.	7.8	935
3	The Optical Stretcher: A Novel Laser Tool to Micromanipulate Cells. Biophysical Journal, 2001, 81, 767-784.	0.5	921
4	Viscoelastic properties of individual glial cells and neurons in the CNS. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 17759-17764.	7.1	473
5	Scanning Probe-Based Frequency-Dependent Microrheology of Polymer Gels and Biological Cells. Physical Review Letters, 2000, 85, 880-883.	7.8	443
6	Quantitative Analysis of the Viscoelastic Properties of Thin Regions of Fibroblasts Using Atomic Force Microscopy. Biophysical Journal, 2004, 86, 1777-1793.	0.5	407
7	Shape transitions and shape stability of giant phospholipid vesicles in pure water induced by area-to-volume changes. Biophysical Journal, 1991, 60, 825-844.	0.5	373
8	Optical Deformability of Soft Biological Dielectrics. Physical Review Letters, 2000, 84, 5451-5454.	7.8	307
9	Active fluidization of polymer networks through molecular motors. Nature, 2002, 416, 413-416.	27.8	262
10	Budding and fission of vesicles. Biophysical Journal, 1993, 65, 1396-1403.	0.5	253
11	F-actin, a model polymer for semiflexible chains in dilute, semidilute, and liquid crystalline solutions. Biophysical Journal, 1996, 70, 609-625.	0.5	247
12	Direct imaging of reptation for semiflexible actin filaments. Nature, 1994, 368, 226-229.	27.8	240
13	Shape Transformations of Giant Vesicles: Extreme Sensitivity to Bilayer Asymmetry. Europhysics Letters, 1990, 13, 659-664.	2.0	230
14	Keratins significantly contribute to cell stiffness and impact invasive behavior. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 18507-18512.	7.1	229
15	Apparent Subdiffusion Inherent to Single Particle Tracking. Biophysical Journal, 2002, 83, 2109-2117.	0.5	227
16	Cellâ€“cell adhesion and 3D matrix confinement determine jamming transitions in breast cancer invasion. Nature Cell Biology, 2020, 22, 1103-1115.	10.3	209
17	Guiding neuronal growth with light. Proceedings of the National Academy of Sciences of the United States of America, 2002, 99, 16024-16028.	7.1	201
18	Emergent complexity of the cytoskeleton: from single filaments to tissue. Advances in Physics, 2013, 62, 1-112.	14.4	182

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19	Are biomechanical changes necessary for tumour progression?. Nature Physics, 2010, 6, 730-732.	16.7	179
20	Reactive glial cells: increased stiffness correlates with increased intermediate filament expression. FASEB Journal, 2011, 25, 624-631.	0.5	148
21	Jamming transitions in cancer. Journal Physics D: Applied Physics, 2017, 50, 483001.	2.8	133
22	The optical cell rotator. Optics Express, 2008, 16, 16984.	3.4	119
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.	7.1	117
24	How tissue fluidity influences brain tumor progression. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 128-134.	7.1	103
25	Mechanical Properties of Actin Filament Networks Depend on Preparation, Polymerization Conditions, and Storage of Actin Monomers. Biophysical Journal, 1998, 74, 2731-2740.	0.5	101
26	MÃ¼ller Glial Cell-Provided Cellular Light Guidance through the Vital Guinea-Pig Retina. Biophysical Journal, 2011, 101, 2611-2619.	0.5	87
27	Testing the differential adhesion hypothesis across the epithelialâˆ'mesenchymal transition. New Journal of Physics, 2015, 17, 083049.	2.9	85
28	Stiffening of Human Skin Fibroblasts with Age. Biophysical Journal, 2010, 99, 2434-2442.	0.5	72
29	Enhancement of phosphoinositide 3-kinase (PI 3-kinase) activity by membrane curvature and inositol-phospholipid-binding peptides. FEBS Journal, 1998, 258, 846-853.	0.2	64
30	Collagen networks determine viscoelastic properties of connective tissues yet do not hinder diffusion of the aqueous solvent. Soft Matter, 2019, 15, 3055-3064.	2.7	60
31	Tailoring the material properties of gelatin hydrogels by high energy electron irradiation. Journal of Materials Chemistry B, 2014, 2, 4297-4309.	5.8	59
32	Counterion-induced actin ring formation. European Biophysics Journal, 2001, 30, 477-484.	2.2	56
33	Cell migration through small gaps. European Biophysics Journal, 2006, 35, 713-719.	2.2	53
34	Neuronal Growth: A Bistable Stochastic Process. Physical Review Letters, 2006, 96, 098103.	7.8	52
35	Slow and anomalous dynamics of an MCF-10A epithelial cell monolayer. Soft Matter, 2013, 9, 9335.	2.7	51
36	Invasive cancer cell lines exhibit biomechanical properties that are distinct from their noninvasive counterparts. Soft Matter, 2011, 7, 11488.	2.7	50

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37	Thermorheology of living cellsâ€"impact of temperature variations on cell mechanics. New Journal of Physics, 2013, 15, 045026.	2.9	50
38	Cell and Nucleus Shape as an Indicator of Tissue Fluidity in Carcinoma. Physical Review X, 2021, 11, .	8.9	46
39	Detecting heterogeneity in and between breast cancer cell lines. Cancer Convergence, 2020, 4, 1.	8.0	39
40	Stiffening of Human Skin Fibroblasts with Age. Clinics in Plastic Surgery, 2012, 39, 9-20.	1.5	38
41	Tuning Synthetic Semiflexible Networks by Bending Stiffness. Physical Review Letters, 2016, 117, 197801.	7.8	38
42	Passive and active single-cell biomechanics: a new perspective in cancer diagnosis. Soft Matter, 2009, 5, 2171.	2.7	37
43	Pharmacological targeting of membrane rigidity: implications on cancer cell migration and invasion. New Journal of Physics, 2015, 17, 083007.	2.9	37
44	Stochastic Actin Polymerization and Steady Retrograde Flow Determine Growth Cone Advancement. Biophysical Journal, 2009, 96, 5130-5138.	0.5	36
45	Cell membrane softening in human breast and cervical cancer cells. New Journal of Physics, 2015, 17, 083008.	2.9	36
46	Synthetic Transient Crosslinks Program the Mechanics of Soft, Biopolymerâ€Based Materials. Advanced Materials, 2018, 30, e1706092.	21.0	35
47	Measurement of diffusion in Langmuir monolayers by single-particle tracking. Physical Chemistry Chemical Physics, 2004, 6, 5535-5542.	2.8	33
48	Buckling, stiffening, and negative dissipation in the dynamics of a biopolymer in an active medium. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 19776-19779.	7.1	32
49	Interaction of the MARCKS peptide with PIP2 in phospholipid monolayers. Biochimica Et Biophysica Acta - Biomembranes, 2009, 1788, 1474-1481.	2.6	32
50	The two faces of enhanced stroma: Stroma acts as a tumor promoter and a steric obstacle. NMR in Biomedicine, 2018, 31, e3831.	2.8	32
51	Transition from a Linear to a Harmonic Potential in Collective Dynamics of a Multifilament Actin Bundle. Physical Review Letters, 2016, 116, 108102.	7.8	31
52	Directed persistent motion maintains sheet integrity during multi-cellular spreading and migration. Soft Matter, 2012, 8, 6913.	2.7	30
53	Semiflexible Biopolymers in Bundled Arrangements. Polymers, 2016, 8, 274.	4.5	30
54	Mechano-Dependent Phosphorylation of the PDZ-Binding Motif of CD97/ADGRE5 Modulates Cellular Detachment. Cell Reports, 2018, 24, 1986-1995.	6.4	29

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55	Gelsolin overexpression enhances neurite outgrowth in PC12 cells. FEBS Letters, 2001, 508, 282-286.	2.8	28
56	Quantum dots--a versatile tool in plant science?. Journal of Nanobiotechnology, 2006, 4, 5.	9.1	27
57	Self-assembly of hierarchically ordered structures in DNA nanotube systems. New Journal of Physics, 2016, 18, 055001.	2.9	25
58	Simultaneous manipulation and detection of living cell membrane dynamics. Optics Letters, 2007, 32, 1893.	3.3	24
59	Jamming in Embryogenesis and Cancer Progression. Frontiers in Physics, 2021, 9, .	2.1	24
60	Thermal instability of cell nuclei. New Journal of Physics, 2014, 16, 073009.	2.9	23
61	Glassy dynamics in composite biopolymer networks. Soft Matter, 2018, 14, 7970-7978.	2.7	23
62	Attractive membrane domains control lateral diffusion. Physical Review E, 2008, 77, 051906.	2.1	22
63	Compaction of cell shape occurs before decrease of elasticity in CHOâ€K1 cells treated with actin cytoskeleton disrupting drug cytochalasin D. Cytoskeleton, 2009, 66, 193-201.	4.4	21
64	Biomechanical properties of retinal glial cells: Comparative and developmental data. Experimental Eye Research, 2013, 113, 60-65.	2.6	21
65	The role of stickiness in the rheology of semiflexible polymers. Soft Matter, 2019, 15, 4865-4872.	2.7	21
66	Simultaneous Single-Particle Tracking and Visualization of Domain Structure on Lipid Monolayers. Langmuir, 2003, 19, 4876-4879.	3.5	19
67	Active contractions in single suspended epithelial cells. European Biophysics Journal, 2014, 43, 11-23.	2.2	18
68	Calcium imaging in the optical stretcher. Optics Express, 2011, 19, 19212.	3.4	17
69	Forces from the rear: deformed microtubules in neuronal growth cones influence retrograde flow and advancement. New Journal of Physics, 2013, 15, 015007.	2.9	17
70	Tailoring Substrates for Longâ€Term Organotypic Culture of Adult Neuronal Tissue. Advanced Materials, 2012, 24, 2399-2403.	21.0	16
71	Inherently slow and weak forward forces of neuronal growth cones measured by a driftâ€stabilized atomic force microscope. Cytoskeleton, 2013, 70, 44-53.	2.0	16
72	Anomalous cell sorting behavior in mixed monolayers discloses hidden system complexities. New Journal of Physics, 2021, 23, 043034.	2.9	14

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73	The lensing effect of trapped particles in a dual-beam optical trap. Optics Express, 2015, 23, 5221.	3.4	13
74	Stochastic actin dynamics in lamellipodia reveal parameter space for cell type classification. Soft Matter, 2011, 7, 3192.	2.7	12
75	Oscillations in the Lateral Pressure of Lipid Monolayers Induced by Nonlinear Chemical Dynamics of the Second Messengers MARCKS andÂProtein Kinase C. Biophysical Journal, 2011, 100, 939-947.	0.5	12
76	ERBB2 overexpression triggers transient high mechanoactivity of breast tumor cells. Cytoskeleton, 2012, 69, 267-277.	2.0	12
77	Doseâ€dependent collagen crossâ€linking of rabbit scleral tissue by blue light and riboflavin treatment probed by dynamic shear rheology. Acta Ophthalmologica, 2015, 93, e328-36.	1.1	12
78	Single Actin Bundle Rheology. Molecules, 2017, 22, 1804.	3.8	12
79	Changing cell mechanicsâ€"a precondition for malignant transformation of oral squamous carcinoma cells. Convergent Science Physical Oncology, 2018, 4, 034001.	2.6	11
80	Oriented Confined Water Induced by Cationic Lipids. Langmuir, 2012, 28, 4712-4722.	3.5	10
81	Rapid Prototyping of 3D Biochips for Cell Motility Studies Using Two-Photon Polymerization. Frontiers in Bioengineering and Biotechnology, 2021, 9, 664094.	4.1	10
82	Differences in cortical contractile properties between healthy epithelial and cancerous mesenchymal breast cells. New Journal of Physics, 2021, 23, 103020.	2.9	10
83	A novel approach for mechanical tissue characterization indicates decreased elastic strength in brain areas affected by experimental thromboembolic stroke. NeuroReport, 2015, 26, 583-587.	1.2	10
84	Cells in Slow Motion: Apparent Undercooling Increases Glassy Behavior at Physiological Temperatures. Advanced Materials, 2021, 33, e2101840.	21.0	9
85	Whole tissue and single cell mechanics are correlated in human brain tumors. Soft Matter, 2021, 17, 10744-10752.	2.7	9
86	Diffusion of Nanoparticles in Monolayers is Modulated by Domain Size. Langmuir, 2008, 24, 3365-3369.	3.5	8
87	Stages of neuronal network formation. New Journal of Physics, 2013, 15, 025029.	2.9	8
88	Optical stretching in continuous flows. Convergent Science Physical Oncology, 2017, 3, 024004.	2.6	8
89	Roadmap to Local Tumour Growth: Insights from Cervical Cancer. Scientific Reports, 2019, 9, 12768.	3.3	8
90	The Mechanical Fingerprint of Circulating Tumor Cells (CTCs) in Breast Cancer Patients. Cancers, 2021, 13, 1119.	3.7	8

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91	Normal epithelial and triple-negative breast cancer cells show the same invasion potential in rigid spatial confinement. New Journal of Physics, 2019, 21, 083016.	2.9	7
92	Different modes of growth cone collapse in NG 108-15 cells. European Biophysics Journal, 2013, 42, 591-605.	2.2	6
93	Structural investigation on the adsorption of the MARCKS peptide on anionic lipid monolayers â€“ effects beyond electrostatic. Chemistry and Physics of Lipids, 2011, 164, 266-275.	3.2	5
94	THE CYTOSKELETON: AN ACTIVE POLYMER-BASED SCAFFOLD. Biophysical Reviews and Letters, 2009, 04, 179-208.	0.8	4
95	Feeling with light for cancer. , 2006, 6080, 126.		3
96	Contact-free Mechanical Manipulation of Biological Materials. Springer Handbooks, 2017, , 617-641.	0.6	3
97	DNA Nanotubes as a Versatile Tool to Study Semiflexible Polymers. Journal of Visualized Experiments, 2017, , .	0.3	3
98	Physical Properties of Single Cells and Collective Behavior. , 2018, , 89-121.		2
99	Influence of hyaluronic acid binding on the actin cortex measured by optical forces. Journal of Biophotonics, 2020, 13, e201960215.	2.3	2
100	Intermediate filaments ensure resiliency of single carcinoma cells, while active contractility of the actin cortex determines their invasive potential. New Journal of Physics, 2021, 23, 083028.	2.9	2
101	Polymerdynamik einzelner MakromolekÃ¼le. Chemie in Unserer Zeit, 1995, 29, 207-210.	0.1	0
102	Optical Stretcher for Single Cells. , 0, , 161-174.		0
103	Tissue Engineering: Tailoring Substrates for Long-Term Organotypic Culture of Adult Neuronal Tissue (Adv. Mater. 18/2012). Advanced Materials, 2012, 24, 2398-2398.	21.0	0