Christoph F Schmidt

List of Publications by Citations

120 papers	10,844 citations	47 h-index	104 g-index
133 ext. papers	12,113 ext. citations	7.2 avg, IF	6.02 L-index

#	Paper	IF	Citations
120	Direct observation of kinesin stepping by optical trapping interferometry. *Nature*, **1993**, 365, 721-7	50.4	1573
119	Rapid chiral assembly of rigid DNA building blocks for molecular nanofabrication. *Science*, **2005**, 310, 1661-5	33.3	857
118	Nonequilibrium mechanics of active cytoskeletal networks. *Science*, **2007**, 315, 370-3	33.3	663
117	The bipolar mitotic kinesin Eg5 moves on both microtubules that it crosslinks. *Nature*, **2005**, 435, 114-8	50.4	508
116	Interference model for back-focal-plane displacement detection in optical tweezers. *Optics Letters*, **1998**, 23, 7-9	3	459
115	Laser-induced heating in optical traps. *Biophysical Journal*, **2003**, 84, 1308-16	2.9	444
114	Microscopic Viscoelasticity: Shear Moduli of Soft Materials Determined from Thermal Fluctuations. *Physical Review Letters*, **1997**, 79, 3286-3289	7.4	423
113	Determining Microscopic Viscoelasticity in Flexible and Semiflexible Polymer Networks from Thermal Fluctuations. *Macromolecules*, **1997**, 30, 7781-7792	5.5	292
112	Bacteriophage capsids: tough nanoshells with complex elastic properties. *Proceedings of the National Academy of Sciences of the United States of America*, **2004**, 101, 7600-5	11.5	279
111	Microrheology. *Current Opinion in Colloid and Interface Science*, **1999**, 4, 300-307	7.6	277
110	Nanoindentation studies of full and empty viral capsids and the effects of capsid protein mutations on elasticity and strength. *Proceedings of the National Academy of Sciences of the United States of America*, **2006**, 103, 6184-9	11.5	238
109	Two-dimensional tracking of ncd motility by back focal plane interferometry. *Biophysical Journal*, **1998**, 74, 1074-85	2.9	179
108	Chain dynamics, mesh size, and diffusive transport in networks of polymerized actin: a quasielastic light scattering and microfluorescence study. *Macromolecules*, **1989**, 22, 3638-3649	5.5	179
107	High-resolution mapping of intracellular fluctuations using carbon nanotubes. *Science*, **2014**, 344, 1031-5	33.3	152
106	Conformation and elasticity of the isolated red blood cell membrane skeleton. *Biophysical Journal*, **1992**, 63, 784-93	2.9	150
105	Broken detailed balance at mesoscopic scales in active biological systems. *Science*, **2016**, 352, 604-7	33.3	150
104	Signals and noise in micromechanical measurements. *Methods in Cell Biology*, **1998**, 55, 129-56	1.8	145

103	Elastic response, buckling, and instability of microtubules under radial indentation. *Biophysical Journal*, **2006**, 91, 1521-31	2.9	143
102	Imaging Globular and Filamentous Proteins in Physiological Buffer Solutions with Tapping Mode Atomic Force Microscopy. *Langmuir*, **1995**, 11, 3529-3535	4	133
101	Moving into the cell: single-molecule studies of molecular motors in complex environments. *Nature Reviews Molecular Cell Biology*, **2011**, 12, 163-76	48.7	131
100	Active and Passive Microrheology in Equilibrium and Nonequilibrium Systems. *Macromolecules*, **2008**, 41, 7194-7202	5.5	125
99	Failure of viral shells. *Physical Review Letters*, **2006**, 97, 228101	7.4	122
98	Thermal noise limitations on micromechanical experiments. *European Biophysics Journal*, **1998**, 27, 75-81	1.9	119
97	Microtubule cross-linking triggers the directional motility of kinesin-5. *Journal of Cell Biology*, **2008**, 182, 421-8	7.3	113
96	High-frequency stress relaxation in semiflexible polymer solutions and networks. *Physical Review Letters*, **2006**, 96, 138307	7.4	113
95	Round versus flat: bone cell morphology, elasticity, and mechanosensing. *Journal of Biomechanics*, **2008**, 41, 1590-8	2.9	110
94	Structural and mechanical study of a self-assembling protein nanotube. *Nano Letters*, **2006**, 6, 616-21	11.5	103
93	Protein tracking and detection of protein motion using atomic force microscopy. *Biophysical Journal*, **1996**, 70, 2421-31	2.9	103
92	Existence of a flat phase in red cell membrane skeletons. *Science*, **1993**, 259, 952-5	33.3	100
91	The homotetrameric kinesin-5 KLP61F preferentially crosslinks microtubules into antiparallel orientations. *Current Biology*, **2008**, 18, 1860-4	6.3	99
90	Super-Resolution Optical Fluctuation Bio-Imaging with Dual-Color Carbon Nanodots. *Nano Letters*, **2016**, 16, 237-42	11.5	98
89	Combining optical trapping and single-molecule fluorescence spectroscopy: enhanced photobleaching of fluorophores. *Journal of Physical Chemistry B*, **2004**, 108, 6479-84	3.4	94
88	Non-Gaussian athermal fluctuations in active gels. *Soft Matter*, **2011**, 7, 3234	3.6	92
87	Allosteric inhibition of kinesin-5 modulates its processive directional motility. *Nature Chemical Biology*, **2006**, 2, 480-5	11.7	92
86	Directionality of individual kinesin-5 Cin8 motors is modulated by loop 8, ionic strength and microtubule geometry. *EMBO Journal*, **2011**, 30, 4942-54	13	77

85	Microtubule-driven multimerization recruits ase1p onto overlapping microtubules. *Current Biology*, **2008**, 18, 1713-7	6.3	76
84	Optical trapping near resonance absorption. *Applied Optics*, **2002**, 41, 2318-27	1.7	71
83	Microrheology of solutions of semiflexible biopolymer filaments using laser tweezers interferometry. *Physical Review E*, **2004**, 70, 021503	2.4	69
82	Working strokes by single molecules of the kinesin-related microtubule motor ncd. *Nature Cell Biology*, **2000**, 2, 724-9	23.4	69
81	High-resolution probing of cellular force transmission. *Physical Review Letters*, **2009**, 102, 168102	7.4	68
80	Optical trap stiffness in the presence and absence of spherical aberrations. *Applied Optics*, **2006**, 45, 1812-9	1.7	68
79	Active cellular materials. *Current Opinion in Cell Biology*, **2010**, 22, 29-35	9	67
78	Bio imaging of intracellular NO production in single bone cells after mechanical stimulation. *Journal of Bone and Mineral Research*, **2006**, 21, 1722-8	6.3	64
77	Fluctuation-dissipation theorem in an aging colloidal glass. *Physical Review Letters*, **2007**, 98, 108302	7.4	63
76	Leveraging single protein polymers to measure flexural rigidity. *Journal of Physical Chemistry B*, **2009**, 113, 3837-44	3.4	54
75	Kinesin-5 Kip1 is a bi-directional motor that stabilizes microtubules and tracks their plus-ends in vivo. *Journal of Cell Science*, **2013**, 126, 4147-59	5.3	47
74	Tau protein binding forms a 1 nm thick layer along protofilaments without affecting the radial elasticity of microtubules. *Journal of Structural Biology*, **2007**, 158, 282-92	3.4	47
73	Calibrating bead displacements in optical tweezers using acousto-optic deflectors. *Review of Scientific Instruments*, **2006**, 77, 013704	1.7	46
72	Extending the bandwidth of optical-tweezers interferometry. *Review of Scientific Instruments*, **2003**, 74, 3246-3249	1.7	45
71	Comparing Macrorheology and One- and Two-Point Microrheology in Wormlike Micelle Solutions. *Macromolecules*, **2005**, 38, 8840-8844	5.5	45
70	Short-time inertial response of viscoelastic fluids: observation of vortex propagation. *Physical Review Letters*, **2005**, 95, 208302	7.4	43
69	Broken Detailed Balance of Filament Dynamics in Active Networks. *Physical Review Letters*, **2016**, 116, 248301	7.4	42
68	Resolving the molecular structure of microtubules under physiological conditions with scanning force microscopy. *European Biophysics Journal*, **2004**, 33, 462-7	1.9	39

67	Intracellular and extracellular forces drive primary cilia movement. *Proceedings of the National Academy of Sciences of the United States of America*, **2015**, 112, 1410-5	11.5	38
66	Kinetics of symmetric and asymmetric phospholipid transfer between small sonicated vesicles studied by high-sensitivity differential scanning calorimetry, NMR, electron microscopy, and dynamic light scattering. *Biochemistry*, **1988**, 27, 6078-6085	3.2	38
65	Discrete fracture patterns of virus shells reveal mechanical building blocks. *Proceedings of the National Academy of Sciences of the United States of America*, **2011**, 108, 12611-6	11.5	37
64	Imaging microtubules and kinesin decorated microtubules using tapping mode atomic force microscopy in fluids. *European Biophysics Journal*, **2000**, 28, 611-20	1.9	36
63	The mechanical properties of early Drosophila embryos measured by high-speed video microrheology. *Biophysical Journal*, **2015**, 108, 1899-907	2.9	35
62	Power spectrum analysis for optical tweezers. II: Laser wavelength dependence of parasitic filtering, and how to achieve high bandwidth. *Review of Scientific Instruments*, **2006**, 77, 063106	1.7	34
61	Load-dependent release limits the processive stepping of the tetrameric Eg5 motor. *European Biophysics Journal*, **2007**, 36, 675-81	1.9	33
60	Feedback-tracking microrheology in living cells. *Science Advances*, **2017**, 3, e1700318	14.3	32
59	Self-organized stress patterns drive state transitions in actin cortices. *Science Advances*, **2018**, 4, eaar2847	14.3	30
58	Swelling and softening of the cowpea chlorotic mottle virus in response to pH shifts. *Biophysical Journal*, **2015**, 108, 2541-2549	2.9	30
57	Kinesin walks the line: single motors observed by atomic force microscopy. *Biophysical Journal*, **2011**, 100, 2450-6	2.9	28
56	Highly processive motility is not a general feature of the kinesins. *European Biophysics Journal*, **1998**, 27, 353-60	1.9	27
55	Elasticity of 3D networks with rigid filaments and compliant crosslinks. *Soft Matter*, **2015**, 11, 343-54	3.6	23
54	Force fluctuations in three-dimensional suspended fibroblasts. *Philosophical Transactions of the Royal Society B: Biological Sciences*, **2015**, 370, 20140028	5.8	22
53	Viscoelastic response of a model endothelial glycocalyx. *Physical Biology*, **2009**, 6, 025014	3	22
52	Microrheology of hyaluronan solutions: implications for the endothelial glycocalyx. *Biomacromolecules*, **2008**, 9, 2390-8	6.9	22
51	Neck-linker length dependence of processive Kinesin-5 motility. *Journal of Molecular Biology*, **2012**, 423, 159-68	6.5	21
50	Regulation of bi-directional movement of single kinesin-5 Cin8 molecules. *Bioarchitecture*, **2012**, 2, 70-74		21

49	The effect of monastrol on the processive motility of a dimeric kinesin-5 head/kinesin-1 stalk chimera. *Journal of Molecular Biology*, **2010**, 399, 1-8	6.5	20
48	High-resolution microrheology in the pericellular matrix of prostate cancer cells. *Journal of the Royal Society Interface*, **2012**, 9, 1733-44	4.1	20
47	Effective temperatures from the fluctuation-dissipation measurements in soft glassy materials. *Europhysics Letters*, **2008**, 84, 20006	1.6	20
46	Single-Walled Carbon Nanotubes Probed with Insulator-Based Dielectrophoresis. *Analytical Chemistry*, **2017**, 89, 13235-13244	7.8	18
45	Phosphorylation of FEZ1 by Microtubule Affinity Regulating Kinases regulates its function in presynaptic protein trafficking. *Scientific Reports*, **2016**, 6, 26965	4.9	18
44	Scale-Dependent Nonaffine Elasticity of Semiflexible Polymer Networks. *Physical Review Letters*, **2014**, 112,	7.4	17
43	Deletion of the Tail Domain of the Kinesin-5 Cin8 Affects Its Directionality. *Journal of Biological Chemistry*, **2015**, 290, 16841-50	5.4	16
42	The natural diterpene tonantzitlolone A and its synthetic enantiomer inhibit cell proliferation and kinesin-5 function. *European Journal of Medicinal Chemistry*, **2016**, 112, 164-170	6.8	16
41	High-bandwidth one-and two-particle microrheology in solutions of wormlike micelles. *Rheologica Acta*, **2006**, 45, 449-456	2.3	15
40	A symmetrical method to obtain shear moduli from microrheology. *Soft Matter*, **2018**, 14, 3716-3723	3.6	14
39	A chimeric kinesin-1 head/kinesin-5 tail motor switches between diffusive and processive motility. *Biophysical Journal*, **2013**, 104, 432-41	2.9	14
38	Drebrin-like protein DBN-1 is a sarcomere component that stabilizes actin filaments during muscle contraction. *Nature Communications*, **2015**, 6, 7523	17.4	13
37	Endoplasmic reticulum sorting and kinesin-1 command the targeting of axonal GABAB receptors. *PLoS ONE*, **2012**, 7, e44168	3.7	13
36	Biochemistry. Friction in motor proteins. *Science*, **2009**, 325, 826-7	33.3	12
35	Combined macro- and microrheometer for use with Langmuir monolayers. *Review of Scientific Instruments*, **2008**, 79, 063905	1.7	11
34	Observation of microtubules with scanning force microscopy in liquid. *Nanotechnology*, **2003**, 14, 143-146	3.4	11
33	Molecular force sensors to measure stress in cells. *Journal Physics D: Applied Physics*, **2017**, 50, 233001	3	10
32	Bidirectional power stroke by ncd kinesin. *Biophysical Journal*, **2010**, 99, 3905-15	2.9	10

31	Cooperative behavior of molecular motors. *Journal of Muscle Research and Cell Motility*, **2002**, 23, 71-9	3.5	10
30	Microporous device for local electric recordings on model lipid bilayers. *Journal Physics D: Applied Physics*, **2015**, 48, 025401	3	7
29	Physical probing of cells. *Journal Physics D: Applied Physics*, **2017**, 50, 463001	3	6
28	Chromophore-Independent Roles of Opsin Apoproteins in Drosophila Mechanoreceptors. *Current Biology*, **2019**, 29, 2961-2969.e4	6.3	6
27	Mechanical Properties of a Drosophila Larval Chordotonal Organ. *Biophysical Journal*, **2017**, 113, 2796-2804	3.7	6
26	Differential interference contrast microscopy using light-emitting diode illumination in conjunction with dual optical traps. *Review of Scientific Instruments*, **2013**, 84, 053703	1.7	6
25	Microscopic approaches to dynamics and structure of biological motors. *Current Opinion in Solid State and Materials Science*, **1996**, 1, 412-424	12	6
24	Microfluidic device for chemical and mechanical manipulation of suspended cells. *Journal Physics D: Applied Physics*, **2018**, 51, 045403	3	4
23	Topology Counts: Force Distributions in Circular Spring Networks. *Physical Review Letters*, **2018**, 120, 068001	7.4	3
22	Swelling and Softening of the CCMV Plant Virus Capsid in Response to pH Shifts. *Biophysical Journal*, **2010**, 98, 656a	2.9	3
21	Experimental measurements of intracellular mechanics **2001**, 18-49		3
20	Sulfo-SMCC Prevents Annealing of Taxol-Stabilized Microtubules In Vitro. *PLoS ONE*, **2016**, 11, e0161623	3.7	3
19	Designing deoxidation inhibiting encapsulation of metal oxide nanostructures for fluidic and biological applications. *Applied Surface Science*, **2016**, 390, 924-928	6.7	3
18	Carbon Dots for Studying Muscle Architecture. *ACS Applied Nano Materials*, **2019**, 2, 7466-7472	5.6	3
17	Dissociation kinetics of the GroEL-gp31 chaperonin complex studied with Förster resonance energy transfer. *Biochemistry*, **2009**, 48, 11692-8	3.2	2
16	Micromechanics of Molecular Motors: Experiments and Theory **2004**, 151-176		2
15	Parasitic filtering in position detection systems for optical tweezers **2004**,		2
14	A surprising twist. *ELife*, **2014**, 3, e02715	8.9	1

13	Multiscale Microrheology Using Fluctuating Filaments as Stealth Probes. *Physical Review Letters*, **2021**, 127, 158001	7.4	1
12	Length-Selective Dielectrophoretic Manipulation of Single-Walled Carbon Nanotubes. *Analytical Chemistry*, **2020**, 92, 8901-8908	7.8	1
11	Drebrin-like protein regulates body bending of C. elegans via suppression of NCA cation leak channels		1
10	Rapid local compression in active gels is caused by nonlinear network response. *Soft Matter*, **2020**, 16, 9369-9382	3.6	1
9	Mapping Activity-Dependent Quasi-stationary States of Mitochondrial Membranes with Graphene-Induced Energy Transfer Imaging. *Nano Letters*, **2021**, 21, 8244-8249	11.5	0
8	Topology determines force distributions in one-dimensional random spring networks. *Physical Review E*, **2018**, 97, 022306	2.4	
7	Game of Zones: how actin-binding proteins organize muscle contraction. *Worm*, **2016**, 5, e1161880		
6	One- and Two-Particle Microrheology in Entangled Solutions of fd Virus. *Materials Research Society Symposia Proceedings*, **2001**, 711, 1		
5	Molecular Mechanics of Cytoskeletal Components **2005**, 355-364		
4	Microrheological assessment of the viscoelastic properties of the endothelial glycocalyx in cremasteric capillaries of living mice. *FASEB Journal*, **2006**, 20, LB16	0.9	
3	The dynamics of the GroEL-gp31 chaperonin complex studied with fluorescence spectroscopy. *FASEB Journal*, **2008**, 22, 1001.5	0.9	
2	Unravelling the chaperonin-assisted folding of the bacteriophage T4 major capsid protein. *FASEB Journal*, **2009**, 23, LB214	0.9	
1	Reply to the VComment on "A symmetrical method to obtain shear moduli from microrheology"Vby M. Tassieri, Soft Matter, 2018, 14, DOI. *Soft Matter*, **2018**, 14, 8671-8672	3.6	