Stefan Diez

List of Publications by Year
in descending order

149 papers	7,544 citations	57758 44 h-index	64796 79 g-index
163 all docs	163 docs citations	163 times ranked	5831 citing authors

#	Article	IF	Citations
1	The depolymerizing kinesin MCAK uses lattice diffusion to rapidly target microtubule ends. Nature, 2006, 441, 115-119.	27.8	408
2	The Kinesin-Related Protein MCAK Is a Microtubule Depolymerase that Forms an ATP-Hydrolyzing Complex at Microtubule Ends. Molecular Cell, 2003, 11, 445-457.	9.7	332
3	Tracking Single Particles and Elongated Filaments with Nanometer Precision. Biophysical Journal, 2011, 100, 2820-2828.	0.5	283
4	Local Nucleation of Microtubule Bundles through Tubulin Concentration into a Condensed Tau Phase. Cell Reports, 2017, 20, 2304-2312.	6.4	278
5	Kinesin-8 Motors Act Cooperatively to Mediate Length-Dependent Microtubule Depolymerization. Cell, 2009, 138, 1174-1183.	28.9	263
6	Dynamic Actin Patterns and Arp2/3 Assembly at the Substrate-Attached Surface of Motile Cells. Current Biology, 2004, 14, 1-10.	3.9	256
7	Microtubule Dynamics Reconstituted In Vitro and Imaged by Single-Molecule Fluorescence Microscopy. Methods in Cell Biology, 2010, 95, 221-245.	1.1	239
8	The mitotic kinesin-14 Ncd drives directional microtubuleâ€“microtubule sliding. Nature Cell Biology, 2009, 11, 717-723.	10.3	204
9	Molecular crowding creates traffic jams of kinesin motors on microtubules. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 6100-6105.	7.1	186
10	Mobile Actin Clusters and Traveling Waves in Cells Recovering from Actin Depolymerization. Biophysical Journal, 2004, 87, 3493-3503.	0.5	179
11	Stretching and Transporting DNA Molecules Using Motor Proteins. Nano Letters, 2003, 3, 1251-1254.	9.1	161
12	Four-wave mixing in semiconductor optical amplifiers for frequency conversion and fast optical switching. IEEE Journal of Selected Topics in Quantum Electronics, 1997, 3, 1131-1145.	2.9	152
13	Diffusible Crosslinkers Generate Directed Forces in Microtubule Networks. Cell, 2015, 160, 1159-1168.	28.9	136
14	Detection of fractional steps in cargo movement by the collective operation of kinesin-1 motors. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 10847-10852.	7.1	132
15	Toward Self-Assembled Plasmonic Devices: High-Yield Arrangement of Gold Nanoparticles on DNA Origami Templates. ACS Nano, 2016, 10, 5374-5382.	14.6	128
16	Reversible Switching of Microtubule Motility Using Thermoresponsive Polymer Surfaces. Nano Letters, 2006, 6, 1982-1987.	9.1	123
17	Towards the application of cytoskeletal motor proteins in molecular detection and diagnostic devices. Current Opinion in Biotechnology, 2010, 21, 477-488.	6.6	122
18	The distance that kinesin-1 holds its cargo from the microtubule surface measured by fluorescence interference contrast microscopy. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 15812-15817.	7.1	121

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19	Parallel computation with molecular-motor-propelled agents in nanofabricated networks. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 2591-2596.	7.1	116
20	Kinetically distinct phases of tau on microtubules regulate kinesin motors and severing enzymes. Nature Cell Biology, 2019, 21, 1086-1092.	10.3	113
21	Synthetic biology of minimal systems. Critical Reviews in Biochemistry and Molecular Biology, 2009, 44, 223-242.	5.2	111
22	Quantum-dot-assisted characterization of microtubule rotations during cargo transport. Nature Nanotechnology, 2008, 3, 552-556.	31.5	106
23	Subsecond reorganization of the actin network in cell motility and chemotaxis. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 7601-7606.	7.1	104
24	Adaptive braking by Ase1 prevents overlapping microtubules from sliding completely apart. Nature Cell Biology, 2011, 13, 1259-1264.	10.3	104
25	Fast and Spatially Resolved Environmental Probing Using Stimuli-Responsive Polymer Layers and Fluorescent Nanocrystals. Advanced Materials, 2006, 18, 1453-1457.	21.0	99
26	High Rectifying Efficiencies of Microtubule Motility on Kinesin-Coated Gold Nanostructures. Nano Letters, 2005, 5, 1117-1122.	9.1	90
27	Tubulin Acetylation Alone Does Not Affect Kinesin-1 Velocity and Run Length In Vitro. PLoS ONE, 2012, 7, e42218.	2.5	83
28	Gain-transparent SOA-switch for high-bitrate OTDM add/drop multiplexing. IEEE Photonics Technology Letters, 1999, 11, 60-62.	2.5	76
29	Environment-Friendly Photolithography Using Poly(<i>N</i>-isopropylacrylamide)-Based Thermoresponsive Photoresists. Journal of the American Chemical Society, 2009, 131, 13315-13319.	13.7	73
30	Transport efficiency of membrane-anchored kinesin-1 motors depends on motor density and diffusivity. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, E7185-E7193.	7.1	69
31	160-Gb/s optical sampling by gain-transparent four-wave mixing in a semiconductor optical amplifier. IEEE Photonics Technology Letters, 1999, 11, 1402-1404.	2.5	68
32	Setting up roadblocks for kinesin-1: mechanism for the selective speed control of cargo carrying microtubules. Lab on A Chip, 2008, 8, 1441.	6.0	67
33	Comparison of interferometric all-optical switches for demultiplexing applications in high-speed OTDM systems. Journal of Lightwave Technology, 2002, 20, 618-624.	4.6	65
34	Size Sorting of Protein Assemblies Using Polymeric Gradient Surfaces. Nano Letters, 2005, 5, 1910-1914.	9.1	65
35	Parallel Manipulation of Bifunctional DNA Molecules on Structured Surfaces Using Kinesin-Driven Microtubules. Small, 2006, 2, 1090-1098.	10.0	65
36	Mitochondria-adaptor TRAK1 promotes kinesin-1 driven transport in crowded environments. Nature Communications, 2020, 11, 3123.	12.8	60

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37	The Highly Processive Kinesin-8, Kip3, Switches Microtubule Protofilaments with a Bias toward the Left. Biophysical Journal, 2012, 103, L4-L6.	0.5	59
38	Kinesin-1 Motors Can Circumvent Permanent Roadblocks by Side-Shifting to Neighboring Protofilaments. Biophysical Journal, 2015, 108, 2249-2257.	0.5	59
39	Propagating waves separate two states of actin organization in living cells. HFSP Journal, 2009, 3, 412-427.	2.5	57
40	Electrical Docking of Microtubules for Kinesin-Driven Motility in Nanostructures. Nano Letters, 2005, 5, 235-241.	9.1	55
41	160-Gb/s all-optical demultiplexing using a gain-transparent ultrafast-nonlinear interferometer (GT-UNI). IEEE Photonics Technology Letters, 2001, 13, 475-477.	2.5	54
42	Noise analysis of frequency converters utilizing semiconductor-laser amplifiers. IEEE Journal of Quantum Electronics, 1997, 33, 81-88.	1.9	52
43	All-optical switch for TDM and WDM/TDM systems demonstrated in a 640 Gbit/s demultiplexing experiment. Electronics Letters, 1998, 34, 803.	1.0	50
44	Time-domain modeling of semiconductor optical amplifiers for OTDM applications. Journal of Lightwave Technology, 1999, 17, 2577-2583.	4.6	50
45	Biotemplated Nanopatterning of Planar Surfaces with Molecular Motors. Nano Letters, 2006, 6, 2177-2183.	9.1	50
46	The microscopy cell (MicCell), a versatile modular flowthrough system for cell biology, biomaterial research, and nanotechnology. Microfluidics and Nanofluidics, 2006, 2, 21-36.	2.2	50
47	Studying Kinesin Motors by Optical 3D-Nanometry in Gliding Motility Assays. Methods in Cell Biology, 2010, 95, 247-271.	1.1	47
48	Changes in microtubule overlap length regulate kinesin-14-driven microtubule sliding. Nature Chemical Biology, 2017, 13, 1245-1252.	8.0	47
49	Axial Nanometer Distances Measured by Fluorescence Lifetime Imaging Microscopy. Nano Letters, 2010, 10, 1497-1500.	9.1	46
50	Temperatureâ€Induced Sizeâ€Control of Bioactive Surface Patterns. Advanced Functional Materials, 2008, 18, 1501-1508.	14.9	44
51	Heavy Meromyosin Molecules Extending More Than 50 nm above Adsorbing Electronegative Surfaces. Langmuir, 2010, 26, 9927-9936.	3.5	43
52	Entropic forces drive contraction of cytoskeletal networks. BioEssays, 2016, 38, 474-481.	2.5	42
53	Simple and Fast Method for the Fabrication of Switchable Bicomponent Micropatterned Polymer Surfaces. Langmuir, 2007, 23, 5205-5209.	3.5	41
54	Directionally biased sidestepping of Kip3/kinesin-8 is regulated by ATP waiting time and motorâ€"microtubule interaction strength. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, E7950-E7959.	7.1	41

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55	3D Nanometer Tracking of Motile Microtubules on Reflective Surfaces. Small, 2009, 5, 1732-1737.	10.0	39
56	Protein-Resistant Polymer Coatings Based on Surface-Adsorbed Poly(aminoethyl) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 702 Td (methacr	5.4	39
57	Dynamic Guiding of Motor-Driven Microtubules on Electrically Heated, Smart Polymer Tracks. Nano Letters, 2013, 13, 3434-3438.	9.1	39
58	40 Gbit/s transmission over 434 km standard fibre using polarisation independent mid-span spectral inversion. Electronics Letters, 1998, 34, 2044.	1.0	38
59	TIRF microscopy evanescent field calibration using tilted fluorescent microtubules. Journal of Microscopy, 2009, 234, 38-46.	1.8	38
60	Unrepeatered 160 Gbit/s RZ single-channel transmission over 160 km of standard fibre at 1.55 [micro sign]m with hybrid MZI optical demultiplexer. Electronics Letters, 2000, 36, 1405.	1.0	36
61	160 Gbit/s all-optical demultiplexer using hybrid gain-transparent SOA Mach-Zehnder interferometer. Electronics Letters, 2000, 36, 1484.	1.0	34
62	Collective Behavior of Antagonistically Acting Kinesin-1 Motors. Physical Review Letters, 2010, 105, 128103.	7.8	34
63	Small Crowders Slow Down Kinesin-1 Stepping by Hindering Motor Domain Diffusion. Physical Review Letters, 2015, 115, 218102.	7.8	34
64	BIOLOGISTICS AND THE STRUGGLE FOR EFFICIENCY: CONCEPTS AND PERSPECTIVES. International Journal of Modeling, Simulation, and Scientific Computing, 2009, 12, 533-548.	1.4	33
65	The non-processive rice kinesin-14 OsKCH1 transports actin filaments along microtubules with two distinct velocities. Nature Plants, 2015, 1, 15111.	9.3	33
66	Working stroke of the kinesin-14, ncd, comprises two substeps of different direction. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, E6582-E6589.	7.1	32
67	Gain dispersion and saturation effects in four-wave mixing in semiconductor laser amplifiers. IEEE Journal of Quantum Electronics, 1996, 32, 712-720.	1.9	31
68	Kinesin-1 Expressed in Insect Cells Improves Microtubule in Vitro Gliding Performance, Long-Term Stability and Guiding Efficiency in Nanostructures. IEEE Transactions on Nanobioscience, 2016, 15, 62-69.	3.3	31
69	Sample solution constraints on motor-driven diagnostic nanodevices. Lab on A Chip, 2013, 13, 866.	6.0	29
70	Label-Free Detection of Microvesicles and Proteins by the Bundling of Gliding Microtubules. Nano Letters, 2018, 18, 117-123.	9.1	29
71	Longâ€Range Transport of Giant Vesicles along Microtubule Networks. ChemPhysChem, 2012, 13, 1001-1006.	2.1	28
72	Multimotor Transport in a System of Active and Inactive Kinesin-1 Motors. Biophysical Journal, 2014, 107, 365-372.	0.5	28

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73	Fluorescence Imaging of Single Kinesin Motors on Immobilized Microtubules. Methods in Molecular Biology, 2011, 783, 121-137.	0.9	27
74	Anillin propels myosin-independent constriction of actin rings. Nature Communications, 2021, 12, 4595.	12.8	26
75	Noise characteristics of semiconductor-optical amplifiers used for wavelength conversion via cross-gain and cross-phase modulation. IEEE Photonics Technology Letters, 1997, 9, 312-314.	2.5	25
76	Biotemplated synthesis of stimuli-responsive nanopatterned polymer brushes on microtubules. Soft Matter, 2009, 5, 67-71.	2.7	25
77	Selective Control of Gliding Microtubule Populations. Nano Letters, 2012, 12, 348-353.	9.1	25
78	Kinesin-14 motors drive a right-handed helical motion of antiparallel microtubules around each other. Nature Communications, 2020, 11, 2565.	12.8	25
79	The human kinesinâ€14 HSET tracks the tips of growing microtubules in vitro. Cytoskeleton, 2013, 70, 515-521.	2.0	24
80	Assembled capsules transportation driven by motor proteins. Biochemical and Biophysical Research Communications, 2009, 379, 175-178.	2.1	23
81	Challenges in Estimating the Motility Parameters of Single Processive Motor Proteins. Biophysical Journal, 2017, 113, 2433-2443.	0.5	23
82	Diffusive tail anchorage determines velocity and force produced by kinesin-14 between crosslinked microtubules. Nature Communications, 2018, 9, 2214.	12.8	22
83	Measuring Microtubule Supertwist and Defects by Three-Dimensional-Force-Clamp Tracking of Single Kinesin-1 Motors. Nano Letters, 2018, 18, 1290-1295.	9.1	21
84	Multivalent electrostatic microtubule interactions of synthetic peptides are sufficient to mimic advanced MAP-like behavior. Molecular Biology of the Cell, 2019, 30, 2953-2968.	2.1	21
85	80-Gb/s transmission over 106-km standard-fiber using optical phase conjugation in a Sagnac-interferometer. IEEE Photonics Technology Letters, 1999, 11, 1063-1065.	2.5	20
86	Optimization of Isopolar Microtubule Arrays. Langmuir, 2013, 29, 2265-2272.	3.5	20
87	Highly-Efficient Guiding of Motile Microtubules on Non-Topographical Motor Patterns. Nano Letters, 2017, 17, 5699-5705.	9.1	20
88	Optimization of SOA-based Sagnac-interferometer switches for demultiplexing to 10 and 40 Gb/s. Optics Communications, 2001, 189, 241-249.	2.1	19
89	Programmable Patterning of Protein Bioactivity by Visible Light. Nano Letters, 2014, 14, 4050-4057.	9.1	19
90	Cellular Motors for Molecular Manufacturing. Anatomical Record, 2007, 290, 1203-1212.	1.4	18

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91	Comparison of actin- and microtubule-based motility systems for application in functional nanodevices. New Journal of Physics, 2021, 23, 075007.	2.9	18
92	Using a quartz paraboloid for versatile wide-field TIR microscopy with sub-nanometer localization accuracy. Optics Express, 2013, 21, 3523.	3.4	17
93	Simultaneous sampling of optical pulse intensities and wavelengths by four-wave mixing in a semiconductor optical amplifier. Applied Physics Letters, 1998, 73, 3821-3823.	3.3	16
94	Analysis of switching windows in a gain-transparent-SLALOM configuration. Journal of Lightwave Technology, 2000, 18, 2188-2195.	4.6	16
95	Tetrazineâ€“<i>trans</i>-cyclooctene Mediated Conjugation of Antibodies to Microtubules Facilitates Subpicomolar Protein Detection. Bioconjugate Chemistry, 2017, 28, 918-922.	3.6	16
96	Parallel mapping of optical near-field interactions by molecular motor-driven quantum dots. Nature Nanotechnology, 2018, 13, 691-695.	31.5	16
97	Analytical theory of terahertz fourâ€wave mixing in semiconductorâ€laser amplifiers. Applied Physics Letters, 1996, 68, 2787-2789.	3.3	15
98	Limited Resources Induce Bistability in Microtubule Length Regulation. Physical Review Letters, 2018, 120, 148101.	7.8	15
99	Intrinsically Disordered Domain of Kinesin-3 Kif14 Enables Unique Functional Diversity. Current Biology, 2020, 30, 3342-3351.e5.	3.9	15
100	Impact-Free Measurement of Microtubule Rotations on Kinesin and Cytoplasmic-Dynein Coated Surfaces. PLoS ONE, 2015, 10, e0136920.	2.5	15
101	Four-wave mixing in semiconductor laser amplifiers: Applications for optical communication systems. Fiber and Integrated Optics, 1996, 15, 211-223.	2.5	14
102	Stable tug-of-war between kinesin-1 and cytoplasmic dynein upon different ATP and roadblock concentrations. Journal of Cell Science, 2020, 133, .	2.0	14
103	Regeneration of Assembled, Molecular-Motor-Based Bionanodevices. Nano Letters, 2019, 19, 7155-7163.	9.1	13
104	Controlled Retention and Release of Biomolecular Transport Systems Using Shapeâ€Changing Polymer Bilayers. Angewandte Chemie - International Edition, 2016, 55, 16106-16109.	13.8	12
105	Kinesin-1 motors can increase the lifetime of taxol-stabilized microtubules. Nature Nanotechnology, 2016, 11, 914-915.	31.5	12
106	A Brownian Ratchet Model Explains the Biased Sidestepping of Single-Headed Kinesin-3 KIF1A. Biophysical Journal, 2019, 116, 2266-2274.	0.5	11
107	Biomolecular Motors Operating in Engineered Environments. , 2005, , 185-199.		10
108	Sampling pulses with semiconductor optical amplifiers. IEEE Journal of Quantum Electronics, 2001, 37, 118-126.	1.9	9

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109	Activation of mammalian cytoplasmic dynein in multi-motor motility assays. Journal of Cell Science, 2018, 132, .	2.0	9
110	Physical requirements for scaling up network-based biocomputation. New Journal of Physics, 2021, 23, 105004.	2.9	9
111	Molecular motor-driven filament transport across three-dimensional, polymeric micro-junctions. New Journal of Physics, 2021, 23, 125002.	2.9	9
112	Control and gating of kinesin-microtubule motility on electrically heated thermo-chips. Biomedical Microdevices, 2014, 16, 459-63.	2.8	8
113	An automated<i>in vitro</i>motility assay for high-throughput studies of molecular motors. Lab on A Chip, 2018, 18, 3196-3206.	6.0	8
114	Fabrication of High Aspect Ratio Gold Nanowires within the Microtubule Lumen. Nano Letters, 2022, 22, 3659-3667.	9.1	8
115	Highlyâ€Parallel Microfluidicsâ€Based Force Spectroscopy on Single Cytoskeletal Motors. Small, 2021, 17, e2007388.	10.0	7
116	Design of network-based biocomputation circuits for the exact cover problem. New Journal of Physics, 2021, 23, 085004.	2.9	7
117	Unrepeatered 80 Gbit/s RZ single channel transmission over 160 km of standard fibre at 1.55 [micro sign]m with large wavelength tolerance. Electronics Letters, 2000, 36, 561.	1.0	6
118	Roadmap for network-based biocomputation. Nano Futures, 2022, 6, 032002.	2.2	6
119	A staggering giant. Nature, 2012, 482, 44-45.	27.8	5
120	Cytoskeletal organization through multivalent interactions. Journal of Cell Science, 2020, 133, .	2.0	5
121	Bit rate and pulse width dependence of four-wave mixing of short optical pulses in semiconductor optical amplifiers. Optics Letters, 1999, 24, 1675.	3.3	4
122	Molecular Motors: Single-Molecule Recordings Made Easy. Current Biology, 2002, 12, R203-R205.	3.9	4
123	Multi-talented MCAK: Microtubule depolymerizer with a strong grip. Nature Cell Biology, 2011, 13, 738-740.	10.3	4
124	Multiplication of Motor-Driven Microtubules for Nanotechnological Applications. Nano Letters, 2022, 22, 926-934.	9.1	4
125	Solving Exact Cover Instances with Molecular-Motor-Powered Network-Based Biocomputation. ACS Nanoscience Au, 2022, 2, 396-403.	4.8	4
126	Ultrafast optical signal processing using semiconductor laser amplifiers. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 1996, 354, 733-744.	3.4	3

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127	<title>High-density disc storage by multiplexed microholograms</title>. , 1997, 3109, 239.		3
128	Myosin shifts into reverse gear. Nature Nanotechnology, 2012, 7, 213-214.	31.5	3
129	Reply to Einarsson: The computational power of parallel network exploration with many bioagents. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, E3188.	7.1	3
130	Photorefractive coupling of semiconductor laser amplifiers for 1.3 [micro sign]m wavelength. Electronics Letters, 1997, 33, 721.	1.0	2
131	160 Gbit/s optical sampling by a novel ultra-broadband switch based on four-wave mixing in a semiconductor optical amplifier. , 0, , .		2
132	Controlled Retention and Release of Biomolecular Transport Systems Using Shapeâ€Changing Polymer Bilayers. Angewandte Chemie, 2016, 128, 16340-16343.	2.0	2
133	Cell Biology: Kinesin-14 Backsteps to Organize Polymerizing Microtubules. Current Biology, 2016, 26, R1292-R1294.	3.9	2
134	Prospects for single-molecule electrostatic detection in molecular motor gliding motility assays. New Journal of Physics, 2021, 23, 065003.	2.9	2
135	Biomolecular motors challenge imaging and enable sensing. , 2008, , .		2
136	CENP-V is required for proper chromosome segregation through interaction with spindle microtubules in mouse oocytes. Nature Communications, 2021, 12, 6547.	12.8	2
137	Theoretische Chemie: Parallel rechnen mit biomolekularen Motoren. Nachrichten Aus Der Chemie, 2017, 65, 9-11.	0.0	1
138	The ALS-Associated FUS (P525L) Variant Does Not Directly Interfere with Microtubule-Dependent Kinesin-1 Motility. International Journal of Molecular Sciences, 2021, 22, 2422.	4.1	1
139	Optical sampling technique for fast electro-optic devices. Electronics Letters, 1998, 34, 1877.	1.0	1
140	Evaluation of Exponential Distributions Measured from Single Fluorescent Molecules. Biophysical Journal, 2013, 104, 323a.	0.5	0
141	Single Molecule Detection of Insulin Autoantibodies in Type 1 Diabetes. Biophysical Journal, 2014, 106, 416a.	0.5	0
142	Bimodality in a System of Active and Passive Kinesin-1 Motors. Biophysical Journal, 2014, 106, 443a.	0.5	0
143	Direct Measurement of the Pressure Generated by a 1D Protein Gas Confined within Microtubule Overlaps. Biophysical Journal, 2014, 106, 354a.	0.5	0
144	Measurements of Single Fluorescent Motor Proteins: The Right Way. Biophysical Journal, 2014, 106, 784a.	0.5	0

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145	The Rice Kinesin Oskch1 is a Dynamic Cross-Linker of Actin Filaments and Microtubules. Biophysical Journal, 2014, 106, 784a.	0.5	0
146	Transport by Kinesin-1 Motors Diffusing on a Lipid Bilayer. Biophysical Journal, 2016, 110, 458a.	0.5	0
147	High-Density Disc Storage by Multiplexed Microholograms. , 1998, , 329-331.		0
148	Characterization of Interferometric Switching Devices for Ultrafast All-Optical Signal Processing. Springer Series in Chemical Physics, 1998, , 182-184.	0.2	0
149	Local Nucleation of Microtubule Bundles Through Tubulin Concentration Into a Condensed Tau Phase. SSRN Electronic Journal, 0, , .	0.4	0