Stefan Jakobs

List of Publications by Citations

127 papers	13,039 citations	61 h-index	114 g-index
138 ext. papers	15,033 ext. citations	10.2 avg, IF	6.36 L-index

#	Paper	IF	Citations
127	Fluorescence microscopy with diffraction resolution barrier broken by stimulated emission. *Proceedings of the National Academy of Sciences of the United States of America*, **2000**, 97, 8206-10	11.5	1286
126	Breaking the diffraction barrier in fluorescence microscopy at low light intensities by using reversibly photoswitchable proteins. *Proceedings of the National Academy of Sciences of the United States of America*, **2005**, 102, 17565-9	11.5	632
125	Fluorescence nanoscopy by ground-state depletion and single-molecule return. *Nature Methods*, **2008**, 5, 943-5	21.6	628
124	Fluorescence nanoscopy in cell biology. *Nature Reviews Molecular Cell Biology*, **2017**, 18, 685-701	48.7	520
123	Super-resolution microscopy reveals that mammalian mitochondrial nucleoids have a uniform size and frequently contain a single copy of mtDNA. *Proceedings of the National Academy of Sciences of the United States of America*, **2011**, 108, 13534-9	11.5	360
122	Diffraction-unlimited all-optical imaging and writing with a photochromic GFP. *Nature*, **2011**, 478, 204-8	50.4	353
121	Spherical nanosized focal spot unravels the interior of cells. *Nature Methods*, **2008**, 5, 539-44	21.6	323
120	Nanoscale resolution in GFP-based microscopy. *Nature Methods*, **2006**, 3, 721-3	21.6	283
119	Photoswitchable fluorescent proteins enable monochromatic multilabel imaging and dual color fluorescence nanoscopy. *Nature Biotechnology*, **2008**, 26, 1035-40	44.5	251
118	Fast 100-nm resolution three-dimensional microscope reveals structural plasticity of mitochondria in live yeast. *Proceedings of the National Academy of Sciences of the United States of America*, **2002**, 99, 3370-5	11.5	241
117	Fluorescence nanoscopy in whole cells by asynchronous localization of photoswitching emitters. *Biophysical Journal*, **2007**, 93, 3285-90	2.9	227
116	Concepts for nanoscale resolution in fluorescence microscopy. *Current Opinion in Neurobiology*, **2004**, 14, 599-609	7.6	226
115	Structural basis for reversible photoswitching in Dronpa. *Proceedings of the National Academy of Sciences of the United States of America*, **2007**, 104, 13005-9	11.5	223
114	Structure and mechanism of the reversible photoswitch of a fluorescent protein. *Proceedings of the National Academy of Sciences of the United States of America*, **2005**, 102, 13070-4	11.5	222
113	A reversibly photoswitchable GFP-like protein with fluorescence excitation decoupled from switching. *Nature Biotechnology*, **2011**, 29, 942-7	44.5	217
112	The 2015 super-resolution microscopy roadmap. *Journal Physics D: Applied Physics*, **2015**, 48, 443001	3	211
111	Two-color far-field fluorescence nanoscopy. *Biophysical Journal*, **2007**, 92, L67-9	2.9	205

110	1.8 A bright-state structure of the reversibly switchable fluorescent protein Dronpa guides the generation of fast switching variants. *Biochemical Journal*, **2007**, 402, 35-42	3.8	203
109	Bax assembles into large ring-like structures remodeling the mitochondrial outer membrane in apoptosis. *EMBO Journal*, **2016**, 35, 402-13	13	195
108	Cross-strand binding of TFAM to a single mtDNA molecule forms the mitochondrial nucleoid. *Proceedings of the National Academy of Sciences of the United States of America*, **2015**, 112, 11288-93	11.5	193
107	Nanoscopy with more than 100,000 'doughnuts'. *Nature Methods*, **2013**, 10, 737-40	21.6	190
106	Recycling, clustering, and endocytosis jointly maintain PIN auxin carrier polarity at the plasma membrane. *Molecular Systems Biology*, **2011**, 7, 540	12.2	188
105	Uniform nomenclature for the mitochondrial contact site and cristae organizing system. *Journal of Cell Biology*, **2014**, 204, 1083-6	7.3	177
104	Rcf1 mediates cytochrome oxidase assembly and respirasome formation, revealing heterogeneity of the enzyme complex. *Cell Metabolism*, **2012**, 15, 336-47	24.6	165
103	rsEGFP2 enables fast RESOLFT nanoscopy of living cells. *ELife*, **2012**, 1, e00248	8.9	155
102	Multicolor fluorescence nanoscopy in fixed and living cells by exciting conventional fluorophores with a single wavelength. *Biophysical Journal*, **2010**, 99, 2686-94	2.9	149
101	Imaging and writing at the nanoscale with focused visible light through saturable optical transitions. *Applied Physics A: Materials Science and Processing*, **2003**, 77, 859-860	2.6	145
100	MINOS1 is a conserved component of mitofilin complexes and required for mitochondrial function and cristae organization. *Molecular Biology of the Cell*, **2012**, 23, 247-57	3.5	141
99	EFGP and DsRed expressing cultures of Escherichia coli imaged by confocal, two-photon and fluorescence lifetime microscopy. *FEBS Letters*, **2000**, 479, 131-5	3.8	136
98	Two-color far-field fluorescence nanoscopy based on photoswitchable emitters. *Applied Physics B: Lasers and Optics*, **2007**, 88, 161-165	1.9	133
97	STED super-resolution microscopy reveals an array of MINOS clusters along human mitochondria. *Proceedings of the National Academy of Sciences of the United States of America*, **2013**, 110, 8936-41	11.5	132
96	Rhodamines NN: a novel class of caged fluorescent dyes. *Angewandte Chemie - International Edition*, **2010**, 49, 3520-3	16.4	132
95	Generation of monomeric reversibly switchable red fluorescent proteins for far-field fluorescence nanoscopy. *Biophysical Journal*, **2008**, 95, 2989-97	2.9	126
94	Immunofluorescence stimulated emission depletion microscopy. *Nature Biotechnology*, **2003**, 21, 1303-4	44.5	126
93	Mitochondrial cristae revealed with focused light. *Nano Letters*, **2009**, 9, 2508-10	11.5	119

92	Short tetracysteine tags to beta-tubulin demonstrate the significance of small labels for live cell imaging. *Molecular Biology of the Cell*, **2004**, 15, 5616-22	3.5	115
91	Stimulated emission depletion nanoscopy of living cells using SNAP-tag fusion proteins. *Biophysical Journal*, **2010**, 98, 158-63	2.9	113
90	CRISPR/Cas9-mediated endogenous protein tagging for RESOLFT super-resolution microscopy of living human cells. *Scientific Reports*, **2015**, 5, 9592	4.9	108
89	Nanoscopy of living brain slices with low light levels. *Neuron*, **2012**, 75, 992-1000	13.9	106
88	Live-cell multiplane three-dimensional super-resolution optical fluctuation imaging. *Nature Communications*, **2014**, 5, 5830	17.4	105
87	The inner membrane protein Mdm33 controls mitochondrial morphology in yeast. *Journal of Cell Biology*, **2003**, 160, 553-64	7.3	101
86	Nanoscale distribution of mitochondrial import receptor Tom20 is adjusted to cellular conditions and exhibits an inner-cellular gradient. *Proceedings of the National Academy of Sciences of the United States of America*, **2011**, 108, 13546-51	11.5	100
85	Chromophore twisting in the excited state of a photoswitchable fluorescent protein captured by time-resolved serial femtosecond crystallography. *Nature Chemistry*, **2018**, 10, 31-37	17.6	99
84	High resolution imaging of live mitochondria. *Biochimica Et Biophysica Acta - Molecular Cell Research* , **2006**, 1763, 561-75	4.9	99
83	Wide-field subdiffraction RESOLFT microscopy using fluorescent protein photoswitching. *Microscopy Research and Technique*, **2007**, 70, 269-80	2.8	95
82	Cooperative 4Pi excitation and detection yields sevenfold sharper optical sections in live-cell microscopy. *Biophysical Journal*, **2004**, 87, 4146-52	2.9	94
81	Mic10 oligomerizes to bend mitochondrial inner membranes at cristae junctions. *Cell Metabolism*, **2015**, 21, 756-63	24.6	93
80	Differential protein distributions define two sub-compartments of the mitochondrial inner membrane in yeast. *FEBS Letters*, **2006**, 580, 5628-34	3.8	92
79	Cyclin-dependent kinase 5 is an upstream regulator of mitochondrial fission during neuronal apoptosis. *Cell Death and Differentiation*, **2007**, 14, 651-61	12.7	91
78	Two-color STED microscopy reveals different degrees of colocalization between hexokinase-I and the three human VDAC isoforms. *PMC Biophysics*, **2010**, 3, 4		90
77	The class V myosin motor protein, Myo2, plays a major role in mitochondrial motility in Saccharomyces cerevisiae. *Journal of Cell Biology*, **2008**, 181, 119-30	7.3	90
76	Mdm31 and Mdm32 are inner membrane proteins required for maintenance of mitochondrial shape and stability of mitochondrial DNA nucleoids in yeast. *Journal of Cell Biology*, **2005**, 168, 103-15	7.3	88
75	Spatial and temporal dynamics of budding yeast mitochondria lacking the division component Fis1p. *Journal of Cell Science*, **2003**, 116, 2005-14	5.3	82

74	Super-resolution microscopy of mitochondria. *Current Opinion in Chemical Biology*, **2014**, 20, 9-15	9.7	81
73	New fluorinated rhodamines for optical microscopy and nanoscopy. *Chemistry - A European Journal*, **2010**, 16, 4477-88	4.8	77
72	Live-cell STED nanoscopy of mitochondrial cristae. *Scientific Reports*, **2019**, 9, 12419	4.9	75
71	SNAP-, CLIP- and Halo-tag labelling of budding yeast cells. *PLoS ONE*, **2013**, 8, e78745	3.7	72
70	Novel red fluorophores with superior performance in STED microscopy. *Optical Nanoscopy*, **2012**, 1, 7		68
69	Expression-Enhanced Fluorescent Proteins Based on Enhanced Green Fluorescent Protein for Super-resolution Microscopy. *ACS Nano*, **2015**, 9, 9528-41	16.7	64
68	Organization of Mitochondrial Gene Expression in Two Distinct Ribosome-Containing Assemblies. *Cell Reports*, **2015**, 10, 843-853	10.6	64
67	Mitochondrial fusion is required for regulation of mitochondrial DNA replication. *PLoS Genetics*, **2019**, 15, e1008085	6	62
66	Coordinate-targeted fluorescence nanoscopy with multiple off states. *Nature Photonics*, **2016**, 10, 122-128	39.9	61
65	Fis1p and Caf4p, but not Mdv1p, determine the polar localization of Dnm1p clusters on the mitochondrial surface. *Journal of Cell Science*, **2006**, 119, 3098-106	5.3	60
64	Molecular basis of the light-driven switching of the photochromic fluorescent protein Padron. *Journal of Biological Chemistry*, **2010**, 285, 14603-9	5.4	58
63	Spatial orchestration of mitochondrial translation and OXPHOS complex assembly. *Nature Cell Biology*, **2018**, 20, 528-534	23.4	57
62	The MICOS component Mic60 displays a conserved membrane-bending activity that is necessary for normal cristae morphology. *Journal of Cell Biology*, **2017**, 216, 889-899	7.3	55
61	Correlative cryo super-resolution light and electron microscopy on mammalian cells using fluorescent proteins. *Scientific Reports*, **2019**, 9, 1369	4.9	55
60	Dual-label STED nanoscopy of living cells using photochromism. *Nano Letters*, **2011**, 11, 3970-3	11.5	52
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58	MICOS assembly controls mitochondrial inner membrane remodeling and crista junction redistribution to mediate cristae formation. *EMBO Journal*, **2020**, 39, e104105	13	43
57	Sample preparation for STED microscopy. *Methods in Molecular Biology*, **2010**, 591, 185-99	1.4	43

56	Two-Color 810 nm STED Nanoscopy of Living Cells with Endogenous SNAP-Tagged Fusion Proteins. *ACS Chemical Biology*, **2018**, 13, 475-480	4.9	42
55	TIM29 is a subunit of the human carrier translocase required for protein transport. *FEBS Letters*, **2016**, 590, 4147-4158	3.8	42
54	Two-color RESOLFT nanoscopy with green and red fluorescent photochromic proteins. *ChemPhysChem*, **2014**, 15, 655-63	3.2	39
53	MITRAC7 Acts as a COX1-Specific Chaperone and Reveals a Checkpoint during Cytochrome c Oxidase Assembly. *Cell Reports*, **2015**, 12, 1644-55	10.6	38
52	Red-emitting rhodamines with hydroxylated, sulfonated, and phosphorylated dye residues and their use in fluorescence nanoscopy. *Chemistry - A European Journal*, **2012**, 18, 12986-98	4.8	36
51	Photoconversion of matrix targeted GFP enables analysis of continuity and intermixing of the mitochondrial lumen. *FEBS Letters*, **2003**, 554, 194-200	3.8	34
50	The Oxidation Status of Mic19 Regulates MICOS Assembly. *Molecular and Cellular Biology*, **2015**, 35, 4222-37	4.8	32
49	Nanoscale separation of molecular species based on their rotational mobility. *Optics Express*, **2008**, 16, 21093-104	3.3	32
48	Rhodamine NN: eine neue Klasse maskierter Fluoreszenzfarbstoffe. *Angewandte Chemie*, **2010**, 122, 3598-3602	3.6	31
47	Ultrafast dynamics microscopy. *Applied Physics Letters*, **2000**, 77, 597-599	3.4	31
46	In vivo super-resolution RESOLFT microscopy of Drosophila melanogaster. *ELife*, **2016**, 5,	8.9	31
45	Comment on "Extended-resolution structured illumination imaging of endocytic and cytoskeletal dynamics". *Science*, **2016**, 352, 527	33.3	31
44	A MICOS-TIM22 Association Promotes Carrier Import into Human Mitochondria. *Journal of Molecular Biology*, **2019**, 431, 2835-2851	6.5	30
43	The m-AAA protease processes cytochrome c peroxidase preferentially at the inner boundary membrane of mitochondria. *Molecular Biology of the Cell*, **2009**, 20, 572-80	3.5	30
42	Mic60 exhibits a coordinated clustered distribution along and across yeast and mammalian mitochondria. *Proceedings of the National Academy of Sciences of the United States of America*, **2019**, 116, 9853-9858	11.5	28
41	STED super-resolution microscopy of clinical paraffin-embedded human rectal cancer tissue. *PLoS ONE*, **2014**, 9, e101563	3.7	28
40	The inner-mitochondrial distribution of Oxa1 depends on the growth conditions and on the availability of substrates. *Molecular Biology of the Cell*, **2012**, 23, 2292-301	3.5	26
39	Dual-color 4Pi-confocal microscopy with 3D-resolution in the 100 nm range. *Ultramicroscopy*, **2001**, 90, 207-13	3.1	26

38	Kinetic coupling of the respiratory chain with ATP synthase, but not proton gradients, drives ATP production in cristae membranes. *Proceedings of the National Academy of Sciences of the United States of America*, **2020**, 117, 2412-2421	11.5	25
37	4Pi microscopy of quantum dot-labeled cellular structures. *Journal of Structural Biology*, **2006**, 156, 517-23	3.4	25
36	Multicolor 3D MINFLUX nanoscopy of mitochondrial MICOS proteins. *Proceedings of the National Academy of Sciences of the United States of America*, **2020**, 117, 20607-20614	11.5	25
35	ROMO1 is a constituent of the human presequence translocase required for YME1L protease import. *Journal of Cell Biology*, **2019**, 218, 598-614	7.3	24
34	Photoswitching mechanism of a fluorescent protein revealed by time-resolved crystallography and transient absorption spectroscopy. *Nature Communications*, **2020**, 11, 741	17.4	23
33	Near-infrared STED nanoscopy with an engineered bacterial phytochrome. *Nature Communications*, **2018**, 9, 4762	17.4	22
32	Light Microscopy of Mitochondria at the Nanoscale. *Annual Review of Biophysics*, **2020**, 49, 289-308	21.1	21
31	Far-field autofluorescence nanoscopy. *Nano Letters*, **2010**, 10, 4249-52	11.5	21
30	Achromatic light patterning and improved image reconstruction for parallelized RESOLFT nanoscopy. *Scientific Reports*, **2017**, 7, 44619	4.9	20
29	Aberration-corrected cryoimmersion light microscopy. *Proceedings of the National Academy of Sciences of the United States of America*, **2018**, 115, 1204-1209	11.5	20
28	Reversible photoswitching enables single-molecule fluorescence fluctuation spectroscopy at high molecular concentration. *Microscopy Research and Technique*, **2007**, 70, 1003-9	2.8	20
27	Nanoscale Resolution with Focused Light: Stimulated Emission Depletion and Other Reversible Saturable Optical Fluorescence Transitions Microscopy Concepts **2006**, 571-579		18
26	MINSTED fluorescence localization and nanoscopy. *Nature Photonics*, **2021**, 15, 361-366	33.9	18
25	Coordinate-targeted and coordinate-stochastic super-resolution microscopy with the reversibly switchable fluorescent protein Dreiklang. *ChemPhysChem*, **2014**, 15, 756-62	3.2	17
24	Primary light-induced reaction steps of reversibly photoswitchable fluorescent protein Padron0.9 investigated by femtosecond spectroscopy. *Journal of Physical Chemistry B*, **2015**, 119, 5136-44	3.4	9
23	Rapid FlAsH labelling in the budding yeast Saccharomyces cerevisiae. *Journal of Microscopy*, **2010**, 240, 6-13	1.9	8
22	Light microscopic analysis of mitochondrial heterogeneity in cell populations and within single cells. *Advances in Biochemical Engineering/Biotechnology*, **2011**, 124, 1-19	1.7	7
21	The TFAM-to-mtDNA ratio defines inner-cellular nucleoid populations with distinct activity levels. *Cell Reports*, **2021**, 37, 110000	10.6	7

20	Monitoring mitochondrial translation in living cells. *EMBO Reports*, **2021**, 22, e51635	6.5	6
19	Reversibly Switchable Fluorescent Proteins for RESOLFT Nanoscopy. *Topics in Applied Physics*, **2020**, 241-261	2.9	5
18	Mapping protein interactions in the active TOM-TIM23 supercomplex. *Nature Communications*, **2021**, 12, 5715	17.4	5
17	Correlative STED super-resolution light and electron microscopy on resin sections. *Journal Physics D: Applied Physics*, **2019**, 52, 374003	3	4
16	RESOLFT Nanoscopy of Fixed Cells Using a Z-Domain Based Fusion Protein for Labelling. *PLoS ONE*, **2015**, 10, e0136233	3.7	4
15	Molecular contribution function in RESOLFT nanoscopy. *Optics Express*, **2019**, 27, 21956-21987	3.3	4
14	Absolute quantum yield measurements of fluorescent proteins using a plasmonic nanocavity. *Communications Biology*, **2020**, 3, 627	6.7	4
13	MINSTED fluorescence localization and nanoscopy		3
12	Live-cell RESOLFT nanoscopy of transgenic. *Plant Direct*, **2020**, 4, e00261	3.3	2
11	Colocalization for super-resolution microscopy via optimal transport. *Nature Computational Science*, **2021**, 1, 199-211		2
10	The Positive Switching Fluorescent Protein Padron2 Enables Live-Cell Reversible Saturable Optical Linear Fluorescence Transitions (RESOLFT) Nanoscopy without Sequential Illumination Steps. *ACS Nano*, **2021**, 15, 9509-9521	16.7	2
9	Correlative fluorescence microscopy, transmission electron microscopy and secondary ion mass spectrometry (CLEM-SIMS) for cellular imaging. *PLoS ONE*, **2021**, 16, e0240768	3.7	2
8	isoSTED microscopy with water-immersion lenses and background reduction. *Biophysical Journal*, **2021**, 120, 3303-3314	2.9	2
7	FlAsH Protein Labeling73-88		1
6	Live-cell STED microscopy of mitochondrial cristae		1
5	The Positive Switching RSFP Padron2 Enables Live-Cell RESOLFT Nanoscopy Without Sequential Irradiation Steps		1
4	Optimal precision and accuracy in 4Pi-STORM using dynamic spline PSF models.. *Nature Methods*, **2022**, 19, 603-612	21.6	1
3	Cover Picture: Rhodamines NN: A Novel Class of Caged Fluorescent Dyes (Angew. Chem. Int. Ed. 20/2010). *Angewandte Chemie - International Edition*, **2010**, 49, 3391-3391	16.4	

2 Reversibel schaltbare fluoreszierende Proteine für die Superauflösung. *BioSpektrum*, **2016**, 22, 365-367 0.1

1 Innenarchitektur der Zellkraftwerke – Membranfalten in Hochauflösung. *BioSpektrum*, **2021**, 27, 161-164 0.1