

Matthew D Lew

List of Publications by Year in descending order

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Version: 2024-02-01

78
papers

1,969
citations

361413

20
h-index

289244

40
g-index

91
all docs

91
docs citations

91
times ranked

1881
citing authors

#	ARTICLE	IF	CITATIONS
1	Simultaneous, accurate measurement of the 3D position and orientation of single molecules. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 19087-19092.	7.1	176
2	Localizing and Tracking Single Nanoscale Emitters in Three Dimensions with High Spatiotemporal Resolution Using a Double-Helix Point Spread Function. Nano Letters, 2010, 10, 211-218.	9.1	164
3	Three-dimensional superresolution colocalization of intracellular protein superstructures and the cell surface in live <i>Caulobacter crescentus</i> . Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, E1102-10.	7.1	131
4	Corkscrew point spread function for far-field three-dimensional nanoscale localization of pointlike objects. Optics Letters, 2011, 36, 202.	3.3	124
5	The Role of Molecular Dipole Orientation in Single-Molecule Fluorescence Microscopy and Implications for Super-Resolution Imaging. ChemPhysChem, 2014, 15, 587-599.	2.1	121
6	Extending Microscopic Resolution with Single-Molecule Imaging and Active Control. Annual Review of Biophysics, 2012, 41, 321-342.	10.0	107
7	Three-dimensional localization precision of the double-helix point spread function versus astigmatism and biplane. Applied Physics Letters, 2010, 97, 161103.	3.3	104
8	Rotational Mobility of Single Molecules Affects Localization Accuracy in Super-Resolution Fluorescence Microscopy. Nano Letters, 2013, 13, 3967-3972.	9.1	101
9	Speckle-modulating optical coherence tomography in living mice and humans. Nature Communications, 2017, 8, 15845.	12.8	91
10	Correcting field-dependent aberrations with nanoscale accuracy in three-dimensional single-molecule localization microscopy. Optica, 2015, 2, 985.	9.3	87
11	Single-molecule orientation measurements with a quadrated pupil. Optics Letters, 2013, 38, 1521.	3.3	60
12	Imaging the three-dimensional orientation and rotational mobility of fluorescent emitters using the Tri-spot point spread function. Applied Physics Letters, 2018, 113, 031103.	3.3	58
13	Azimuthal Polarization Filtering for Accurate, Precise, and Robust Single-Molecule Localization Microscopy. Nano Letters, 2014, 14, 6407-6413.	9.1	54
14	Single-molecule orientation localization microscopy for resolving structural heterogeneities between amyloid fibrils. Optica, 2020, 7, 602.	9.3	52
15	The double-helix microscope super-resolves extended biological structures by localizing single blinking molecules in three dimensions with nanoscale precision. Applied Physics Letters, 2012, 100, 153701.	3.3	48
16	Nanoscale Colocalization of Fluorogenic Probes Reveals the Role of Oxygen Vacancies in the Photocatalytic Activity of Tungsten Oxide Nanowires. ACS Catalysis, 2020, 10, 2088-2099.	11.2	44
17	Super-Resolution Imaging of Amyloid Structures over Extended Times by Using Transient Binding of Single Thioflavin-T Molecules. ChemBioChem, 2018, 19, 1944-1948.	2.6	43
18	Single-Molecule 3D Orientation Imaging Reveals Nanoscale Compositional Heterogeneity in Lipid Membranes. Angewandte Chemie - International Edition, 2020, 59, 17572-17579.	13.8	36

#	ARTICLE	IF	CITATIONS
19	Easy-DHPSF open-source software for three-dimensional localization of single molecules with precision beyond the optical diffraction limit. <i>Protocol Exchange</i> , 0, , .	0.3	31
20	Fundamental Limits on Measuring the Rotational Constraint of Single Molecules Using Fluorescence Microscopy. <i>Physical Review Letters</i> , 2019, 122, 198301.	7.8	27
21	Single-Molecule Localization Microscopy of 3D Orientation and Anisotropic Wobble Using a Polarized Vortex Point Spread Function. <i>Journal of Physical Chemistry B</i> , 2021, 125, 12718-12729.	2.6	26
22	The double-helix point spread function enables precise and accurate measurement of 3D single-molecule localization and orientation. <i>Proceedings of SPIE</i> , 2013, 8590, 85900.	0.8	25
23	Single-molecule orientation localization microscopy II: a performance comparison. <i>Journal of the Optical Society of America A: Optics and Image Science, and Vision</i> , 2021, 38, 288.	1.5	24
24	Single-Molecule Colocalization of Redox Reactions on Semiconductor Photocatalysts Connects Surface Heterogeneity and Charge-Carrier Separation in Bismuth Oxybromide. <i>Journal of the American Chemical Society</i> , 2021, 143, 11393-11403.	13.7	24
25	Dipole-spread-function engineering for simultaneously measuring the 3D orientations and 3D positions of fluorescent molecules. <i>Optica</i> , 2022, 9, 505.	9.3	20
26	Single-molecule orientation localization microscopy I: fundamental limits. <i>Journal of the Optical Society of America A: Optics and Image Science, and Vision</i> , 2021, 38, 277.	1.5	19
27	Quantum limits for precisely estimating the orientation and wobble of dipole emitters. <i>Physical Review Research</i> , 2020, 2, .	3.6	19
28	Quantitative differential interference contrast microscopy based on structured-aperture interference. <i>Applied Physics Letters</i> , 2008, 93, 091113.	3.3	17
29	Resolving the Three-Dimensional Rotational and Translational Dynamics of Single Molecules Using Radially and Azimuthally Polarized Fluorescence. <i>Nano Letters</i> , 2022, 22, 1024-1031.	9.1	16
30	In vivo three-dimensional superresolution fluorescence tracking using a double-helix point spread function. <i>Proceedings of SPIE</i> , 2010, 7571, 75710Z.	0.8	15
31	Dense Super-Resolution Imaging of Molecular Orientation Via Joint Sparse Basis Deconvolution and Spatial Pooling. , 2019, , .		14
32	Interference of a four-hole aperture for on-chip quantitative two-dimensional differential phase imaging. <i>Optics Letters</i> , 2007, 32, 2963.	3.3	12
33	Minimizing Structural Bias in Single-Molecule Super-Resolution Microscopy. <i>Scientific Reports</i> , 2018, 8, 13133.	3.3	12
34	Quantifying accuracy and heterogeneity in single-molecule super-resolution microscopy. <i>Nature Communications</i> , 2020, 11, 6353.	12.8	12
35	Competing Activation and Deactivation Mechanisms in Photodoped Bismuth Oxybromide Nanoplates Probed by Single-Molecule Fluorescence Imaging. <i>Journal of Physical Chemistry Letters</i> , 2020, 11, 5219-5227.	4.6	11
36	Cellular Trafficking of Sn-2 Phosphatidylcholine Prodrugs Studied with Fluorescence Lifetime Imaging and Super-resolution Microscopy. <i>Precision Nanomedicine</i> , 2018, 1, 128-145.	0.8	11

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37	<i>In Situ</i> Imaging of Catalytic Reactions on Tungsten Oxide Nanowires Connects Surfaceâ€“Ligand Redox Chemistry with Photocatalytic Activity. <i>Nano Letters</i> , 2022, 22, 4694-4701.	9.1	8
38	Long-term, super-resolution imaging of amyloid structures using transient amyloid binding microscopy. , 2019, , .		5
39	Singleâ€“Molecule 3D Orientation Imaging Reveals Nanoscale Compositional Heterogeneity in Lipid Membranes. <i>Angewandte Chemie</i> , 2020, 132, 17725-17732.	2.0	2
40	Measuring localization confidence for quantifying accuracy and heterogeneity in single-molecule super-resolution microscopy. , 2020, , .		2
41	3D Single-Molecule Super-Resolution Fluorescence Microscopy with the Corkscrew Point Spread Function. <i>Biophysical Journal</i> , 2016, 110, 176a.	0.5	1
42	Two-dimensional differential interference contrast microscopy based on four-hole variation of Young's interference. <i>Proceedings of SPIE</i> , 2008, , .	0.8	0
43	Localizing and Tracking Single Emitters in Three Dimensions Using a Double Helix Point Spread Function. , 2010, , .		0
44	Single-Molecule Photocontrol and Nanoscopy. <i>Springer Series on Fluorescence</i> , 2012, , 87-110.	0.8	0
45	Precise Measurement of the Relative Position of RNA Dimers within Virus-Like Particles using 2-Color 3D Super-Resolution Fluorescence Microscopy. <i>Biophysical Journal</i> , 2014, 106, 399a.	0.5	0
46	Single-molecule orientation measurements with a quadrated pupil. <i>Proceedings of SPIE</i> , 2014, , .	0.8	0
47	Long-Term Super-Resolution Imaging of Amyloid Structures using Transient Binding of Standard Amyloid Probes. <i>Biophysical Journal</i> , 2018, 114, 346a-347a.	0.5	0
48	Superresolution Imaging of Amyloid Structures over Extended Times using Transient Binding of Single Thioflavin T Molecules. <i>Biophysical Journal</i> , 2019, 116, 458a.	0.5	0
49	Enhanced Transient Amyloid Binding Microscopy using Single-Molecule Orientation Measurements. <i>Biophysical Journal</i> , 2020, 118, 149a.	0.5	0
50	Single-Molecule 3D Orientation Imaging Reveals Nanoscale Compositional Heterogeneity in Lipid Membranes (Angew. Chem. 40/2020). <i>Angewandte Chemie</i> , 2020, 132, 17912-17912.	2.0	0
51	Superresolution 3D Orientation Imaging Reveals Nanoscale Compositional Heterogeneity in Lipid Membranes. <i>Biophysical Journal</i> , 2020, 118, 21a.	0.5	0
52	COMPUTATIONAL MODELLING ENABLES ROBUST MULTIDIMENSIONAL NANOSCOPY. , 2021, , .		0
53	Elucidating the nanoscale architecture of amyloid aggregates using a polarized donut point spread function. <i>Microscopy and Microanalysis</i> , 2021, 27, 1428-1430.	0.4	0
54	pixOL: pixel-wise point spread function engineering for measuring the 3D orientation and 3D location of dipole-like emitters. <i>Microscopy and Microanalysis</i> , 2021, 27, 858-862.	0.4	0

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55	On-chip differential interference contrast (DIC) phase imager and beam profiler based on Young's interference. , 2007, , .		0
56	Three-Dimensional Superresolution Using Single-Molecule Photoswitches and a Double-Helix PSF. , 2009, , .		0
57	Localization Precision of Three-Dimensional Superresolution Fluorescence Imaging Using a Double-Helix Point Spread Function. , 2009, , .		0
58	Super-Resolution 3D Co-Localization of Protein Superstructures and the Cellular Surface in Live <i>Caulobacter crescentus</i> . , 2011, , .		0
59	Three-Dimensional Super-Resolution Imaging with a Corkscrew Point Spread Function. , 2011, , .		0
60	The Double-Helix Microscope Enables Precise and Accurate Measurement of 3D Single-Molecule Orientation and Localization Beyond the Diffraction Limit. , 2013, , .		0
61	Measuring the 3D Position and Orientation of Single Molecules Simultaneously and Accurately with the Double Helix Microscope. , 2013, , .		0
62	Optical Methods for Measuring Single-Molecule Orientation and Position: Implications for Super-Resolution Microscopy. , 2013, , .		0
63	Single-Molecule Orientation Measurements with a Quadrated Pupil. , 2013, , .		0
64	An Azimuthal Polarizer Assures Localization Accuracy in Single-Molecule Super-Resolution Fluorescence Microscopy. , 2015, , .		0
65	Accurate 3D Nanoscale Imaging of Dipole-like Emitters. , 2015, , .		0
66	Speckle-Free Non-Invasive Imaging with Speckle-Modulating Optical Coherence Tomography. , 2018, , .		0
67	Speckle-modulation for speckle reduction in optical coherence tomography. , 2018, , .		0
68	Measuring 3D molecular orientation and rotational mobility using a Tri-spot point spread function. , 2018, , .		0
69	A robust statistical estimation (RoSE) algorithm jointly recovers the 3D location and intensity of single molecules accurately and precisely. , 2018, , .		0
70	Single-Molecule Super-Resolution Imaging of Molecular Orientation using a Tri-Spot Point Spread Function. , 2019, , .		0
71	Fundamental Limits on Imaging the Orientational Dynamics of Dipole-Like Emitters. , 2019, , .		0
72	Measuring Rotational Dynamics with High Accuracy and Precision Using a Tri-spot Point Spread Function. , 2019, , .		0

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73	Long-Term Super-Resolution Imaging of Amyloid Structures Using Transient Binding of Thioflavin T. , 2019, , .		0
74	Fundamental limits of measuring single-molecule rotational mobility. , 2019, , .		0
75	Robustly detecting imaging model mismatches and reconstruction artifacts in single-molecule localization microscopy. , 2021, , .		0
76	A computationally-efficient bound for the variance of measuring the orientation of single molecules. , 2020, , .		0
77	Imaging chemical environments and amyloid architectures using single-molecule orientation-localization microscopy. , 2021, , .		0
78	Tribute to W. E. Moerner. Journal of Physical Chemistry B, 2022, 126, 1157-1158.	2.6	0