Matthew D Lew

List of Publications by Year
in descending order

#	Article	IF	Citations
1	Resolving the Three-Dimensional Rotational and Translational Dynamics of Single Molecules Using Radially and Azimuthally Polarized Fluorescence. Nano Letters, 2022, 22, 1024-1031.	9.1	16
2	Tribute to W. E. Moerner. Journal of Physical Chemistry B, 2022, 126, 1157-1158.	2.6	0
3	Dipole-spread-function engineering for simultaneously measuring the 3D orientations and 3D positions of fluorescent molecules. Optica, 2022, 9, 505.	9.3	20
4	<i>In Situ</i> Imaging of Catalytic Reactions on Tungsten Oxide Nanowires Connects Surfaceâ€"Ligand Redox Chemistry with Photocatalytic Activity. Nano Letters, 2022, 22, 4694-4701.	9.1	8
5	COMPUTATIONAL MODELLING ENABLES ROBUST MULTIDIMENSIONAL NANOSCOPY. , 2021, , .		0
6	Single-molecule orientation localization microscopy II: a performance comparison. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2021, 38, 288.	1.5	24
7	Single-molecule orientation localization microscopy I: fundamental limits. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2021, 38, 277.	1.5	19
8	Elucidating the nanoscale architecture of amyloid aggregates using a polarized donut point spread function. Microscopy and Microanalysis, 2021, 27, 1428-1430.	0.4	0
9	Single-Molecule Colocalization of Redox Reactions on Semiconductor Photocatalysts Connects Surface Heterogeneity and Charge-Carrier Separation in Bismuth Oxybromide. Journal of the American Chemical Society, 2021, 143, 11393-11403.	13.7	24
10	pixOL: pixel-wise point spread function engineering for measuring the 3D orientation and 3D location of dipole-like emitters. Microscopy and Microanalysis, 2021, 27, 858-862.	0.4	0
11	Robustly detecting imaging model mismatches and reconstruction artifacts in single-molecule localization microscopy. , 2021, , .		0
12	Imaging chemical environments and amyloid architectures using single-molecule orientation-localization microscopy. , 2021, , .		0
13	Single-Molecule Localization Microscopy of 3D Orientation and Anisotropic Wobble Using a Polarized Vortex Point Spread Function. Journal of Physical Chemistry B, 2021, 125, 12718-12729.	2.6	26
14	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
15	Enhanced Transient Amyloid Binding Microscopy using Single-Molecule Orientation Measurements. Biophysical Journal, 2020, 118, 149a.	0.5	0
16	Singleâ€Molecule 3D Orientation Imaging Reveals Nanoscale Compositional Heterogeneity in Lipid Membranes. Angewandte Chemie, 2020, 132, 17725-17732.	2.0	2
17	RÃ¼cktitelbild: Singleâ€Molecule 3D Orientation Imaging Reveals Nanoscale Compositional Heterogeneity in Lipid Membranes (Angew. Chem. 40/2020). Angewandte Chemie, 2020, 132, 17912-17912.	2.0	0
18	Quantifying accuracy and heterogeneity in single-molecule super-resolution microscopy. Nature Communications, 2020, 11, 6353.	12.8	12

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19	Competing Activation and Deactivation Mechanisms in Photodoped Bismuth Oxybromide Nanoplates Probed by Single-Molecule Fluorescence Imaging. Journal of Physical Chemistry Letters, 2020, 11, 5219-5227.	4.6	11
20	Singleâ€Molecule 3D Orientation Imaging Reveals Nanoscale Compositional Heterogeneity in Lipid Membranes. Angewandte Chemie - International Edition, 2020, 59, 17572-17579.	13.8	36
21	Superresolution 3D Orientation Imaging Reveals Nanoscale Compositional Heterogeneity in Lipid Membranes. Biophysical Journal, 2020, 118, 21a.	0.5	0
22	Quantum limits for precisely estimating the orientation and wobble of dipole emitters. Physical Review Research, 2020, 2, .	3.6	19
23	Single-molecule orientation localization microscopy for resolving structural heterogeneities between amyloid fibrils. Optica, 2020, 7, 602.	9.3	52
24	A computationally-efficient bound for the variance of measuring the orientation of single molecules. , 2020, , .		0
25	Measuring localization confidence for quantifying accuracy and heterogeneity in single-molecule super-resolution microscopy. , 2020, , .		2
26	Fundamental Limits on Measuring the Rotational Constraint of Single Molecules Using Fluorescence Microscopy. Physical Review Letters, 2019, 122, 198301.	7.8	27
27	Superresolution Imaging of Amyloid Structures over Extended Times using Transient Binding of Single Thioflavin T Molecules. Biophysical Journal, 2019, 116, 458a.	0.5	0
28	Dense Super-Resolution Imaging of Molecular Orientation Via Joint Sparse Basis Deconvolution and Spatial Pooling. , 2019, , .		14
29	Long-term, super-resolution imaging of amyloid structures using transient amyloid binding microscopy. , 2019, , .		5
30	Single-Molecule Super-Resolution Imaging of Molecular Orientation using a Tri-Spot Point Spread Function. , 2019, , .		0
31	Fundamental Limits on Imaging the Orientational Dynamics of Dipole-Like Emitters. , 2019, , .		0
32	Measuring Rotational Dynamics with High Accuracy and Precision Using a Tri-spot Point Spread Function. , 2019, , .		0
33	Long-Term Super-Resolution Imaging of Amyloid Structures Using Transient Binding of Thioflavin T. , 2019, , .		0
34	Fundamental limits of measuring single-molecule rotational mobility. , 2019, , .		0
35	Minimizing Structural Bias in Single-Molecule Super-Resolution Microscopy. Scientific Reports, 2018, 8, 13133.	3.3	12
36	Superâ€resolution Imaging of Amyloid Structures over Extended Times by Using Transient Binding of Single Thioflavinâ€…T Molecules. ChemBioChem, 2018, 19, 1944-1948.	2.6	43

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37	Long-Term Super-Resolution Imaging of Amyloid Structures using Transient Binding of Standard Amyloid Probes. Biophysical Journal, 2018, 114, 346a-347a.	0.5	0
38	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
39	Cellular Trafficking of Sn-2 Phosphatidylcholine Prodrugs Studied withÂFluorescence Lifetime Imaging and Super-resolution Microscopy. Precision Nanomedicine, 2018, 1, 128-145.	0.8	11
40	Speckle-Free Non-Invasive Imaging with Speckle-Modulating Optical Coherence Tomography. , 2018, , .		0
41	Speckle-modulation for speckle reduction in optical coherence tomography. , 2018, , .		0
42	Measuring 3D molecular orientation and rotational mobility using a Tri-spot point spread function. , 2018, , .		0
43	A robust statistical estimation (RoSE) algorithm jointly recovers the 3D location and intensity of single molecules accurately and precisely. , 2018, , .		0
44	Speckle-modulating optical coherence tomography in living mice and humans. Nature Communications, 2017, 8, 15845.	12.8	91
45	3D Single-Molecule Super-Resolution Fluorescence Microscopy with the Corkscrew Point Spread Function. Biophysical Journal, 2016, 110, 176a.	0.5	1
46	Correcting field-dependent aberrations with nanoscale accuracy in three-dimensional single-molecule localization microscopy. Optica, 2015, 2, 985.	9.3	87
47	An Azimuthal Polarizer Assures Localization Accuracy in Single-Molecule Super-Resolution Fluorescence Microscopy. , 2015, , .		0
48	Accurate 3D Nanoscale Imaging of Dipole-like Emitters. , 2015, , .		0
49	The Role of Molecular Dipole Orientation in Singleâ€Molecule Fluorescence Microscopy and Implications for Superâ€Resolution Imaging. ChemPhysChem, 2014, 15, 587-599.	2.1	121
50	Azimuthal Polarization Filtering for Accurate, Precise, and Robust Single-Molecule Localization Microscopy. Nano Letters, 2014, 14, 6407-6413.	9.1	54
51	Precise Measurement of the Relative Position of RNA Dimers within Virus-Like Particles using 2-Color 3D Super-Resolution Fluorescence Microscopy. Biophysical Journal, 2014, 106, 399a.	0.5	0
52	Single-molecule orientation measurements with a quadrated pupil. Proceedings of SPIE, 2014, , .	0.8	0
53	Rotational Mobility of Single Molecules Affects Localization Accuracy in Super-Resolution Fluorescence Microscopy. Nano Letters, 2013, 13, 3967-3972.	9.1	101
54	The double-helix point spread function enables precise and accurate measurement of 3D single-molecule localization and orientation. Proceedings of SPIE, 2013, 8590, 85900.	0.8	25

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55	Single-molecule orientation measurements with a quadrated pupil. Optics Letters, 2013, 38, 1521.	3.3	60
56	The Double-Helix Microscope Enables Precise and Accurate Measurement of 3D Single-Molecule Orientation and Localization Beyond the Diffraction Limit. , 2013, , .		0
57	Measuring the 3D Position and Orientation of Single Molecules Simultaneously and Accurately with the Double Helix Microscope. , 2013, , .		0
58	Optical Methods for Measuring Single-Molecule Orientation and Position: Implications for Super-Resolution Microscopy. , 2013, , .		0
59	Single-Molecule Orientation Measurements with a Quadrated Pupil. , 2013, , .		0
60	Single-Molecule Photocontrol and Nanoscopy. Springer Series on Fluorescence, 2012, , 87-110.	0.8	0
61	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
62	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
63	Extending Microscopic Resolution with Single-Molecule Imaging and Active Control. Annual Review of Biophysics, 2012, 41, 321-342.	10.0	107
64	Corkscrew point spread function for far-field three-dimensional nanoscale localization of pointlike objects. Optics Letters, 2011, 36, 202.	3.3	124
65	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
66	Super-Resolution 3D Co-Localization of Protein Superstructures and the Cellular Surface in Live Caulobacter crescentus. , 2011, , .		0
67	Three-Dimensional Super-Resolution Imaging with a Corkscrew Point Spread Function. , 2011, , .		0
68	Localizing and Tracking Single Emitters in Three Dimensions Using a Double Helix Point Spread Function. , 2010, , .		0
69	Three-dimensional localization precision of the double-helix point spread function versus astigmatism and biplane. Applied Physics Letters, 2010, 97, 161103.	3.3	104
70	In vivo three-dimensional superresolution fluorescence tracking using a double-helix point spread function. Proceedings of SPIE, 2010, 7571, 75710Z.	0.8	15
71	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
72	Three-Dimensional Superresolution Using Single-Molecule Photoswitches and a Double-Helix PSF. , 2009, , .		0

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73	Localization Precision of Three-Dimensional Superresolution Fluorescence Imaging Using a Double-Helix Point Spread Function. , 2009, , .		0
74	Quantitative differential interference contrast microscopy based on structured-aperture interference. Applied Physics Letters, 2008, 93, 091113.	3.3	17
75	Two-dimensional differential interference contrast microscopy based on four-hole variation of Young's interference. Proceedings of SPIE, 2008, , .	0.8	0
76	Interference of a four-hole aperture for on-chip quantitative two-dimensional differential phase imaging. Optics Letters, 2007, 32, 2963.	3.3	12
77	On-chip differential interference contrast (DIC) phase imager and beam profiler based on Young's interference. , 2007, , .		0
78	Easy-DHPSF open-source software for three-dimensional localization of single molecules with precision beyond the optical diffraction limit. Protocol Exchange, 0, , .	0.3	31