

Xavier Michalet

List of Publications by Year in descending order

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95
papers

13,542
citations

109321

35
h-index

85541

71
g-index

110
all docs

110
docs citations

110
times ranked

16189
citing authors

#	ARTICLE	IF	CITATIONS
1	Quantum Dots for Live Cells, in Vivo Imaging, and Diagnostics. <i>Science</i> , 2005, 307, 538-544.	12.6	7,371
2	Mean square displacement analysis of single-particle trajectories with localization error: Brownian motion in an isotropic medium. <i>Physical Review E</i> , 2010, 82, 041914.	2.1	547
3	Single-Molecule Fluorescence Studies of Protein Folding and Conformational Dynamics. <i>Chemical Reviews</i> , 2006, 106, 1785-1813.	47.7	488
4	Accurate FRET Measurements within Single Diffusing Biomolecules Using Alternating-Laser Excitation. <i>Biophysical Journal</i> , 2005, 88, 2939-2953.	0.5	440
5	Toward dynamic structural biology: Two decades of single-molecule FRET resonance energy transfer. <i>Science</i> , 2018, 359, .	12.6	414
6	Advances in fluorescence imaging with quantum dot bio-probes. <i>Biomaterials</i> , 2006, 27, 1679-1687.	11.4	411
7	Properties of Fluorescent Semiconductor Nanocrystals and their Application to Biological Labeling. <i>Single Molecules</i> , 2001, 2, 261-276.	0.9	365
8	Ultrahigh-resolution multicolor colocalization of single fluorescent probes. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2000, 97, 9461-9466.	7.1	304
9	Shot-Noise Limited Single-Molecule FRET Histograms: A Comparison between Theory and Experiments. <i>Journal of Physical Chemistry B</i> , 2006, 110, 22103-22124.	2.6	301
10	Optimal diffusion coefficient estimation in single-particle tracking. <i>Physical Review E</i> , 2012, 85, 061916.	2.1	231
11	The Power and Prospects of Fluorescence Microscopies and Spectroscopies. <i>Annual Review of Biophysics and Biomolecular Structure</i> , 2003, 32, 161-182.	18.3	198
12	Dynamic Partitioning of a Glycosylated Phosphatidylinositol-Anchored Protein in Glycosphingolipid-Rich Microdomains Imaged by Single-Quantum Dot Tracking. <i>Traffic</i> , 2009, 10, 691-712.	2.7	153
13	FRET-based dynamic structural biology: Challenges, perspectives and an appeal for open-science practices. <i>ELife</i> , 2021, 10, .	6.0	152
14	Femtomole Mixer for Microsecond Kinetic Studies of Protein Folding. <i>Analytical Chemistry</i> , 2004, 76, 7169-7178.	6.5	138
15	Detectors for single-molecule fluorescence imaging and spectroscopy. <i>Journal of Modern Optics</i> , 2007, 54, 239-281.	1.3	110
16	A 512 × 512 SPAD Image Sensor With Integrated Gating for Widefield FLIM. <i>IEEE Journal of Selected Topics in Quantum Electronics</i> , 2019, 25, 1-12.	2.9	109
17	New Light on Quantum Dot Cytotoxicity. <i>Chemistry and Biology</i> , 2005, 12, 1159-1161.	6.0	100
18	Development of new photon-counting detectors for single-molecule fluorescence microscopy. <i>Philosophical Transactions of the Royal Society B: Biological Sciences</i> , 2013, 368, 20120035.	4.0	100

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19	Architecture and applications of a high resolution gated SPAD image sensor. Optics Express, 2014, 22, 17573.	3.4	94
20	Backtracked and paused transcription initiation intermediate of <i>Escherichia coli</i> RNA polymerase. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, E6562-E6571.	7.1	78
21	High-throughput FCS using an LCOS spatial light modulator and an 8 Å ⁻¹ SPAD array. Biomedical Optics Express, 2010, 1, 1408.	2.9	74
22	Fluctuating vesicles of nonspherical topology. Physical Review Letters, 1994, 72, 168-171.	7.8	63
23	Ultrahigh-Resolution Colocalization of Spectrally Separable Point-like Fluorescent Probes. Methods, 2001, 25, 87-102.	3.8	63
24	FRETBursts: An Open Source Toolkit for Analysis of Freely-Diffusing Single-Molecule FRET. PLoS ONE, 2016, 11, e0160716.	2.5	62
25	Single-molecule spectroscopy and microscopy. Comptes Rendus Physique, 2002, 3, 619-644.	0.9	61
26	Silicon Photon-Counting Avalanche Diodes for Single-Molecule Fluorescence Spectroscopy. IEEE Journal of Selected Topics in Quantum Electronics, 2014, 20, 248-267.	2.9	56
27	Lighting Up Individual DNA Binding Proteins with Quantum Dots. Nano Letters, 2009, 9, 1598-1603.	9.1	50
28	Wide-field time-gated SPAD imager for phasor-based FLIM applications. Methods and Applications in Fluorescence, 2020, 8, 024002.	2.3	50
29	Photon-HDF5: An Open File Format for Timestamp-Based Single-Molecule Fluorescence Experiments. Biophysical Journal, 2016, 110, 26-33.	0.5	45
30	Using photon statistics to boost microscopy resolution. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 4797-4798.	7.1	44
31	Toward Single-Molecule Optical Mapping of the Epigenome. ACS Nano, 2014, 8, 14-26.	14.6	42
32	Protein-protein interactions as a tool for site-specific labeling of proteins. Protein Science, 2005, 14, 2059-2068.	7.6	40
33	Photon-counting H33D detector for biological fluorescence imaging. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2006, 567, 133-136.	1.6	39
34	Wavefunction engineering: From quantum wells to near-infrared type-II colloidal quantum dots synthesized by layer-by-layer colloidal epitaxy. Chemical Physics, 2005, 318, 82-90.	1.9	38
35	Phasor imaging with a widefield photon-counting detector. Journal of Biomedical Optics, 2012, 17, 016008.	2.6	38
36	Single-Quantum Dot Imaging with a Photon Counting Camera. Current Pharmaceutical Biotechnology, 2009, 10, 543-557.	1.6	36

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37	Suppression of Quantum Dot Blinking in DTT-Doped Polymer Films. Journal of Physical Chemistry C, 2009, 113, 11541-11545.	3.1	35
38	High Affinity scFv~Hapten Pair as a Tool for Quantum Dot Labeling and Tracking of Single Proteins in Live Cells. Nano Letters, 2008, 8, 4618-4623.	9.1	34
39	In vitro and in vivo phasor analysis of stoichiometry and pharmacokinetics using short~lifetime near~infrared dyes and time~gated imaging. Journal of Biophotonics, 2019, 12, e201800185.	2.3	31
40	Characterizing the Quantum-Confined Stark Effect in Semiconductor Quantum Dots and Nanorods for Single-Molecule Electrophysiology. ACS Photonics, 2018, 5, 4788-4800.	6.6	30
41	Ultra high-throughput single molecule spectroscopy with a 1024 pixel SPAD. Proceedings of SPIE, 2011, 7905, .	0.8	27
42	Multispot single-molecule FRET: High-throughput analysis of freely diffusing molecules. PLoS ONE, 2017, 12, e0175766.	2.5	27
43	Vesicles of Toroidal Topology: Observed Morphology and Shape Transformations. Journal De Physique II, 1995, 5, 263-287.	0.9	24
44	Nanometer Distance Measurements between Multicolor Quantum Dots. Nano Letters, 2009, 9, 2199-2205.	9.1	23
45	8-spot smFRET analysis using two 8-pixel SPAD arrays. , 2013, 8590, .		23
46	Periodic acceptor excitation spectroscopy of single molecules. European Biophysics Journal, 2007, 36, 669-674.	2.2	21
47	Measuring diffusion with polarization-modulation dual-focus fluorescence correlation spectroscopy. Optics Express, 2008, 16, 14609.	3.4	20
48	High-throughput multispot single-molecule spectroscopy. , 2010, 7571, 75710G-75710G11.		20
49	Notice of Violation of IEEE Publication Principles: Peptide coated quantum dots for biological applications. IEEE Transactions on Nanobioscience, 2006, 5, 231-238.	3.3	16
50	Different types of pausing modes during transcription initiation. Transcription, 2017, 8, 242-253.	3.1	16
51	Stretching Single-Stranded DNA on a Surface. Nano Letters, 2001, 1, 341-343.	9.1	15
52	Equilibrium shape degeneracy in starfish vesicles. Physical Review E, 2007, 76, 021914.	2.1	15
53	Phasor-based single-molecule fluorescence lifetime imaging using a wide-field photon-counting detector. , 2009, 7185, .		15
54	Parallel multispot smFRET analysis using an 8-pixel SPAD array. Proceedings of SPIE, 2012, 8228, .	0.8	15

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55	In vitro and in vivo NIR fluorescence lifetime imaging with a time-gated SPAD camera. Optica, 2022, 9, 532.	9.3	15
56	New photon-counting detectors for single-molecule fluorescence spectroscopy and imaging. , 2011, 8033, 803316.		14
57	Single-Photon, Time-Gated, Phasor-Based Fluorescence Lifetime Imaging through Highly Scattering Medium. ACS Photonics, 2020, 7, 68-79.	6.6	14
58	High Speed Multichannel Charge Sensitive Data Acquisition System With Self-Triggered Event Timing. IEEE Transactions on Nuclear Science, 2009, 56, 1148-1152.	2.0	13
59	Single-molecule FRET experiments with a red-enhanced custom technology SPAD. , 2013, 8590, .		13
60	High-throughput single-molecule fluorescence spectroscopy using parallel detection. , 2010, 7608, .		12
61	48-spot single-molecule FRET setup with periodic acceptor excitation. Journal of Chemical Physics, 2018, 148, 123304.	3.0	12
62	Continuous and discrete phasor analysis of binned or time-gated periodic decays. AIP Advances, 2021, 11, 035331.	1.3	12
63	Photon-HDF5: open data format and computational tools for timestamp-based single-molecule experiments. Proceedings of SPIE, 2016, 9714, .	0.8	10
64	Microchannel plate imaging photon counters for ultraviolet through NIR detection with high time resolution. Proceedings of SPIE, 2011, 8033, 1350904.	0.8	9
65	A 65k pixel, 150k frames-per-second camera with global gating and micro-lenses suitable for fluorescence lifetime imaging. Proceedings of SPIE, 2014, 9141, .	0.8	6
66	Optical crosstalk in SPAD arrays for high-throughput single-molecule fluorescence spectroscopy. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2018, 912, 255-258.	1.6	6
67	Peptide-coated semiconductor nanocrystals for biomedical applications. , 2005, 5704, .		5
68	Development of an ultrafast single photon counting imager for single molecule imaging. , 2006, 6092, 168.		5
69	Mean Square Displacement Analysis of Single-Particle Trajectories with Localization Error. Biophysical Journal, 2011, 100, 252a.	0.5	5
70	High-throughput smFRET analysis of freely diffusing nucleic acid molecules and associated proteins. Methods, 2019, 169, 21-45.	3.8	5
71	Phasor-based widefield FLIM using a gated 512Å–512 single-photon SPAD imager. , 2019, 10882, .		5
72	AlliGator: A Phasor Computational Platform for Fast in vivo Lifetime Analysis. , 2017, 2017, .		5

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73	<title>Ultrahigh-resolution multicolor colocalization of single fluorescent nanocrystals</title>. , 2001, 4258, .		4
74	Tracking Single Proteins in Live Cells Using Single-Chain Antibody Fragment-Fluorescent Quantum Dot Affinity Pair. Methods in Enzymology, 2010, 475, 61-79.	1.0	4
75	16-Ch time-resolved single-molecule spectroscopy using line excitation. Proceedings of SPIE, 2017, 10071, .	0.8	4
76	Novel tonometer device distinguishes brain stiffness in epilepsy surgery. Scientific Reports, 2020, 10, 20978.	3.3	4
77	French research needs. Nature, 1997, 388, 120-120.	27.8	3
78	Single Quantum Dot Trajectory Analysis: Beyond the Single Diffusion Mode Model. Biophysical Journal, 2010, 98, 203a-204a.	0.5	2
79	Open Computational Tools for Freely Diffusing Single-Molecule Fluorescence Analysis. Biophysical Journal, 2016, 110, 634a.	0.5	2
80	Properties of Fluorescent Semiconductor Nanocrystals and their Application to Biological Labeling. , 2001, 2, 261.		2
81	Quantum Optics: Colloidal Fluorescent Semiconductor Nanocrystals (Quantum Dots) in Single-Molecule Detection and Imaging. Springer Series in Biophysics, 2008, , 53-81.	0.4	2
82	Fluorescence lifetime imaging with a single-photon SPAD array using long overlapping gates: an experimental and theoretical study. , 2019, 10882, .		2
83	Thoughtful peer review is worth the time it takes. Nature, 2005, 435, 1160-1160.	27.8	1
84	Near-infrared peptide-coated quantum dots for small animal imaging. , 2006, 6096, 29.		1
85	Phasor Analysis with a New Widefield Photon-Counting Flim Detector. Biophysical Journal, 2012, 102, 202a.	0.5	1
86	A Multispot Confocal Platform for High-Throughput Freely Diffusing Single-Molecule FRET Studies. Biophysical Journal, 2016, 110, 194a-195a.	0.5	1
87	Photon-HDF5: An Open File Format for Timestamp-Based Single-Molecule Fluorescence Data. Biophysical Journal, 2016, 110, 633a.	0.5	1
88	Single-molecule fluorescence spectroscopy and imaging. SPIE Newsroom, 0, , .	0.1	1
89	High Throughput Single-Molecule Spectroscopy with Highly Parallel Excitation and Detection. Biophysical Journal, 2010, 98, 623a.	0.5	0
90	Benchmark of a New Red-Enhanced Custom Technology Spad Detector for Single-Molecule FRET Experiments. Biophysical Journal, 2012, 102, 278a.	0.5	0

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91	A 16 Channel Spad Array for High-Throughput Tcspc Measurements of Single-Molecule FRET of Freely Diffusing Molecules. Biophysical Journal, 2016, 110, 633a.	0.5	0
92	An overview of continuous and discrete phasor analysis of binned or time-gated periodic decays. , 2021, 11648, .		0
93	A user-friendly tool to convert photon counting data to the open-source Photon-HDF5 file format. , 2022, , .		0
94	NIR fluorescence lifetime macroscopic imaging with a time-gated SPAD camera. , 2022, , .		0
95	Characterization of a large Gated SPAD camera for in vivo Macroscopic Fluorescence Lifetime Imaging. , 2022, , .		0