Hao Jiang

List of Publications by Year
in descending order

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108	9,552	147801	43889
papers	citations	31 h-index	91 g-index

108	108	108	7444
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Memristors with diffusive dynamics as synaptic emulators for neuromorphic computing. Nature Materials, 2017, 16, 101-108.	27.5	1,655
2	Analogue signal and image processing with large memristor crossbars. Nature Electronics, 2018, 1, 52-59.	26.0	879
3	Fully memristive neural networks for pattern classification with unsupervised learning. Nature Electronics, 2018, 1, 137-145.	26.0	787
4	Black Phosphorus Mid-Infrared Photodetectors with High Gain. Nano Letters, 2016, 16, 4648-4655.	9.1	616
5	Efficient and self-adaptive in-situ learning in multilayer memristor neural networks. Nature Communications, 2018, 9, 2385.	12.8	575
6	Memristorâ€Based Analog Computation and Neural Network Classification with a Dot Product Engine. Advanced Materials, 2018, 30, 1705914.	21.0	517
7	Memristor crossbar arrays with 6-nm half-pitch and 2-nm critical dimension. Nature Nanotechnology, 2019, 14, 35-39.	31.5	381
8	Emerging Memory Devices for Neuromorphic Computing. Advanced Materials Technologies, 2019, 4, 1800589.	5.8	307
9	Anatomy of Ag/Hafniaâ€Based Selectors with 10¹⁰ Nonlinearity. Advanced Materials, 2017, 29, 1604457.	21.0	292
10	Long short-term memory networks in memristor crossbar arrays. Nature Machine Intelligence, 2019, 1, 49-57.	16.0	288
11	A novel true random number generator based on a stochastic diffusive memristor. Nature Communications, 2017, 8, 882.	12.8	287
12	Efficient electrical control of thin-film black phosphorus bandgap. Nature Communications, 2017, 8, 14474.	12.8	249
13	Reinforcement learning with analogue memristor arrays. Nature Electronics, 2019, 2, 115-124.	26.0	247
14	Three-dimensional memristor circuits as complex neural networks. Nature Electronics, 2020, 3, 225-232.	26.0	242
15	Threshold Switching of Ag or Cu in Dielectrics: Materials, Mechanism, and Applications. Advanced Functional Materials, 2018, 28, 1704862.	14.9	239
16	Capacitive neural network with neuro-transistors. Nature Communications, 2018, 9, 3208.	12.8	199
17	Sub-10 nm Ta Channel Responsible for Superior Performance of a HfO2 Memristor. Scientific Reports, 2016, 6, 28525.	3.3	177
18	Three-dimensional crossbar arrays of self-rectifying Si/SiO2/Si memristors. Nature Communications, 2017, 8, 15666.	12.8	153

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19	A Dynamically Reconfigurable Ambipolar Black Phosphorus Memory Device. ACS Nano, 2016, 10, 10428-10435.	14.6	97
20	Artificial Neural Network (ANN) to Spiking Neural Network (SNN) Converters Based on Diffusive Memristors. Advanced Electronic Materials, 2019, 5, 1900060.	5.1	92
21	Broadband optical properties of graphene and HOPG investigated by spectroscopic Mueller matrix ellipsometry. Applied Surface Science, 2018, 439, 1079-1087.	6.1	67
22	A provable key destruction scheme based on memristive crossbar arrays. Nature Electronics, 2018, 1, 548-554.	26.0	61
23	Layerâ€Dependent Dielectric Function of Waferâ€Scale 2D MoS₂. Advanced Optical Materials, 2019, 7, 1801250.	7.3	58
24	Layer-dependent dielectric and optical properties of centimeter-scale 2D WSe₂: evolution from a single layer to few layers. Nanoscale, 2019, 11, 22762-22771.	5.6	55
25	Optimal broadband Mueller matrix ellipsometer using multi-waveplates with flexibly oriented axes. Journal of Optics (United Kingdom), 2016, 18, 025702.	2.2	52
26	A Memristor with Low Switching Current and Voltage for 1S1R Integration and Array Operation. Advanced Electronic Materials, 2020, 6, 1901411.	5.1	51
27	Mueller matrix imaging ellipsometry for nanostructure metrology. Optics Express, 2015, 23, 17316.	3.4	48
28	Superhydrophilic Cu(OH)₂ nanowire-based QCM transducer with self-healing ability for humidity detection. Journal of Materials Chemistry A, 2019, 7, 9068-9077.	10.3	42
29	Accurate characterization of nanoimprinted resist patterns using Mueller matrix ellipsometry. Optics Express, 2014, 22, 15165.	3.4	35
30	Complex Optical Conductivity of Two-Dimensional MoS₂: A Striking Layer Dependency. Journal of Physical Chemistry Letters, 2019, 10, 6246-6252.	4.6	35
31	Low voltage resistive switching devices based on chemically produced silicon oxide. Applied Physics Letters, 2013, 103, .	3.3	33
32	Measurement configuration optimization for accurate grating reconstruction by Mueller matrix polarimetry. Journal of Micro/ Nanolithography, MEMS, and MOEMS, 2013, 12, 033013.	0.9	30
33	Layer-dependent dielectric permittivity of topological insulator Bi2Se3 thin films. Applied Surface Science, 2020, 509, 144822.	6.1	29
34	Improved measurement accuracy in optical scatterometry using correction-based library search. Applied Optics, 2013, 52, 6726.	1.8	28
35	Real-Time Estimation of Time-Varying Bending Modes Using Fiber Bragg Grating Sensor Arrays. AIAA Journal, 2013, 51, 178-185.	2.6	25
36	Robust solution to the inverse problem in optical scatterometry. Optics Express, 2014, 22, 22031.	3.4	25

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37	Optical wafer defect inspection at the 10 nm technology node and beyond. International Journal of Extreme Manufacturing, 2022, 4, 032001.	12.7	25
38	Comprehensive characterization of a general composite waveplate by spectroscopic Mueller matrix polarimetry. Optics Express, 2018, 26, 25408.	3.4	24
39	Study of the retardance of a birefringent waveplate at tilt incidence by Mueller matrix ellipsometer. Journal of Optics (United Kingdom), 2018, 20, 015401.	2.2	23
40	Depolarization artifacts in dual rotating-compensator Mueller matrix ellipsometry. Journal of Optics (United Kingdom), 2016, 18, 055701.	2.2	22
41	Complete Dielectric Tensor and Giant Optical Anisotropy in Quasi-One-Dimensional ZrTe₅. , 2021, 3, 525-534.		22
42	Development of a spectroscopic Mueller matrix imaging ellipsometer for nanostructure metrology. Review of Scientific Instruments, 2016, 87, 053707.	1.3	21
43	Mueller matrix ellipsometric detection of profile asymmetry in nanoimprinted grating structures. Journal of Applied Physics, 2014, 116, 194305.	2.5	19
44	A Dynamical Compact Model of Diffusive and Drift Memristors for Neuromorphic Computing. Advanced Electronic Materials, 2022, 8, 2100696.	5.1	19
45	An analytical method to determine the complex refractive index of an ultra-thin film by ellipsometry. Applied Surface Science, 2020, 507, 145091.	6.1	18
46	High-speed Mueller matrix ellipsometer with microsecond temporal resolution. Optics Express, 2020, 28, 10873.	3.4	18
47	Effect of voltage polarity and amplitude on electroforming of TiO2 based memristive devices. Nanoscale, 2013, 5, 3257.	5.6	17
48	Accurate alignment of optical axes of a biplate using a spectroscopic Mueller matrix ellipsometer. Applied Optics, 2016, 55, 3935.	2.1	16
49	Simulation method for study on outcoupling characteristics of stratified anisotropic OLEDs. Optics Express, 2019, 27, A1014.	3.4	16
50	Calibration of polarization effect of a high-numerical-aperture objective lens with Mueller matrix polarimetry. Measurement Science and Technology, 2019, 30, 025201.	2.6	15
51	Improved deep-etched multilayer grating reconstruction by considering etching anisotropy and abnormal errors in optical scatterometry. Optics Letters, 2015, 40, 471.	3.3	14
52	Large Memristor Crossbars for Analog Computing. , 2018, , .		14
53	Improvement of resistive switching uniformity for TiO₂-based memristive devices by introducing a thin HfO₂ layer. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2013, 31, 06FA04.	1.2	13
54	Single- and bi-layer memristive devices with tunable properties using TiOx switching layers deposited by reactive sputtering. Applied Physics Letters, 2014, 104, .	3.3	13

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55	Towards understanding the detection of profile asymmetry from Mueller matrix differential decomposition. Journal of Applied Physics, 2015, 118, .	2.5	12
56	2D Niobium-Doped MoS₂: Tuning the Exciton Transitions and Potential Applications. ACS Applied Electronic Materials, 2021, 3, 2564-2572.	4.3	12
57	Characterization of beam splitters in the calibration of a six-channel Stokes polarimeter. Journal of Optics (United Kingdom), 2018, 20, 125606.	2.2	11
58	Threshold Switching: Threshold Switching of Ag or Cu in Dielectrics: Materials, Mechanism, and Applications (Adv. Funct. Mater. 6/2018). Advanced Functional Materials, 2018, 28, 1870036.	14.9	10
59	Characterization of dielectric function for metallic thin films based on ellipsometric parameters and reflectivity. Physica Scripta, 2019, 94, 085802.	2.5	10
60	Investigation of Spatial Chirp Induced by Misalignments in a Parallel Grating Pair Pulse Stretcher. Applied Sciences (Switzerland), 2020, 10, 1584.	2.5	10
61	Complex optical conductivity of Bi2Se3 thin film: Approaching two-dimensional limit. Applied Physics Letters, 2021, 118, .	3.3	10
62	Nondestructive analysis of lithographic patterns with natural line edge roughness from Mueller matrix ellipsometric data. Applied Surface Science, 2016, 388, 524-530.	6.1	9
63	Metrology of Nanostructures by Tomographic Mueller-Matrix Scatterometry. Applied Sciences (Switzerland), 2018, 8, 2583.	2.5	9
64	Modal estimation by FBG for flexible structures attitude control. IEEE Transactions on Aerospace and Electronic Systems, 2014, 50, 2642-2653.	4.7	8
65	Strain-optical behavior of polyethylene terephthalate film during uniaxial stretching investigated by Mueller matrix ellipsometry. Polymer, 2019, 182, 121842.	3.8	8
66	Nondestructive investigation on the nanocomposite ordering upon holography using Mueller matrix ellipsometry. European Polymer Journal, 2019, 110, 123-129.	5.4	8
67	Thickness dependent native oxidation kinetics observation and prediction for Cu films using spectroscopic ellipsometry. Applied Surface Science, 2020, 518, 146236.	6.1	8
68	Performance optimization of tandem organic solar cells at varying incident angles based on optical analysis method. Optics Express, 2020, 28, 2381.	3.4	8
69	Probing optimal measurement configuration for optical scatterometry by the multi-objective genetic algorithm. Measurement Science and Technology, 2018, 29, 045014.	2.6	7
70	Remote Absolute Roll-Angle Measurement in Range of 180Â° Based on Polarization Modulation. Nanomanufacturing and Metrology, 2020, 3, 228-235.	3.0	7
71	Reconstruction of finite deep sub-wavelength nanostructures by Mueller-matrix scattered-field microscopy. Optics Express, 2021, 29, 32158.	3.4	7
72	Robust overlay metrology with differential Mueller matrix calculus. Optics Express, 2017, 25, 8491.	3.4	6

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73	Measurement configuration optimization for dynamic metrology using Stokes polarimetry. Measurement Science and Technology, 2018, 29, 054010.	2.6	6
74	Dynamic characteristics of nematic liquid crystal variable retarders investigated by a high-speed polarimetry. Journal of Optics (United Kingdom), 2019, 21, 065605.	2.2	6
75	Characterization of Volume Gratings Based on Distributed Dielectric Constant Model Using Mueller Matrix Ellipsometry. Applied Sciences (Switzerland), 2019, 9, 698.	2.5	6
76	Learning with Resistive Switching Neural Networks. , 2019, , .		6
77	On the limits of low-numerical-aperture imaging scatterometry. Optics Express, 2020, 28, 8445.	3.4	6
78	Nonuniform depolarization properties of typical nanostructures and potential applications. Optics Letters, 2020, 45, 1910.	3.3	6
79	Superachromatic polarization modulator for stable and complete polarization measurement over an ultra-wide spectral range. Optics Express, 2022, 30, 15113.	3.4	6
80	Device engineering and CMOS integration of nanoscale memristors. , 2014, , .		5
81	Improved nanostructure reconstruction by performing data refinement in optical scatterometry. Journal of Optics (United Kingdom), 2016, 18, 015605.	2.2	5
82	Diffraction based single pulse measurement of air ionization dynamics induced by femtosecond laser. Optics Express, 2021, 29, 18601.	3.4	5
83	Multiobjective optimization for target design in diffraction-based overlay metrology. Applied Optics, 2020, 59, 2897.	1.8	5
84	Attitude metrology based on the field-of-view effect of birefringence using high-speed polarimetry. Optics Letters, 2020, 45, 2074.	3.3	5
85	Wide field-of-view angle linear retarder with an ultra-flat retardance response. Optics Letters, 2019, 44, 3026.	3.3	5
86	Unconventional computing with diffusive memristors. , 2018, , .		4
87	Dependence-Analysis-Based Data-Refinement in Optical Scatterometry for Fast Nanostructure Reconstruction. Applied Sciences (Switzerland), 2019, 9, 4091.	2.5	4
88	Femtosecond laser induced damaging inside fused silica detected by a single-pulse ultrafast measurement system. Optics Express, 2022, 30, 26111.	3.4	4
89	Cellâ€“substrate interaction with cell-membrane-stress dependent adhesion. Journal of Biomechanics, 2012, 45, 209-217.	2.1	3
90	Reduced-basis boundary element method for fast electromagnetic field computation. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2017, 34, 2231.	1.5	3

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91	Dynamic modulation performance of ferroelectric liquid crystal polarization rotators and Mueller matrix polarimeter optimization. Frontiers of Mechanical Engineering, 2020, 15, 256-264.	4.3	3
92	Multi-objective collaborative optimization strategy for efficiency and chromaticity of stratified OLEDs based on an optical simulation method and sensitivity analysis. Optics Express, 2020, 28, 27532.	3.4	3
93	Force-moment line element method for flexible slender bodies in Stokes flow. Physical Review E, 2013, 88, 033306.	2.1	2
94	Forceâ€“moment line element method for Stokes flow around a slender body. Engineering Analysis With Boundary Elements, 2014, 44, 120-129.	3.7	2
95	Fast and accurate solution of inverse problem in optical scatterometry using heuristic search and robust correction. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2015, 33, .	1.2	2
96	Measurement errors induced by axis tilt of biplates in dual-rotating compensator Mueller matrix ellipsometers. , 2015, , .		2
97	Scalable 3D Ta:SiO x Memristive Devices. Advanced Electronic Materials, 2019, 5, 1800958.	5.1	2
98	Characterization of a liquid crystal variable retarder by Mueller matrix ellipsometry. , 2019, , .		2
99	Optimal design of wide-view-angle waveplate used for polarimetric diagnosis of lithography system. , 2016, , .		1
100	Improved Fourier transformation based method for accurate phase and amplitude retrieval in spectral interferometry. Journal of Optics (United Kingdom), 0, , .	2.2	1
101	Switching layer engineering for memristive devices. , 2014, , .		0
102	Data refinement for robust solution to the inverse problem in optical scatterometry. Proceedings of SPIE, 2015, , .	0.8	0
103	A Brewster incidence method for shocked dynamic metrology of transparent materials and its error evaluation. AIP Advances, 2020, 10, 105203.	1.3	0
104	Annealing temperature dependence of optical and structural properties of Cu films. Physical Review B, 2020, 101, .	3.2	0
105	Effective medium approximation based interpretation for Mueller matrix spectra of polydimethylsiloxane gratings. Journal of Optics (United Kingdom), 2021, 23, 025403.	2.2	0
106	Beam collapse and refractive index changes inside fused silica induced by loosely focused femtosecond laser. Journal of Optics (United Kingdom), 2021, 23, 075402.	2.2	0
107	Error analysis of a photoelastic-modulated Mueller matrix ellipsometer. , 2021, , .		0
108	Concentric ring structure on the front surface of fused silica induced by a focused femtosecond pulse laser. Precision Engineering, 2022, 74, 242-246.	3.4	0