Tian Gu

List of Publications by Year
in descending order

122 papers	4,035 citations	172457 29 h-index	123424 61 g-index
126 all docs	126 docs citations	126 times ranked	3401 citing authors

#	Article	IF	Citations
1	Broadband transparent optical phase change materials for high-performance nonvolatile photonics. Nature Communications, 2019, 10, 4279.	12.8	349
2	Electrically reconfigurable non-volatile metasurface using low-loss optical phase-change material. Nature Nanotechnology, 2021, 16, 661-666.	31.5	298
3	Mid-infrared integrated photonics on silicon: a perspective. Nanophotonics, 2017, 7, 393-420.	6.0	280
4	Broadband nonvolatile photonic switching based on optical phase change materials: beyond the classical figure-of-merit. Optics Letters, 2018, 43, 94.	3.3	222
5	Reconfigurable all-dielectric metalens with diffraction-limited performance. Nature Communications, 2021, 12, 1225.	12.8	221
6	A Deep Learning Approach for Objective-Driven All-Dielectric Metasurface Design. ACS Photonics, 2019, 6, 3196-3207.	6.6	212
7	Chalcogenide glass-on-graphene photonics. Nature Photonics, 2017, 11, 798-805.	31.4	190
8	Passive directional sub-ambient daytime radiative cooling. Nature Communications, 2018, 9, 5001.	12.8	179
9	High-performance and scalable on-chip digital Fourier transform spectroscopy. Nature Communications, 2018, 9, 4405.	12.8	173
10	Ultra-thin high-efficiency mid-infrared transmissive Huygens meta-optics. Nature Communications, 2018, 9, 1481.	12.8	126
11	Single-Element Diffraction-Limited Fisheye Metalens. Nano Letters, 2020, 20, 7429-7437.	9.1	104
12	Monolithically integrated stretchable photonics. Light: Science and Applications, 2018, 7, 17138-17138.	16.6	94
13	Design for quality: reconfigurable flat optics based on active metasurfaces. Nanophotonics, 2020, 9, 3505-3534.	6.0	87
14	Chip-scale broadband spectroscopic chemical sensing using an integrated supercontinuum source in a chalcogenide glass waveguide. Photonics Research, 2018, 6, 506.	7.0	78
15	Multifunctional Metasurface Design with a Generative Adversarial Network. Advanced Optical Materials, 2021, 9, 2001433.	7.3	78
16	Myths and truths about optical phase change materials: A perspective. Applied Physics Letters, 2021, 118, .	3.3	76
17	Multiâ€Level Electroâ€Thermal Switching of Optical Phaseâ€Change Materials Using Graphene. Advanced Photonics Research, 2021, 2, 2000034.	3.6	75
18	Deep learning modeling approach for metasurfaces with high degrees of freedom. Optics Express, 2020, 28, 31932.	3.4	73

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19	A Fully-Integrated Flexible Photonic Platform for Chip-to-Chip Optical Interconnects. Journal of Lightwave Technology, 2013, 31, 4080-4086.	4.6	57
20	High-performance flexible waveguide-integrated photodetectors. Optica, 2018, 5, 44.	9.3	54
21	Unpaired Stain Transfer Using Pathology-Consistent Constrained Generative Adversarial Networks. IEEE Transactions on Medical Imaging, 2021, 40, 1977-1989.	8.9	51
22	On-Chip Infrared Spectroscopic Sensing: Redefining the Benefits of Scaling. IEEE Journal of Selected Topics in Quantum Electronics, 2017, 23, 340-349.	2.9	49
23	Flexible and Stretchable Photonics: The Next Stretch of Opportunities. ACS Photonics, 2020, 7, 2618-2635.	6.6	49
24	In situ mapping of activity distribution and oxygen evolution reaction in vanadium flow batteries. Nature Communications, 2019, 10, 5286.	12.8	45
25	Optical rotation based chirality detection of enantiomers via weak measurement in frequency domain. Applied Physics Letters, 2018, 112, .	3.3	41
26	Low loss, flexible single-mode polymer photonics. Optics Express, 2019, 27, 11152.	3.4	41
27	On-chip optical tweezers based on freeform optics. Optica, 2021, 8, 409.	9.3	37
28	Micro-concentrators for a microsystems-enabled photovoltaic system. Optics Express, 2014, 22, A521.	3.4	36
29	A chiral sensor based on weak measurement for the determination of Proline enantiomers in diverse measuring circumstances. Biosensors and Bioelectronics, 2018, 110, 103-109.	10.1	36
30	Multiscale free-space optical interconnects for intrachip global communication: motivation, analysis, and experimental validation. Applied Optics, 2006, 45, 6358.	2.1	29
31	Optimization of a quantum weak measurement system with its working areas. Optics Express, 2018, 26, 21119.	3.4	29
32	Deep Convolutional Neural Networks to Predict Mutual Coupling Effects in Metasurfaces. Advanced Optical Materials, 2022, 10, 2102113.	7.3	28
33	A new twist on glass: A brittle material enabling flexible integrated photonics. International Journal of Applied Glass Science, 2017, 8, 61-68.	2.0	27
34	Fast and accurate decoding of Raman spectra-encoded suspension arrays using deep learning. Analyst, The, 2019, 144, 4312-4319.	3.5	27
35	Broadband Transparent Optical Phase Change Materials. , 2017, , .		25
36	Nonlinear Midâ€Infrared Metasurface based on a Phaseâ€Change Material. Laser and Photonics Reviews, 2021, 15, 2000373.	8.7	25

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37	Transient Tap Couplers for Wafer-Level Photonic Testing Based on Optical Phase Change Materials. ACS Photonics, 2021, 8, 1903-1908.	6.6	24
38	Optical Free-Form Couplers for High-density Integrated Photonics (OFFCHIP): A Universal Optical Interface. Journal of Lightwave Technology, 2020, 38, 3358-3365.	4.6	22
39	Multifunctional weak measurement system that can measure the refractive index and optical rotation of a solution. Applied Physics Letters, 2019, 114, .	3.3	21
40	Design of broadband and wide field-of-view metalenses. Optics Letters, 2021, 46, 5735-5738.	3.3	18
41	Deep neural network enabled active metasurface embedded design. Nanophotonics, 2022, 11, 4149-4158.	6.0	18
42	Reconfigurable Parfocal Zoom Metalens. Advanced Optical Materials, 2022, 10, .	7.3	18
43	Hybrid micro-scale CPV/PV architecture. , 2014, , .		17
44	Real-time, in situ probing of gamma radiation damage with packaged integrated photonic chips. Photonics Research, 2020, 8, 186.	7.0	15
45	Wafer integrated microâ€scale concentrating photovoltaics. Progress in Photovoltaics: Research and Applications, 2018, 26, 651-658.	8.1	14
46	Optimization of a quantum weak measurement system with digital filtering technology. Applied Optics, 2018, 57, 7956.	1.8	13
47	High-performance graphene-integrated thermo-optic switch: design and experimental validation [Invited]. Optical Materials Express, 2020, 10, 387.	3.0	13
48	Spectral-optical-tweezer-assisted fluorescence multiplexing system for QDs-encoded bead-array bioassay. Biosensors and Bioelectronics, 2019, 129, 107-117.	10.1	12
49	Compact and Fabrication-Tolerant Waveguide Bends Based on Quadratic Reflectors. Journal of Lightwave Technology, 2020, 38, 4368-4373.	4.6	12
50	Understanding aging in chalcogenide glass thin films using precision resonant cavity refractometry. Optical Materials Express, 2019, 9, 2252.	3.0	12
51	Detection of Macromolecular Content in a Mixed Solution of Protein Macromolecules and Small Molecules Using a Weak Measurement Linear Differential System. Analytical Chemistry, 2019, 91, 11576-11581.	6.5	11
52	Wafer-level Integrated Micro-Concentrating Photovoltaics. , 2016, , .		10
53	Chip-scale integrated optical interconnects: a key enabler for future high-performance computing. Proceedings of SPIE, 2012, , .	0.8	9
54	Chip-Level Multiple Quantum Well Modulator-Based Optical Interconnects. Journal of Lightwave Technology, 2013, 31, 4166-4174.	4.6	9

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55	Reversible Switching of Optical Phase Change Materials Using Graphene Microheaters. , 2019, , .		9
56	Seamless Hybrid-integrated Interconnect NEtwork (SHINE). , 2019, , .		9
57	Prismatic Coupling Structure for Intrachip Global Communication. IEEE Journal of Quantum Electronics, 2009, 45, 388-395.	1.9	8
58	Low-Voltage, Coupled Multiple Quantum Well Electroreflective Modulators Towards Ultralow Power Inter-Chip Optical Interconnects. Journal of Lightwave Technology, 2020, 38, 3414-3421.	4.6	8
59	Design of Hybrid Plasmonic Multi-Quantum-Well Electro-Reflective Modulators Towards <100 fJ/bit Photonic Links. IEEE Journal of Selected Topics in Quantum Electronics, 2021, 27, 1-8.	2.9	8
60	Large-area optical metasurface fabrication using nanostencil lithography. Optics Letters, 2021, 46, 2324.	3.3	8
61	Imaging Sensor for the Detection of the Flow Battery Via Weak Value Amplification. Analytical Chemistry, 2021, 93, 12914-12920.	6.5	7
62	Compact spectrum splitter for laterally arrayed multi-junction concentrator photovoltaic modules. Optics Letters, 2019, 44, 3274.	3.3	7
63	Gold-nanorod-enhanced Raman spectroscopy encoded micro-quartz pieces for the multiplex detection of biomolecules. Analytical and Bioanalytical Chemistry, 2019, 411, 5509-5518.	3.7	6
64	Hybrid chip-scale optical interconnects using multiple quantum well devices bonded to silicon. , 2012, , .		5
65	Rapid Separation of Enantiomeric Impurities in Chiral Molecules by a Self-Referential Weak Measurement System. Sensors, 2018, 18, 3788.	3.8	5
66	Electrically-switchable foundry-processed phase change photonic devices. , 2021, , .		5
67	Demonstration of chip-scale optical interconnects based on the integration of polymer waveguides and multiple quantum well modulators on silicon. , 2011, , .		4
68	Micro-concentrator module for Microsystems-Enabled Photovoltaics: Optical performance characterization, modelling and analysis. , 2015, , .		4
69	Nondisturbing transverse acoustic sensor based on weak measurement in Machâ€“Zehnder interferometer. Optical Engineering, 2017, 56, 034107.	1.0	4
70	Dual-spectra encoded suspension array using reversed-phase microemulsion UV curing and electrostatic self-assembling. RSC Advances, 2018, 8, 21272-21279.	3.6	4
71	The real-time determination of d- and l-lactate based on optical weak measurement. Analytical Methods, 2019, 11, 2223-2230.	2.7	4
72	High-Performance Single-Mode Polymer Waveguide Devices for Chip-Scale Optical Interconnects. , 2019, , .		3

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73	Chalcogenide glass metasurfaces from fluid instabilities. Nature Nanotechnology, 2019, 14, 309-311.	31.5	3
74	Spectrum Intensity Ratio Detection for Frequency Domain Weak Measurement System. IEEE Photonics Journal, 2020, 12, 1-12.	2.0	3
75	Specific detection of glucose by an optical weak measurement sensor. Biomedical Optics Express, 2021, 12, 5128.	2.9	3
76	Single-layer Planar Metasurface Lens with >170Â° Field of View. , 2019, , .		3
77	Electrically Reconfigurable Nonvolatile Metasurface Using Optical Phase Change Materials. , 2019, , .		3
78	Reshaping light: reconfigurable photonics enabled by broadband low-loss optical phase change materials. , 2019, , .		3
79	Designing nonvolatile integrated photonics with low-loss optical phase change materials. , 2019, , .		3
80	On-chip guided-wave optical interconnects using multiple quantum well modulators. , 2011, , .		2
81	Chip-scale optical interconnects based on hybrid integrated multiple quantum well devices. , 2012, , .		2
82	Integrated free-space optical interconnects: All optical communications on- and off-chip. , 2012, , .		2
83	Energy-per-bit advantages of chip-scale hybrid-integrated optical interconnects using surface-normal electro-aborption MQW modulators. , 2013, , .		2
84	Wafer Integrated Micro-scale Concentrating Photovoltaics. , 2017, , .		2
85	Hydrogel-based microbeads for Raman-encoded suspension array using the reversed-phase suspension polymerization method and ultraviolet light curing. Analytical and Bioanalytical Chemistry, 2020, 412, 2731-2741.	3.7	2
86	Coupling Structure for Intrachip Optical Global Communication: Design and Simulation. , 2006, , .		1
87	Vertical optical power delivery and inter-chip interconnect concept based on surface-normal MQW modulators. , 2013, , .		1
88	Chip-to-chip optical interconnects based on flexible integrated photonics. Proceedings of SPIE, 2014, , .	0.8	1
89	Ultra-thin, high-efficiency mid-infrared Huygens metasurface optics. , 2018, , .		1
90	A Differential Detection Method Based on a Linear Weak Measurement System. Sensors, 2019, 19, 2473.	3.8	1

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91	Micro-Prism Spectrum Splitting Optics for Lateral-Arrayed Multi Junction Micro CPV. , 2019, , .		1
92	Multifunctional Metasurface Design with a Generative Adversarial Network (Advanced Optical) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 702	7.3	1
93	High-Throughput Chiral Molecule Determination Based on Multi-Channel Weak Measurement. IEEE Photonics Journal, 2021, 13, 1-12.	2.0	1
94	Reconfigurable Mid-infrared Photonics. , 2021, , .		1
95	A Deep Learning Approach to Explore the Mutual Coupling Effects in Metasurfaces. , 2021, , .		1
96	Optical demodulation system for digitally encoded suspension array in fluoroimmunoassay. Journal of Biomedical Optics, 2017, 22, 1.	2.6	1
97	Stretchable Integrated Microphotonics. , 2018, , .		1
98	Wide Field-of-view Achromatic Metalenses. , 2021, , .		1
99	Reconfigurable photonics enabled by optical phase change materials (Conference Presentation). , 2018, , .		1
100	Chip-scale high-performance digital Fourier Transform (dFT) spectrometers. , 2019, , .		1
101	Optical phase-change materials (O-PCMs) for reconfigurable photonics. , 2020, , .		1
102	Hybrid Integrated Photonic Platforms: feature issue introduction. Optical Materials Express, 2021, 11, 4095.	3.0	1
103	Ultra-broadband, high-efficiency, and wafer-scale fiber-to-chip coupling using free-form micro-optical reflectors. , 2022, , .		1
104	Effects of Electrode Insertion Depth on Mandarin Speech Understanding Using Combined Electric and Acoustic Stimulation. , 2011, , .		0
105	Surface-normal electro-aborption MQW modulator-based chip-scale optical interconnects. , 2013, , .		0
106	A fully-integrated flexible photonic platform for chip-to-chip optical interconnects. , 2013, , .		0
107	Suspended chalcogenide microcavities for ultra-sensitive chemical detection. , 2016, , .		0
108	Enhanced Interferometric Weak Value Amplification With Multiple Reflection. IEEE Photonics Technology Letters, 2019, 31, 1557-1560.	2.5	0

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109	Spectral-Domain Phase Microscopy for Thickness Encoded Suspension Array. IEEE Photonics Technology Letters, 2020, 32, 461-464.	2.5	0
110	A flexible polymer waveguide platform with low-loss optical interfaces. , 2021, , .		0
111	Optimization of the Weak Measurement System by Determining the Optimal Total Phase Difference. IEEE Photonics Journal, 2021, 13, 1-8.	2.0	0
112	Chip-scale Digital Fourier Transform Spectroscopy. , 2019, , .		0
113	Integrated photonics put at full stretch: flexible and stretchable photonic devices enabled by optical and mechanical co-design. , 2019, , .		0
114	What makes the best chip-scale photonic sensor?. , 2020, , .		0
115	Compact and Fabrication-Tolerant Single-Mode Polymer Waveguide Bends. , 2020, , .		0
116	Real-time, in-situ monitoring of Gamma radiation effects in packaged silicon photonic chips. , 2020, , .		0
117	Enhanced Third-Harmonic Generation by a Mid-Infrared Phase-Change Metasurface. , 2021, , .		0
118	Ge2Sb2Se4Te1 Metasurface for Enhancing Third-Harmonic Generation in the Mid-Infrared. , 2021, , .		0
119	A Deep Neural Network Near-Universal Dielectric Meta-Atom Generator. , 2021, , .		0
120	Integrated Quadratic Reflectors for High-Performance Optical Interconnects. , 2020, , .		0
121	Understanding wide field-of-view metalenses. , 2022, , .		0
122	Phase change materials: the 'silicon' for analog photonic computing?. , 2022, , .		0