C David Wright

List of Publications by Year
in descending order

111 papers	8,561 citations	134610 34 h-index	51423 90 g-index
115 all docs	115 docs citations	115 times ranked	6898 citing authors

#	Article	IF	Citations
1	Single-Step Fabrication of High-Performance Extraordinary Transmission Plasmonic Metasurfaces Employing Ultrafast Lasers. ACS Applied Materials & Interfaces, 2022, 14, 3446-3454.	4.0	8
2	Broadband photonic tensor core with integrated ultra-low crosstalk wavelength multiplexers. Nanophotonics, 2022, 11, 4063-4072.	2.9	28
3	Artificial Biphasic Synapses Based on Nonvolatile Phaseâ€Change Photonic Memory Cells. Physica Status Solidi - Rapid Research Letters, 2022, 16, .	1.2	11
4	Electronically Reconfigurable Photonic Switches Incorporating Plasmonic Structures and Phase Change Materials. Advanced Science, 2022, 9, e2200383.	5.6	29
5	Chalcogenide optomemristors for multi-factor neuromorphic computation. Nature Communications, 2022, 13, 2247.	5.8	22
6	An integrated photonics engine for unsupervised correlation detection. Science Advances, 2022, 8, .	4.7	8
7	Propagation dynamics of the solidâ€“liquid interface in Ge upon ns and fs laser irradiation. Journal Physics D: Applied Physics, 2022, 55, 365104.	1.3	4
8	Polarization-selective reconfigurability in hybridized-active-dielectric nanowires. Science Advances, 2022, 8, .	4.7	15
9	Parallel convolutional processing using an integrated photonic tensor core. Nature, 2021, 589, 52-58.	13.7	723
10	System-Level Simulation for Integrated Phase-Change Photonics. Journal of Lightwave Technology, 2021, 39, 6392-6402.	2.7	6
11	Enhanced Performance and Diffusion Robustness of Phase-Change Metasurfaces via a Hybrid Dielectric/Plasmonic Approach. Nanomaterials, 2021, 11, 525.	1.9	11
12	A plasmonically enhanced route to faster and more energy-efficient phase-change integrated photonic memory and computing devices. Journal of Applied Physics, 2021, 129, .	1.1	20
13	Chalcogenide phase-change devices for neuromorphic photonic computing. Journal of Applied Physics, 2021, 129, .	1.1	35
14	Overcoming optical performance and diffusion issues in thermally tunable phase-change metasurfaces. , 2021, , .		0
15	Lithography-Free Fabrication of Extraordinary Transmission Plasmonic Metasurfaces Over Large Areas Employing Ultrafast Lasers. , 2021, , .		0
16	Photonics for artificial intelligence and neuromorphic computing. Nature Photonics, 2021, 15, 102-114.	15.6	764
17	Bismuth-based gap-plasmon metasurfaces for visible photonics with volatile tuning potential. , 2021, , .		0
18	Integrated 256 Cell Photonic Phase-Change Memory With 512-Bit Capacity. IEEE Journal of Selected Topics in Quantum Electronics, 2020, 26, 1-7.	1.9	54

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19	Hybrid silicon/phase-change metasurfaces and nanoantennas for active nanophotonics. Journal of Physics: Conference Series, 2020, 1461, 012164.	0.3	1
20	Tunable optical metasurfaces enabled by chalcogenide phase-change materials: from the visible to the THz. Journal of Optics (United Kingdom), 2020, 22, 114001.	1.0	45
21	On-chip sub-wavelength Bragg grating design based on novel low loss phase-change materials. Optics Express, 2020, 28, 16394.	1.7	39
22	Simple technique for determining the refractive index of phase-change materials using near-infrared reflectometry. Optical Materials Express, 2020, 10, 1675.	1.6	13
23	Performance characteristics of phase-change integrated silicon nitride photonic devices in the O and C telecommunications bands. Optical Materials Express, 2020, 10, 1778.	1.6	16
24	Experimental investigation of silicon and silicon nitride platforms for phase-change photonic in-memory computing. Optica, 2020, 7, 218.	4.8	58
25	Reconfigurable multilevel control of hybrid all-dielectric phase-change metasurfaces. Optica, 2020, 7, 476.	4.8	153
26	Experimental investigation of silicon and silicon nitride platforms for phase-change photonic in-memory computing: erratum. Optica, 2020, 7, 1804.	4.8	0
27	Simple technique for determining the refractive index of phase-change materials using near-infrared reflectometry. Optical Materials Express, 2020, 10, 1675.	1.6	2
28	Performance characteristics of phase-change integrated silicon nitride photonic devices in the O and C telecommunications bands. Optical Materials Express, 2020, 10, 1778.	1.6	2
29	A Nonvolatile Phaseâ€Change Metamaterial Color Display. Advanced Optical Materials, 2019, 7, 1801782.	3.6	97
30	Integrated phase-change photonic devices and systems. MRS Bulletin, 2019, 44, 721-727.	1.7	29
31	Behavioral modeling of integrated phase-change photonic devices for neuromorphic computing applications. APL Materials, 2019, 7, .	2.2	17
32	Tunable Volatility of Ge₂Sb₂Te₅ in Integrated Photonics. Advanced Functional Materials, 2019, 29, 1807571.	7.8	57
33	All-optical spiking neurosynaptic networks with self-learning capabilities. Nature, 2019, 569, 208-214.	13.7	847
34	In-memory computing on a photonic platform. Science Advances, 2019, 5, eaau5759.	4.7	238
35	Plasmonic nanogap enhanced phase-change devices with dual electrical-optical functionality. Science Advances, 2019, 5, eaaw2687.	4.7	131
36	Plasmonically-enhanced all-optical integrated phase-change memory. Optics Express, 2019, 27, 24724.	1.7	35

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37	Fast and reliable storage using a 5â€‰â€‰bit, nonvolatile photonic memory cell. Optica, 2019, 6, 1.	4.8	195
38	Integrated Phase-change Photonics: A Strategy for Merging Communication and Computing. , 2019, , .		1
39	All-photonic in-memory computing based on phase-change materials. , 2019, , .		0
40	10.1063/1.5111840.1. , 2019, , .		0
41	10.1063/1.5111840.2. , 2019, , .		0
42	A self-resetting spiking phase-change neuron. Nanotechnology, 2018, 29, 195202.	1.3	22
43	New routes to the functionalization patterning and manufacture of graphene-based materials for biomedical applications. Interface Focus, 2018, 8, 20170057.	1.5	13
44	Precise computing with imprecise devices. Nature Electronics, 2018, 1, 212-213.	13.1	7
45	Nonvolatile Reconfigurable Phaseâ€Change Metadevices for Beam Steering in the Near Infrared. Advanced Functional Materials, 2018, 28, 1704993.	7.8	187
46	Memristive effects in oxygenated amorphous carbon nanodevices. Nanotechnology, 2018, 29, 035201.	1.3	12
47	Humidityâ€Controlled Ultralow Power Layerâ€byâ€Layer Thinning, Nanopatterning and Bandgap Engineering of MoTe₂. Advanced Functional Materials, 2018, 28, 1804434.	7.8	23
48	Engineering Interface-Dependent Photoconductivity in Ge₂Sb₂Te₅ Nanoscale Devices. ACS Applied Materials & Interfaces, 2018, 10, 44906-44914.	4.0	19
49	Reconfigurable Nanophotonic Cavities with Nonvolatile Response. ACS Photonics, 2018, 5, 4644-4649.	3.2	32
50	Reconfigurable phase-change meta-absorbers with on-demand quality factor control. Optics Express, 2018, 26, 25567.	1.7	26
51	Deviceâ€Level Photonic Memories and Logic Applications Using Phaseâ€Change Materials. Advanced Materials, 2018, 30, e1802435.	11.1	129
52	Phase-Change Metasurfaces for Dyamic Beam Steering and Beam Shaping in the Infrared. , 2018, , .		10
53	Controlled switching of phase-change materials by evanescent-field coupling in integrated photonics [Invited]. Optical Materials Express, 2018, 8, 2455.	1.6	113
54	A New Facile Route to Flexible and Semiâ€Transparent Electrodes Based on Water Exfoliated Graphene and their Singleâ€Electrode Triboelectric Nanogenerator. Advanced Materials, 2018, 30, e1802953.	11.1	74

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55	Memory Devices: Device-Level Photonic Memories and Logic Applications Using Phase-Change Materials (Adv. Mater. 32/2018). Advanced Materials, 2018, 30, 1870238.	11.1	0
56	Can conventional phase-change memory devices be scaled down to single-nanometre dimensions?. Nanotechnology, 2017, 28, 035202.	1.3	25
57	Multilevel Ultrafast Flexible Nanoscale Nonvolatile Hybrid Graphene Oxideâ€"Titanium Oxide Memories. ACS Nano, 2017, 11, 3010-3021.	7.3	98
58	Temperature Evolution in Nanoscale Carbon-Based Memory Devices Due to Local Joule Heating. IEEE Nanotechnology Magazine, 2017, 16, 806-811.	1.1	15
59	Ultrahigh Storage Densities via the Scaling of Patterned Probe Phase-Change Memories. IEEE Nanotechnology Magazine, 2017, 16, 767-772.	1.1	13
60	Role of Charge Traps in the Performance of Atomically Thin Transistors. Advanced Materials, 2017, 29, 1605598.	11.1	46
61	A simple process for the fabrication of large-area CVD graphene based devices via selective <i>in situ</i> functionalization and patterning. 2D Materials, 2017, 4, 011010.	2.0	16
62	Calculating with light using a chip-scale all-optical abacus. Nature Communications, 2017, 8, 1256.	5.8	201
63	Highly Efficient Rubreneâ€"Graphene Chargeâ€Transfer Interfaces as Phototransistors in the Visible Regime. Advanced Materials, 2017, 29, 1702993.	11.1	58
64	On-chip photonic synapse. Science Advances, 2017, 3, e1700160.	4.7	399
65	All-optical signal processing using phase-change nanophotonics. , 2017, , .		3
66	Phase-change devices for simultaneous optical-electrical applications. Scientific Reports, 2017, 7, 9688.	1.6	28
67	Low Temperature Annealing Improves the Electrochromic and Degradation Behavior of Tungsten Oxide (WO_{<i>x</i>}) Thin Films. Journal of Physical Chemistry C, 2017, 121, 20498-20506.	1.5	30
68	Mixedâ€Mode Electroâ€Optical Operation of Ge₂Sb₂Te₅ Nanoscale Crossbar Devices. Advanced Electronic Materials, 2017, 3, 1700079.	2.6	24
69	Understanding the importance of the temperature dependence of viscosity on the crystallization dynamics in the Ge2Sb2Te5 phase-change material. Journal of Applied Physics, 2017, 121, 224504.	1.1	4
70	Nonvolatile Allâ€Optical 1 Ã— 2 Switch for Chipscale Photonic Networks. Advanced Optical Materials, 2017, 5, 1600346.	3.6	165
71	On-chip phase-change photonic memory and computing. , 2017, , .		1
72	Carbon-Based Resistive Memories. , 2016, , .		6

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73	Multi-level storage in non-volatile phase-change nanophotonic memories. , 2016, , .		2
74	Crystal-clear neuronal computing. Nature Nanotechnology, 2016, 11, 655-656.	15.6	7
75	Design of practicable phase-change metadevices for near-infrared absorber and modulator applications. Optics Express, 2016, 24, 13563.	1.7	81
76	Fast Highâ€Responsivity Fewâ€Layer MoTe₂ Photodetectors. Advanced Optical Materials, 2016, 4, 1750-1754.	3.6	109
77	Approximate Expressions for the Magnetic Potential and Fields of 2-D, Asymmetrical Magnetic Recording Heads. IEEE Transactions on Magnetics, 2016, 52, 1-12.	1.2	3
78	All-photonic nonvolatile memory cells using phase-change materials. , 2015, , .		0
79	A Model for Multilevel Phase-Change Memories Incorporating Resistance Drift Effects. IEEE Journal of the Electron Devices Society, 2015, 3, 15-23.	1.2	10
80	Integrated all-photonic non-volatile multi-level memory. Nature Photonics, 2015, 9, 725-732.	15.6	833
81	Accumulation-Based Computing Using Phase-Change Memories With FET Access Devices. IEEE Electron Device Letters, 2015, 36, 975-977.	2.2	52
82	Optimisation of readout performance of phase-change probe memory in terms of capping layer and probe tip. Electronic Materials Letters, 2014, 10, 1045-1049.	1.0	9
83	Onâ€Chip Photonic Memory Elements Employing Phaseâ€Change Materials. Advanced Materials, 2014, 26, 1372-1377.	11.1	189
84	Design of an optimised readout architecture for phase-change probe memory using Ge2Sb2Te5media. Japanese Journal of Applied Physics, 2014, 53, 028002.	0.8	4
85	An optoelectronic framework enabled by low-dimensional phase-change films. Nature, 2014, 511, 206-211.	13.7	599
86	A transfer function approach to reaction rate analysis with applications to phase-change materials and devices. Applied Physics Letters, 2013, 103, 113501.	1.5	0
87	Modelling the phaseâ€transition in phaseâ€change materials. Physica Status Solidi (B): Basic Research, 2013, 250, 944-948.	0.7	8
88	Observation of T2-like coherent optical phonons in epitaxial Ge2Sb2Te5/GaSb(001) films. Scientific Reports, 2013, 3, 2965.	1.6	7
89	Response to â€œComment on â€˜Threshold switching via electric field induced crystallization in phase change memory devicesâ€™â€•[Appl. Phys. Lett. 102, 236101 (2012)]. Applied Physics Letters, 2013, 102, 236102.	1.5	1
90	Beyond vonâ€Neumann Computing with Nanoscale Phaseâ€Change Memory Devices. Advanced Functional Materials, 2013, 23, 2248-2254.	7.8	336

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91	Role of Enthalpy and Relative Electric Permittivity in Electric Field Induced Nucleation. Materials Research Society Symposia Proceedings, 2012, 1431, 37.	0.1	0
92	Threshold switching via electric field induced crystallization in phase-change memory devices. Applied Physics Letters, 2012, 100, 253105.	1.5	26
93	Back Cover: Phase-change processors, memristors and memflectors (Phys. Status Solidi B 10/2012). Physica Status Solidi (B): Basic Research, 2012, 249, n/a-n/a.	0.7	0
94	Electricâ€fieldâ€assisted crystallisation in phaseâ€change materials. Physica Status Solidi (B): Basic Research, 2012, 249, 1897-1901.	0.7	5
95	Phaseâ€change processors, memristors and memflectors. Physica Status Solidi (B): Basic Research, 2012, 249, 1978-1984.	0.7	22
96	Crystallization of Ge2Sb2Te5 films by amplified femtosecond optical pulses. Journal of Applied Physics, 2012, 112, .	1.1	57
97	Scanning probe memories â€" Technology and applications. Current Applied Physics, 2011, 11, e104-e109.	1.1	13
98	Arithmetic and Biologicallyâ€Inspired Computing Using Phaseâ€Change Materials. Advanced Materials, 2011, 23, 3408-3413.	11.1	237
99	Electric field induced crystallization in phase-change materials for memory applications. Applied Physics Letters, 2011, 98, .	1.5	33
100	Determination of the anisotropic elastic properties of Ge1Sb2Te4. Applied Physics Letters, 2011, 98, 231911.	1.5	5
101	The Design of Rewritable Ultrahigh Density Scanning-Probe Phase-Change Memories. IEEE Nanotechnology Magazine, 2011, 10, 900-912.	1.1	53
102	Write strategies for multiterabit per square inch scanned-probe phase-change memories. Applied Physics Letters, 2010, 97, 173104.	1.5	25
103	Phase-change RAM modelling and design via a Gillespie-type cellular automata approach. , 2010, , .		1
104	Ultrafast heating and resolution of recorded crystalline marks in phase-change media. Journal of Applied Physics, 2008, 104, 104912.	1.1	4
105	Fast simulation of phase-change processes in chalcogenide alloys using a Gillespie-type cellular automata approach. Journal of Applied Physics, 2008, 104, .	1.1	31
106	The effect of thermal anisotropies during crystallization in phase-change recording media. Journal of Applied Physics, 2008, 104, 044901.	1.1	2
107	Master-equation approach to understanding multistate phase-change memories and processors. Applied Physics Letters, 2007, 90, 063113.	1.5	22
108	An analytical model for nanoscale electrothermal probe recording on phase-change media. Journal of Applied Physics, 2006, 99, 034301.	1.1	16

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109	A slope-theory approach to electrical probe recording on phase-change media. Journal of Applied Physics, 2005, 97, 103537.	1.1	14
110	Models for phase-change of Ge2Sb2Te5 in optical and electrical memory devices. Journal of Applied Physics, 2004, 95, 504-511.	1.1	217
111	Understanding the Electro-thermal and Phase-transformation Processes in Phase-change Materials for Data Storage Applications. Materials Research Society Symposia Proceedings, 2003, 803, 73.	0.1	4