

C David Wright

List of Publications by Year in descending order

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Version: 2024-02-01

111
papers

8,561
citations

117625

34
h-index

45317

90
g-index

115
all docs

115
docs citations

115
times ranked

5918
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.	8.0	8
2	Broadband photonic tensor core with integrated ultra-low crosstalk wavelength multiplexers. Nanophotonics, 2022, 11, 4063-4072.	6.0	28
3	Artificial Biphasic Synapses Based on Nonvolatile Phase-Change Photonic Memory Cells. Physica Status Solidi - Rapid Research Letters, 2022, 16, .	2.4	11
4	Electronically Reconfigurable Photonic Switches Incorporating Plasmonic Structures and Phase Change Materials. Advanced Science, 2022, 9, e2200383.	11.2	29
5	Chalcogenide optomemristors for multi-factor neuromorphic computation. Nature Communications, 2022, 13, 2247.	12.8	22
6	An integrated photonics engine for unsupervised correlation detection. Science Advances, 2022, 8, .	10.3	8
7	Propagation dynamics of the solid-liquid interface in Ge upon ns and fs laser irradiation. Journal Physics D: Applied Physics, 2022, 55, 365104.	2.8	4
8	Polarization-selective reconfigurability in hybridized-active-dielectric nanowires. Science Advances, 2022, 8, .	10.3	15
9	Parallel convolutional processing using an integrated photonic tensor core. Nature, 2021, 589, 52-58.	27.8	723
10	System-Level Simulation for Integrated Phase-Change Photonics. Journal of Lightwave Technology, 2021, 39, 6392-6402.	4.6	6
11	Enhanced Performance and Diffusion Robustness of Phase-Change Metasurfaces via a Hybrid Dielectric/Plasmonic Approach. Nanomaterials, 2021, 11, 525.	4.1	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, .	2.5	20
13	Chalcogenide phase-change devices for neuromorphic photonic computing. Journal of Applied Physics, 2021, 129, .	2.5	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.	31.4	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.	2.9	54

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19	Hybrid silicon/phase-change metasurfaces and nanoantennas for active nanophotonics. Journal of Physics: Conference Series, 2020, 1461, 012164.	0.4	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.	2.2	45
21	On-chip sub-wavelength Bragg grating design based on novel low loss phase-change materials. Optics Express, 2020, 28, 16394.	3.4	39
22	Simple technique for determining the refractive index of phase-change materials using near-infrared reflectometry. Optical Materials Express, 2020, 10, 1675.	3.0	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.	3.0	16
24	Experimental investigation of silicon and silicon nitride platforms for phase-change photonic in-memory computing. Optica, 2020, 7, 218.	9.3	58
25	Reconfigurable multilevel control of hybrid all-dielectric phase-change metasurfaces. Optica, 2020, 7, 476.	9.3	153
26	Experimental investigation of silicon and silicon nitride platforms for phase-change photonic in-memory computing: erratum. Optica, 2020, 7, 1804.	9.3	0
27	Simple technique for determining the refractive index of phase-change materials using near-infrared reflectometry. Optical Materials Express, 2020, 10, 1675.	3.0	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.	3.0	2
29	A Nonvolatile Phase-Change Metamaterial Color Display. Advanced Optical Materials, 2019, 7, 1801782.	7.3	97
30	Integrated phase-change photonic devices and systems. MRS Bulletin, 2019, 44, 721-727.	3.5	29
31	Behavioral modeling of integrated phase-change photonic devices for neuromorphic computing applications. APL Materials, 2019, 7, .	5.1	17
32	Tunable Volatility of Ge ₂ Sb ₂ Te ₅ in Integrated Photonics. Advanced Functional Materials, 2019, 29, 1807571.	14.9	57
33	All-optical spiking neurosynaptic networks with self-learning capabilities. Nature, 2019, 569, 208-214.	27.8	847
34	In-memory computing on a photonic platform. Science Advances, 2019, 5, eaau5759.	10.3	238
35	Plasmonic nanogap enhanced phase-change devices with dual electrical-optical functionality. Science Advances, 2019, 5, eaaw2687.	10.3	131
36	Plasmonically-enhanced all-optical integrated phase-change memory. Optics Express, 2019, 27, 24724.	3.4	35

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37	Fast and reliable storage using a 5-bit, nonvolatile photonic memory cell. <i>Optica</i> , 2019, 6, 1.	9.3	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. <i>Nanotechnology</i> , 2018, 29, 195202.	2.6	22
43	New routes to the functionalization patterning and manufacture of graphene-based materials for biomedical applications. <i>Interface Focus</i> , 2018, 8, 20170057.	3.0	13
44	Precise computing with imprecise devices. <i>Nature Electronics</i> , 2018, 1, 212-213.	26.0	7
45	Nonvolatile Reconfigurable Phase-Change Metadevices for Beam Steering in the Near Infrared. <i>Advanced Functional Materials</i> , 2018, 28, 1704993.	14.9	187
46	Memristive effects in oxygenated amorphous carbon nanodevices. <i>Nanotechnology</i> , 2018, 29, 035201.	2.6	12
47	Humidity-Controlled Ultralow Power Layer-by-Layer Thinning, Nanopatterning and Bandgap Engineering of MoTe_2 . <i>Advanced Functional Materials</i> , 2018, 28, 1804434.	14.9	23
48	Engineering Interface-Dependent Photoconductivity in $\text{Ge}_2\text{Sb}_2\text{Te}_5$ Nanoscale Devices. <i>ACS Applied Materials & Interfaces</i> , 2018, 10, 44906-44914.	8.0	19
49	Reconfigurable Nanophotonic Cavities with Nonvolatile Response. <i>ACS Photonics</i> , 2018, 5, 4644-4649.	6.6	32
50	Reconfigurable phase-change meta-absorbers with on-demand quality factor control. <i>Optics Express</i> , 2018, 26, 25567.	3.4	26
51	Device-Level Photonic Memories and Logic Applications Using Phase-Change Materials. <i>Advanced Materials</i> , 2018, 30, e1802435.	21.0	129
52	Phase-Change Metasurfaces for Dynamic 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]. <i>Optical Materials Express</i> , 2018, 8, 2455.	3.0	113
54	A New Facile Route to Flexible and Semi-Transparent Electrodes Based on Water Exfoliated Graphene and their Single-Electrode Triboelectric Nanogenerator. <i>Advanced Materials</i> , 2018, 30, e1802953.	21.0	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.	21.0	0
56	Can conventional phase-change memory devices be scaled down to single-nanometre dimensions?. Nanotechnology, 2017, 28, 035202.	2.6	25
57	Multilevel Ultrafast Flexible Nanoscale Nonvolatile Hybrid Graphene Oxide/Titanium Oxide Memories. ACS Nano, 2017, 11, 3010-3021.	14.6	98
58	Temperature Evolution in Nanoscale Carbon-Based Memory Devices Due to Local Joule Heating. IEEE Nanotechnology Magazine, 2017, 16, 806-811.	2.0	15
59	Ultrahigh Storage Densities via the Scaling of Patterned Probe Phase-Change Memories. IEEE Nanotechnology Magazine, 2017, 16, 767-772.	2.0	13
60	Role of Charge Traps in the Performance of Atomically Thin Transistors. Advanced Materials, 2017, 29, 1605598.	21.0	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.	4.4	16
62	Calculating with light using a chip-scale all-optical abacus. Nature Communications, 2017, 8, 1256.	12.8	201
63	Highly Efficient Rubrene/Graphene Charge Transfer Interfaces as Phototransistors in the Visible Regime. Advanced Materials, 2017, 29, 1702993.	21.0	58
64	On-chip photonic synapse. Science Advances, 2017, 3, e1700160.	10.3	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.	3.3	28
67	Low Temperature Annealing Improves the Electrochromic and Degradation Behavior of Tungsten Oxide (WO _x) Thin Films. Journal of Physical Chemistry C, 2017, 121, 20498-20506.	3.1	30
68	Mixed-Mode Electro-Optical Operation of Ge ₂ Sb ₂ Te ₅ Nanoscale Crossbar Devices. Advanced Electronic Materials, 2017, 3, 1700079.	5.1	24
69	Understanding the importance of the temperature dependence of viscosity on the crystallization dynamics in the Ge ₂ Sb ₂ Te ₅ phase-change material. Journal of Applied Physics, 2017, 121, 224504.	2.5	4
70	Nonvolatile All-Optical 1 Å– 2 Switch for Chipscale Photonic Networks. Advanced Optical Materials, 2017, 5, 1600346.	7.3	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.	31.5	7
75	Design of practicable phase-change metadevices for near-infrared absorber and modulator applications. Optics Express, 2016, 24, 13563.	3.4	81
76	Fast High-Responsivity Few-Layer MoTe ₂ Photodetectors. Advanced Optical Materials, 2016, 4, 1750-1754.	7.3	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.	2.1	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.	2.1	10
80	Integrated all-photonic non-volatile multi-level memory. Nature Photonics, 2015, 9, 725-732.	31.4	833
81	Accumulation-Based Computing Using Phase-Change Memories With FET Access Devices. IEEE Electron Device Letters, 2015, 36, 975-977.	3.9	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.	2.2	9
83	On-Chip Photonic Memory Elements Employing Phase-Change Materials. Advanced Materials, 2014, 26, 1372-1377.	21.0	189
84	Design of an optimised readout architecture for phase-change probe memory using Ge ₂ Sb ₂ Te ₅ media. Japanese Journal of Applied Physics, 2014, 53, 028002.	1.5	4
85	An optoelectronic framework enabled by low-dimensional phase-change films. Nature, 2014, 511, 206-211.	27.8	599
86	A transfer function approach to reaction rate analysis with applications to phase-change materials and devices. Applied Physics Letters, 2013, 103, 113501.	3.3	0
87	Modelling the phase-transition in phase-change materials. Physica Status Solidi (B): Basic Research, 2013, 250, 944-948.	1.5	8
88	Observation of T ₂ -like coherent optical phonons in epitaxial Ge ₂ Sb ₂ Te ₅ /GaSb(001) films. Scientific Reports, 2013, 3, 2965.	3.3	7
89	Response to "Comment on "Threshold switching via electric field induced crystallization in phase change memory devices" [Appl. Phys. Lett. 102, 236101 (2012)]. Applied Physics Letters, 2013, 102, 236102:3		1
90	Beyond von Neumann Computing with Nanoscale Phase-Change Memory Devices. Advanced Functional Materials, 2013, 23, 2248-2254.	14.9	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.	3.3	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.	1.5	0
94	Electric field assisted crystallisation in phase change materials. Physica Status Solidi (B): Basic Research, 2012, 249, 1897-1901.	1.5	5
95	Phase change processors, memristors and memflectors. Physica Status Solidi (B): Basic Research, 2012, 249, 1978-1984.	1.5	22
96	Crystallization of Ge ₂ Sb ₂ Te ₅ films by amplified femtosecond optical pulses. Journal of Applied Physics, 2012, 112, .	2.5	57
97	Scanning probe memories – Technology and applications. Current Applied Physics, 2011, 11, e104-e109.	2.4	13
98	Arithmetic and Biologically Inspired Computing Using Phase Change Materials. Advanced Materials, 2011, 23, 3408-3413.	21.0	237
99	Electric field induced crystallization in phase-change materials for memory applications. Applied Physics Letters, 2011, 98, .	3.3	33
100	Determination of the anisotropic elastic properties of Ge ₁ Sb ₂ Te ₄ . Applied Physics Letters, 2011, 98, 231911.	3.3	5
101	The Design of Rewritable Ultrahigh Density Scanning-Probe Phase-Change Memories. IEEE Nanotechnology Magazine, 2011, 10, 900-912.	2.0	53
102	Write strategies for multiterabit per square inch scanned-probe phase-change memories. Applied Physics Letters, 2010, 97, 173104.	3.3	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.	2.5	4
105	Fast simulation of phase-change processes in chalcogenide alloys using a Gillespie-type cellular automata approach. Journal of Applied Physics, 2008, 104, .	2.5	31
106	The effect of thermal anisotropies during crystallization in phase-change recording media. Journal of Applied Physics, 2008, 104, 044901.	2.5	2
107	Master-equation approach to understanding multistate phase-change memories and processors. Applied Physics Letters, 2007, 90, 063113.	3.3	22
108	An analytical model for nanoscale electrothermal probe recording on phase-change media. Journal of Applied Physics, 2006, 99, 034301.	2.5	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.	2.5	14
110	Models for phase-change of Ge ₂ Sb ₂ Te ₅ in optical and electrical memory devices. Journal of Applied Physics, 2004, 95, 504-511.	2.5	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