Harish Bhaskaran

List of Publications by Year
in descending order

113	10,535	71102 41	32842 100
papers	citations	h-index	g-index

117	117	117	8568
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Phase-change materials for non-volatile photonic applications. Nature Photonics, 2017, 11, 465-476.	31.4	917
2	All-optical spiking neurosynaptic networks with self-learning capabilities. Nature, 2019, 569, 208-214.	27.8	847
3	Integrated all-photonic non-volatile multi-level memory. Nature Photonics, 2015, 9, 725-732.	31.4	833
4	Photonics for artificial intelligence and neuromorphic computing. Nature Photonics, 2021, 15, 102-114.	31.4	764
5	Parallel convolutional processing using an integrated photonic tensor core. Nature, 2021, 589, 52-58.	27.8	723
6	Shape Evolution of Monolayer MoS₂ Crystals Grown by Chemical Vapor Deposition. Chemistry of Materials, 2014, 26, 6371-6379.	6.7	698
7	An optoelectronic framework enabled by low-dimensional phase-change films. Nature, 2014, 511, 206-211.	27.8	599
8	On-chip photonic synapse. Science Advances, 2017, 3, e1700160.	10.3	399
9	In-memory computing on a photonic platform. Science Advances, 2019, 5, eaau5759.	10.3	238
10	2022 roadmap on neuromorphic computing and engineering. Neuromorphic Computing and Engineering, 2022, 2, 022501.	5.9	217
11	Ultralow nanoscale wear through atom-by-atom attrition in silicon-containing diamond-like carbon. Nature Nanotechnology, 2010, 5, 181-185.	31.5	212
12	Calculating with light using a chip-scale all-optical abacus. Nature Communications, 2017, 8, 1256.	12.8	201
13	Fast and reliable storage using a 5â€‰â€‰bit, nonvolatile photonic memory cell. Optica, 2019, 6, 1.	9.3	195
14	Onâ€Chip Photonic Memory Elements Employing Phaseâ€Change Materials. Advanced Materials, 2014, 26, 1372-1377.	21.0	189
15	Nonvolatile Allâ€Optical 1 Ã— 2 Switch for Chipscale Photonic Networks. Advanced Optical Materials, 2017, 5, 1600346.	7.3	165
16	Photonic non-volatile memories using phase change materials. Applied Physics Letters, 2012, 101, .	3.3	139
17	Plasmonic nanogap enhanced phase-change devices with dual electrical-optical functionality. Science Advances, 2019, 5, eaaw2687.	10.3	131
18	Deviceâ€Level Photonic Memories and Logic Applications Using Phaseâ€Change Materials. Advanced Materials, 2018, 30, e1802435.	21.0	129

#	Article	IF	Citations
19	Color Depth Modulation and Resolution in Phaseâ€€Change Material Nanodisplays. Advanced Materials, 2016, 28, 4720-4726.	21.0	126
20	Controlled Preferential Oxidation of Grain Boundaries in Monolayer Tungsten Disulfide for Direct Optical Imaging. ACS Nano, 2015, 9, 3695-3703.	14.6	119
21	Controlled switching of phase-change materials by evanescent-field coupling in integrated photonics [Invited]. Optical Materials Express, 2018, 8, 2455.	3.0	113
22	Additive nanomanufacturing â€“ A review. Journal of Materials Research, 2014, 29, 1792-1816.	2.6	112
23	Roadmap on emerging hardware and technology for machine learning. Nanotechnology, 2021, 32, 012002.	2.6	104
24	A Nonvolatile Phaseâ€€Change Metamaterial Color Display. Advanced Optical Materials, 2019, 7, 1801782.	7.3	97
25	Large Dendritic Monolayer MoS₂ Grown by Atmospheric Pressure Chemical Vapor Deposition for Electrocatalysis. ACS Applied Materials & Interfaces, 2018, 10, 4630-4639.	8.0	88
26	Ultrasensitive Room-Temperature Piezoresistive Transduction in Graphene-Based Nanoelectromechanical Systems. Nano Letters, 2015, 15, 2562-2567.	9.1	82
27	Thermo-optical Effect in Phase-Change Nanophotonics. ACS Photonics, 2016, 3, 828-835.	6.6	81
28	Design of practicable phase-change metadevices for near-infrared absorber and modulator applications. Optics Express, 2016, 24, 13563.	3.4	81
29	Casimir Force andIn SituSurface Potential Measurements on Nanomembranes. Physical Review Letters, 2012, 109, 027202.	7.8	76
30	Substrate control for large area continuous films of monolayer MoS₂by atmospheric pressure chemical vapor deposition. Nanotechnology, 2016, 27, 085604.	2.6	69
31	Nanoscale PtSi Tips for Conducting Probe Technologies. IEEE Nanotechnology Magazine, 2009, 8, 128-131.	2.0	62
32	Doping Graphene Transistors Using Vertical Stacked Monolayer WS₂ Heterostructures Grown by Chemical Vapor Deposition. ACS Applied Materials & Interfaces, 2016, 8, 1644-1652.	8.0	61
33	Growth of Large Single-Crystalline Monolayer Hexagonal Boron Nitride by Oxide-Assisted Chemical Vapor Deposition. Chemistry of Materials, 2017, 29, 6252-6260.	6.7	60
34	Photoluminescence Segmentation within Individual Hexagonal Monolayer Tungsten Disulfide Domains Grown by Chemical Vapor Deposition. ACS Applied Materials & Interfaces, 2017, 9, 15005-15014.	8.0	59
35	Experimental investigation of silicon and silicon nitride platforms for phase-change photonic in-memory computing. Optica, 2020, 7, 218.	9.3	58
36	Tunable Volatility of Ge₂Sb₂Te₅ in Integrated Photonics. Advanced Functional Materials, 2019, 29, 1807571.	14.9	57

#	Article	IF	Citations
37	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
38	Controlling Defects in Continuous 2D GaS Films for Highâ€Performance Wavelengthâ€Tunable UVâ€Discriminating Photodetectors. Advanced Materials, 2020, 32, e1906958.	21.0	53
39	Investigation of near-shore processes along North Goa beaches: A study based on field observations and numerical modelling. Journal of Earth System Science, 2021, 130, 1.	1.3	53
40	Accumulation-Based Computing Using Phase-Change Memories With FET Access Devices. IEEE Electron Device Letters, 2015, 36, 975-977.	3.9	52
41	Direct Laser Patterning and Phase Transformation of 2D PdSe2 Films for On-Demand Device Fabrication. ACS Nano, 2019, 13, 14162-14171.	14.6	44
42	Electrohydrodynamic Jet Printing: Introductory Concepts and Considerations. Small Science, 2022, 2, 2100073.	9.9	43
43	Encapsulated tips for reliable nanoscale conduction in scanning probe technologies. Nanotechnology, 2009, 20, 105701.	2.6	42
44	Antimony thin films demonstrate programmable optical nonlinearity. Science Advances, 2021, 7, .	10.3	42
45	Oligomeric aminoborane precursors for the chemical vapour deposition growth of few-layer hexagonal boron nitride. CrystEngComm, 2017, 19, 285-294.	2.6	41
46	Scaling Limits of Graphene Nanoelectrodes. Nano Letters, 2017, 17, 3688-3693.	9.1	40
47	Chemical Vapor Deposition Growth of Two-Dimensional Monolayer Gallium Sulfide Crystals Using Hydrogen Reduction of Ga₂S₃. ACS Omega, 2018, 3, 7897-7903.	3.5	35
48	Chalcogenide phase-change devices for neuromorphic photonic computing. Journal of Applied Physics, 2021, 129, .	2.5	35
49	Plasmonically-enhanced all-optical integrated phase-change memory. Optics Express, 2019, 27, 24724.	3.4	35
50	Nanoscale phase transformation in Ge2Sb2Te5 using encapsulated scanning probes and retraction force microscopy. Review of Scientific Instruments, 2009, 80, 083701.	1.3	32
51	High-Performance All 2D-Layered Tin Disulfide: Graphene Photodetecting Transistors with Thickness-Controlled Interface Dynamics. ACS Applied Materials & Interfaces, 2018, 10, 13002-13010.	8.0	32
52	Reconfigurable Nanophotonic Cavities with Nonvolatile Response. ACS Photonics, 2018, 5, 4644-4649.	6.6	32
53	Electroluminescence Dynamics across Grain Boundary Regions of Monolayer Tungsten Disulfide. ACS Nano, 2016, 10, 1093-1100.	14.6	31
54	Electrohydrodynamic jet printed conducting polymer for enhanced chemiresistive gas sensors. Journal of Materials Chemistry C, 2021, 9, 4591-4596.	5.5	31

#	Article	IF	Citations
55	Ultrathin All-2D Lateral Graphene/GaS/Graphene UV Photodetectors by Direct CVD Growth. ACS Applied Materials & Interfaces, 2019, 11, 48172-48178.	8.0	30
56	Integrated phase-change photonic devices and systems. MRS Bulletin, 2019, 44, 721-727.	3.5	29
57	Electronically Reconfigurable Photonic Switches Incorporating Plasmonic Structures and Phase Change Materials. Advanced Science, 2022, 9, e2200383.	11.2	29
58	Phase-change devices for simultaneous optical-electrical applications. Scientific Reports, 2017, 7, 9688.	3.3	28
59	Broadband photonic tensor core with integrated ultra-low crosstalk wavelength multiplexers. Nanophotonics, 2022, 11, 4063-4072.	6.0	28
60	Dynamically tunable transmissive color filters using ultra-thin phase change materials. Optics Express, 2020, 28, 39841.	3.4	27
61	Mixedâ€Mode Electroâ€Optical Operation of Ge₂Sb₂Te₅ Nanoscale Crossbar Devices. Advanced Electronic Materials, 2017, 3, 1700079.	5.1	24
62	Postgrowth Substitutional Tin Doping of 2D WS₂ Crystals Using Chemical Vapor Deposition. ACS Applied Materials & Interfaces, 2019, 11, 24279-24288.	8.0	24
63	Revealing Strain-Induced Effects in Ultrathin Heterostructures at the Nanoscale. Nano Letters, 2018, 18, 2467-2474.	9.1	22
64	Chalcogenide optomemristors for multi-factor neuromorphic computation. Nature Communications, 2022, 13, 2247.	12.8	22
65	Morphology Control of Two-Dimensional Tin Disulfide on Transition Metal Dichalcogenides Using Chemical Vapor Deposition for Nanoelectronic Applications. ACS Applied Nano Materials, 2019, 2, 4222-4231.	5.0	21
66	38â€4: Solidâ€State Reflective Displays (SRD Â®) Utilizing Ultrathin Phaseâ€Change Materials. Digest of Technical Papers SID International Symposium, 2017, 48, 546-549.	0.3	20
67	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
68	GaS:WS₂ Heterojunctions for Ultrathin Two-Dimensional Photodetectors with Large Linear Dynamic Range across Broad Wavelengths. ACS Nano, 2021, 15, 19570-19580.	14.6	20
69	Active microcantilevers based on piezoresistive ferromagnetic thin films. Applied Physics Letters, 2011, 98, .	3.3	19
70	Engineering Interface-Dependent Photoconductivity in Ge₂Sb₂Te₅ Nanoscale Devices. ACS Applied Materials & Interfaces, 2018, 10, 44906-44914.	8.0	19
71	Antimony as a Programmable Element in Integrated Nanophotonics. Nano Letters, 2022, 22, 3532-3538.	9.1	19
72	Reconfigurable Low-Emissivity Optical Coating Using Ultrathin Phase Change Materials. ACS Photonics, 2022, 9, 90-100.	6.6	18

#	Article	IF	Citations
73	Inhomogeneous Strain Release during Bending of WS₂ on Flexible Substrates. ACS Applied Materials & Interfaces, 2018, 10, 39177-39186.	8.0	17
74	Behavioral modeling of integrated phase-change photonic devices for neuromorphic computing applications. APL Materials, 2019, 7, .	5.1	17
75	Grain Boundaries as Electrical Conduction Channels in Polycrystalline Monolayer WS₂. ACS Applied Materials & Interfaces, 2019, 11, 10189-10197.	8.0	17
76	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
77	Nanoparticle assembly enabled by EHD-printed monolayers. Microsystems and Nanoengineering, 2017, 3, 17054.	7.0	15
78	57â€4: Solid State Reflective Display (SRD^{Â®}) with LTPS Diode Backplane. Digest of Technical Papers SID International Symposium, 2019, 50, 807-810.	0.3	15
79	Polarization-selective reconfigurability in hybridized-active-dielectric nanowires. Science Advances, 2022, 8, .	10.3	15
80	Young's modulus and residual stress of GeSbTe phase-change thin films. Thin Solid Films, 2015, 592, 69-75.	1.8	13
81	Solidâ€state reflective displays (SRDÂ®) for videoâ€rate, full color, outdoor readable displays. Journal of the Society for Information Display, 2018, 26, 619-624.	2.1	13
82	Monadic Pavlovian associative learning in a backpropagation-free photonic network. Optica, 2022, 9, 792.	9.3	13
83	Real-time nanomechanical property modulation as a framework for tunable NEMS. Nature Communications, 2022, 13, 1464.	12.8	12
84	Strong Opto-Structural Coupling in Low Dimensional GeSe₃ Films. Nano Letters, 2019, 19, 7377-7384.	9.1	11
85	Artificial Biphasic Synapses Based on Nonvolatile Phaseâ€Change Photonic Memory Cells. Physica Status Solidi - Rapid Research Letters, 2022, 16, .	2.4	11
86	Direct manufacturing of ultrathin graphite on three-dimensional nanoscale features. Scientific Reports, 2016, 6, 22700.	3.3	10
87	Reliability assessment of delamination in chip-to-chip bonded MEMS packaging. IEEE Transactions on Advanced Packaging, 2003, 26, 141-151.	1.6	9
88	On-chip Phase Change Optical Matrix Multiplication Core. , 2020, , .		9
89	An integrated photonics engine for unsupervised correlation detection. Science Advances, 2022, 8, .	10.3	8
90	Note: Micro-cantilevers with AlN actuators and PtSi tips for multi-frequency atomic force microscopy. Review of Scientific Instruments, 2012, 83, 096107.	1.3	7

#	Article	IF	Citations
91	Colour performance and stack optimisation in phase change material based nano-displays. Proceedings of SPIE, 2015, , .	0.8	6
92	System-Level Simulation for Integrated Phase-Change Photonics. Journal of Lightwave Technology, 2021, 39, 6392-6402.	4.6	6
93	Design parameters for voltage-controllable directed assembly of single nanoparticles. Nanotechnology, 2013, 24, 405304.	2.6	5
94	2-D Materials as a Functional Platform for Phase Change Tunable NEMS. IEEE Access, 2015, 3, 737-742.	4.2	5
95	Light-free magnetic resonance force microscopy for studies of electron spin polarized systems. Journal of Magnetism and Magnetic Materials, 2005, 286, 324-328.	2.3	4
96	Exploiting rotational asymmetry for sub-50â€‰nm mechanical nanocalligraphy. Microsystems and Nanoengineering, 2021, 7, 84.	7.0	4
97	Ultrathin Lateral 2D Photodetectors Using Transition-Metal Dichalcogenides PtSe₂â€“WS₂â€“PtSe₂ by Direct Laser Patterning. ACS Applied Electronic Materials, 2022, 4, 1029-1038.	4.3	4
98	Multi-level storage in non-volatile phase-change nanophotonic memories. , 2016, , .		2
99	Filamentary High-Resolution Electrical Probes for Nanoengineering. Nano Letters, 2020, 20, 1067-1073.	9.1	2
100	Nanoscale Bilayer Mechanical Lithography Using Water as Developer. Nano Letters, 2021, 21, 3827-3834.	9.1	2
101	67â€4: Shutterâ€Free Full Colour Solid State Reflective Display (SRDÂ®). Digest of Technical Papers SID International Symposium, 2021, 52, 1006-1009.	0.3	2
102	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
103	Casimir probe based upon metallized high Q SiN nanomembrane resonator. Review of Scientific Instruments, 2013, 84, 015115.	1.3	1
104	On-chip phase-change photonic memory and computing. , 2017, , .		1
105	Integrated Phase-change Photonics: A Strategy for Merging Communication and Computing. , 2019, , .		1
106	Development of Ultra-Sensitive Capacitive Readout for Magnetic Resonance Force Microscopy. , 2005, , 11.		0
107	All-photonic nonvolatile memory cells using phase-change materials. , 2015, , .		0
108	Coupled Piezoresistive Graphene Nano-Resonators. , 2019, , .		0

#	Article	IF	Citations
109	Memristors get the hues. Nature Nanotechnology, 2021, 16, 746-747.	31.5	0
110	Nonthermal Transport of Energy Driven by Photoexcited Carriers in Switchable Solid States of GeTe. Physical Review Applied, 2021, 16, .	3.8	0
111	All-photonic in-memory computing based on phase-change materials. , 2019, , .		0
112	Nanoscale Optoelectronic Memory with Nonvolatile Phaseâ€“Change Photonics. , 2020, , .		0
113	Experimental investigation of silicon and silicon nitride platforms for phase-change photonic in-memory computing: erratum. Optica, 2020, 7, 1804.	9.3	0