Harish Bhaskaran

List of Publications by Year
in descending order

113 papers	10,535 citations	71102 41 h-index	32842 100 g-index
117 all docs	117 docs citations	117 times ranked	8568 citing authors

#	Article	IF	Citations
1	Electrohydrodynamic Jet Printing: Introductory Concepts and Considerations. Small Science, 2022, 2, 2100073.	9.9	43
2	2022 roadmap on neuromorphic computing and engineering. Neuromorphic Computing and Engineering, 2022, 2, 022501.	5.9	217
3	Broadband photonic tensor core with integrated ultra-low crosstalk wavelength multiplexers. Nanophotonics, 2022, 11, 4063-4072.	6.0	28
4	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
5	Real-time nanomechanical property modulation as a framework for tunable NEMS. Nature Communications, 2022, 13, 1464.	12.8	12
6	Artificial Biphasic Synapses Based on Nonvolatile Phaseâ€Change Photonic Memory Cells. Physica Status Solidi - Rapid Research Letters, 2022, 16, .	2.4	11
7	Reconfigurable Low-Emissivity Optical Coating Using Ultrathin Phase Change Materials. ACS Photonics, 2022, 9, 90-100.	6.6	18
8	Electronically Reconfigurable Photonic Switches Incorporating Plasmonic Structures and Phase Change Materials. Advanced Science, 2022, 9, e2200383.	11.2	29
9	Antimony as a Programmable Element in Integrated Nanophotonics. Nano Letters, 2022, 22, 3532-3538.	9.1	19
10	Chalcogenide optomemristors for multi-factor neuromorphic computation. Nature Communications, 2022, 13, 2247.	12.8	22
11	Monadic Pavlovian associative learning in a backpropagation-free photonic network. Optica, 2022, 9, 792.	9.3	13
12	An integrated photonics engine for unsupervised correlation detection. Science Advances, 2022, 8, .	10.3	8
13	Polarization-selective reconfigurability in hybridized-active-dielectric nanowires. Science Advances, 2022, 8, .	10.3	15
14	Roadmap on emerging hardware and technology for machine learning. Nanotechnology, 2021, 32, 012002.	2.6	104
15	Antimony thin films demonstrate programmable optical nonlinearity. Science Advances, 2021, 7, .	10.3	42
16	Electrohydrodynamic jet printed conducting polymer for enhanced chemiresistive gas sensors. Journal of Materials Chemistry C, 2021, 9, 4591-4596.	5.5	31
17	Parallel convolutional processing using an integrated photonic tensor core. Nature, 2021, 589, 52-58.	27.8	723
18	System-Level Simulation for Integrated Phase-Change Photonics. Journal of Lightwave Technology, 2021, 39, 6392-6402.	4.6	6

#	Article	IF	Citations
19	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
20	Nanoscale Bilayer Mechanical Lithography Using Water as Developer. Nano Letters, 2021, 21, 3827-3834.	9.1	2
21	Memristors get the hues. Nature Nanotechnology, 2021, 16, 746-747.	31.5	0
22	Chalcogenide phase-change devices for neuromorphic photonic computing. Journal of Applied Physics, 2021, 129, .	2.5	35
23	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
24	Nonthermal Transport of Energy Driven by Photoexcited Carriers in Switchable Solid States of GeTe. Physical Review Applied, 2021, 16, .	3.8	0
25	Photonics for artificial intelligence and neuromorphic computing. Nature Photonics, 2021, 15, 102-114.	31.4	764
26	Exploiting rotational asymmetry for sub-50â€‰nm mechanical nanocalligraphy. Microsystems and Nanoengineering, 2021, 7, 84.	7.0	4
27	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
28	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
29	Filamentary High-Resolution Electrical Probes for Nanoengineering. Nano Letters, 2020, 20, 1067-1073.	9.1	2
30	Controlling Defects in Continuous 2D GaS Films for Highâ€Performance Wavelengthâ€Tunable UVâ€Discriminating Photodetectors. Advanced Materials, 2020, 32, e1906958.	21.0	53
31	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
32	Dynamically tunable transmissive color filters using ultra-thin phase change materials. Optics Express, 2020, 28, 39841.	3.4	27
33	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
34	Experimental investigation of silicon and silicon nitride platforms for phase-change photonic in-memory computing. Optica, 2020, 7, 218.	9.3	58
35	Nanoscale Optoelectronic Memory with Nonvolatile Phaseâ€“Change Photonics. , 2020, , .		0
36	Experimental investigation of silicon and silicon nitride platforms for phase-change photonic in-memory computing: erratum. Optica, 2020, 7, 1804.	9.3	0

#	Article	IF	Citations
37	On-chip Phase Change Optical Matrix Multiplication Core. , 2020, , .		9
38	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
39	A Nonvolatile Phaseâ€Change Metamaterial Color Display. Advanced Optical Materials, 2019, 7, 1801782.	7.3	97
40	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
41	Postgrowth Substitutional Tin Doping of 2D WS₂ Crystals Using Chemical Vapor Deposition. ACS Applied Materials & Interfaces, 2019, 11, 24279-24288.	8.0	24
42	Coupled Piezoresistive Graphene Nano-Resonators. , 2019, , .		0
43	Strong Opto-Structural Coupling in Low Dimensional GeSe₃ Films. Nano Letters, 2019, 19, 7377-7384.	9.1	11
44	Integrated phase-change photonic devices and systems. MRS Bulletin, 2019, 44, 721-727.	3.5	29
45	Behavioral modeling of integrated phase-change photonic devices for neuromorphic computing applications. APL Materials, 2019, 7, .	5.1	17
46	Tunable Volatility of Ge₂Sb₂Te₅ in Integrated Photonics. Advanced Functional Materials, 2019, 29, 1807571.	14.9	57
47	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
48	All-optical spiking neurosynaptic networks with self-learning capabilities. Nature, 2019, 569, 208-214.	27.8	847
49	Grain Boundaries as Electrical Conduction Channels in Polycrystalline Monolayer WS₂. ACS Applied Materials & Interfaces, 2019, 11, 10189-10197.	8.0	17
50	In-memory computing on a photonic platform. Science Advances, 2019, 5, eaau5759.	10.3	238
51	Plasmonic nanogap enhanced phase-change devices with dual electrical-optical functionality. Science Advances, 2019, 5, eaaw2687.	10.3	131
52	Ultrathin All-2D Lateral Graphene/GaS/Graphene UV Photodetectors by Direct CVD Growth. ACS Applied Materials & Interfaces, 2019, 11, 48172-48178.	8.0	30
53	Direct Laser Patterning and Phase Transformation of 2D PdSe2 Films for On-Demand Device Fabrication. ACS Nano, 2019, 13, 14162-14171.	14.6	44
54	Plasmonically-enhanced all-optical integrated phase-change memory. Optics Express, 2019, 27, 24724.	3.4	35

#	Article	IF	Citations
55	Fast and reliable storage using a 5â€‰â€‰bit, nonvolatile photonic memory cell. Optica, 2019, 6, 1.	9.3	195
56	Integrated Phase-change Photonics: A Strategy for Merging Communication and Computing. , 2019, , .		1
57	All-photonic in-memory computing based on phase-change materials. , 2019, , .		0
58	Revealing Strain-Induced Effects in Ultrathin Heterostructures at the Nanoscale. Nano Letters, 2018, 18, 2467-2474.	9.1	22
59	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
60	Large Dendritic Monolayer MoS₂ Grown by Atmospheric Pressure Chemical Vapor Deposition for Electrocatalysis. ACS Applied Materials & Interfaces, 2018, 10, 4630-4639.	8.0	88
61	Engineering Interface-Dependent Photoconductivity in Ge₂Sb₂Te₅ Nanoscale Devices. ACS Applied Materials & Interfaces, 2018, 10, 44906-44914.	8.0	19
62	Inhomogeneous Strain Release during Bending of WS₂ on Flexible Substrates. ACS Applied Materials & Interfaces, 2018, 10, 39177-39186.	8.0	17
63	Reconfigurable Nanophotonic Cavities with Nonvolatile Response. ACS Photonics, 2018, 5, 4644-4649.	6.6	32
64	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
65	Deviceâ€Level Photonic Memories and Logic Applications Using Phaseâ€Change Materials. Advanced Materials, 2018, 30, e1802435.	21.0	129
66	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
67	Controlled switching of phase-change materials by evanescent-field coupling in integrated photonics [Invited]. Optical Materials Express, 2018, 8, 2455.	3.0	113
68	Oligomeric aminoborane precursors for the chemical vapour deposition growth of few-layer hexagonal boron nitride. CrystEngComm, 2017, 19, 285-294.	2.6	41
69	Scaling Limits of Graphene Nanoelectrodes. Nano Letters, 2017, 17, 3688-3693.	9.1	40
70	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
71	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
72	Calculating with light using a chip-scale all-optical abacus. Nature Communications, 2017, 8, 1256.	12.8	201

#	Article	IF	Citations
73	On-chip photonic synapse. Science Advances, 2017, 3, e1700160.	10.3	399
74	Nanoparticle assembly enabled by EHD-printed monolayers. Microsystems and Nanoengineering, 2017, 3, 17054.	7.0	15
75	Phase-change devices for simultaneous optical-electrical applications. Scientific Reports, 2017, 7, 9688.	3.3	28
76	Mixedâ€Mode Electroâ€Optical Operation of Ge₂Sb₂Te₅ Nanoscale Crossbar Devices. Advanced Electronic Materials, 2017, 3, 1700079.	5.1	24
77	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
78	Phase-change materials for non-volatile photonic applications. Nature Photonics, 2017, 11, 465-476.	31.4	917
79	Nonvolatile Allâ€Optical 1 Ã— 2 Switch for Chipscale Photonic Networks. Advanced Optical Materials, 2017, 5, 1600346.	7.3	165
80	On-chip phase-change photonic memory and computing. , 2017, , .		1
81	Color Depth Modulation and Resolution in Phaseâ€Change Material Nanodisplays. Advanced Materials, 2016, 28, 4720-4726.	21.0	126
82	Multi-level storage in non-volatile phase-change nanophotonic memories. , 2016, , .		2
83	Thermo-optical Effect in Phase-Change Nanophotonics. ACS Photonics, 2016, 3, 828-835.	6.6	81
84	Design of practicable phase-change metadevices for near-infrared absorber and modulator applications. Optics Express, 2016, 24, 13563.	3.4	81
85	Direct manufacturing of ultrathin graphite on three-dimensional nanoscale features. Scientific Reports, 2016, 6, 22700.	3.3	10
86	Substrate control for large area continuous films of monolayer MoS₂by atmospheric pressure chemical vapor deposition. Nanotechnology, 2016, 27, 085604.	2.6	69
87	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
88	Electroluminescence Dynamics across Grain Boundary Regions of Monolayer Tungsten Disulfide. ACS Nano, 2016, 10, 1093-1100.	14.6	31
89	All-photonic nonvolatile memory cells using phase-change materials. , 2015, , .		0
90	Ultrasensitive Room-Temperature Piezoresistive Transduction in Graphene-Based Nanoelectromechanical Systems. Nano Letters, 2015, 15, 2562-2567.	9.1	82

#	Article	IF	Citations
91	2-D Materials as a Functional Platform for Phase Change Tunable NEMS. IEEE Access, 2015, 3, 737-742.	4.2	5
92	Controlled Preferential Oxidation of Grain Boundaries in Monolayer Tungsten Disulfide for Direct Optical Imaging. ACS Nano, 2015, 9, 3695-3703.	14.6	119
93	Integrated all-photonic non-volatile multi-level memory. Nature Photonics, 2015, 9, 725-732.	31.4	833
94	Colour performance and stack optimisation in phase change material based nano-displays. Proceedings of SPIE, 2015, , .	0.8	6
95	Accumulation-Based Computing Using Phase-Change Memories With FET Access Devices. IEEE Electron Device Letters, 2015, 36, 975-977.	3.9	52
96	Young's modulus and residual stress of GeSbTe phase-change thin films. Thin Solid Films, 2015, 592, 69-75.	1.8	13
97	Additive nanomanufacturing â€“ A review. Journal of Materials Research, 2014, 29, 1792-1816.	2.6	112
98	Onâ€Chip Photonic Memory Elements Employing Phaseâ€Change Materials. Advanced Materials, 2014, 26, 1372-1377.	21.0	189
99	Shape Evolution of Monolayer MoS₂ Crystals Grown by Chemical Vapor Deposition. Chemistry of Materials, 2014, 26, 6371-6379.	6.7	698
100	An optoelectronic framework enabled by low-dimensional phase-change films. Nature, 2014, 511, 206-211.	27.8	599
101	Design parameters for voltage-controllable directed assembly of single nanoparticles. Nanotechnology, 2013, 24, 405304.	2.6	5
102	Casimir probe based upon metallized high Q SiN nanomembrane resonator. Review of Scientific Instruments, 2013, 84, 015115.	1.3	1
103	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
104	Photonic non-volatile memories using phase change materials. Applied Physics Letters, 2012, 101, .	3.3	139
105	Casimir Force and<i>In Situ</i>Surface Potential Measurements on Nanomembranes. Physical Review Letters, 2012, 109, 027202.	7.8	76
106	Active microcantilevers based on piezoresistive ferromagnetic thin films. Applied Physics Letters, 2011, 98, .	3.3	19
107	Ultralow nanoscale wear through atom-by-atom attrition in silicon-containing diamond-like carbon. Nature Nanotechnology, 2010, 5, 181-185.	31.5	212
108	Nanoscale phase transformation in Ge2Sb2Te5 using encapsulated scanning probes and retraction force microscopy. Review of Scientific Instruments, 2009, 80, 083701.	1.3	32

#	Article	IF	Citations
109	Encapsulated tips for reliable nanoscale conduction in scanning probe technologies. Nanotechnology, 2009, 20, 105701.	2.6	42
110	Nanoscale PtSi Tips for Conducting Probe Technologies. IEEE Nanotechnology Magazine, 2009, 8, 128-131.	2.0	62
111	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
112	Development of Ultra-Sensitive Capacitive Readout for Magnetic Resonance Force Microscopy. , 2005, , 11.		0
113	Reliability assessment of delamination in chip-to-chip bonded MEMS packaging. IEEE Transactions on Advanced Packaging, 2003, 26, 141-151.	1.6	9