Arka Majumdar

List of Publications by Year
in descending order

147 papers	6,228 citations	66315 42 h-index	74108 75 g-index
149 all docs	149 docs citations	149 times ranked	5766 citing authors

#	Article	IF	Citations
1	Monolayer semiconductor nanocavity lasers with ultralow thresholds. Nature, 2015, 520, 69-72.	13.7	713
2	Low-Contrast Dielectric Metasurface Optics. ACS Photonics, 2016, 3, 209-214.	3.2	243
3	Metasurface optics for full-color computational imaging. Science Advances, 2018, 4, eaar2114.	4.7	220
4	Electrical Control of Silicon Photonic Crystal Cavity by Graphene. Nano Letters, 2013, 13, 515-518.	4.5	193
5	Resonant Excitation of a Quantum Dot Strongly Coupled to a Photonic Crystal Nanocavity. Physical Review Letters, 2010, 104, 073904.	2.9	192
6	Low-Loss and Broadband Nonvolatile Phase-Change Directional Coupler Switches. ACS Photonics, 2019, 6, 553-557.	3.2	184
7	GST-on-silicon hybrid nanophotonic integrated circuits: a non-volatile quasi-continuously reprogrammable platform. Optical Materials Express, 2018, 8, 1551.	1.6	166
8	Loss-Enabled Sub-Poissonian Light Generation in a Bimodal Nanocavity. Physical Review Letters, 2012, 108, 183601.	2.9	158
9	Ultrafast Photon-Photon Interaction in a Strongly Coupled Quantum Dot-Cavity System. Physical Review Letters, 2012, 108, 093604.	2.9	155
10	Nonvolatile Electrically Reconfigurable Integrated Photonic Switch Enabled by a Silicon PIN Diode Heater. Advanced Materials, 2020, 32, e2001218.	11.1	152
11	Control of two-dimensional excitonic light emission via photonic crystal. 2D Materials, 2014, 1, 011001.	2.0	144
12	Varifocal zoom imaging with large area focal length adjustable metalenses. Optica, 2018, 5, 825.	4.8	139
13	Nanocavity Integrated van der Waals Heterostructure Light-Emitting Tunneling Diode. Nano Letters, 2017, 17, 200-205.	4.5	129
14	Single-photon blockade in doubly resonant nanocavities with second-order nonlinearity. Physical Review B, 2013, 87, .	1.1	124
15	Neural nano-optics for high-quality thin lens imaging. Nature Communications, 2021, 12, 6493.	5.8	116
16	Nonâ€Volatile Reconfigurable Integrated Photonics Enabled by Broadband Lowâ€Loss Phase Change Material. Advanced Optical Materials, 2021, 9, 2002049.	3.6	102
17	Ultra-low-energy programmable non-volatile silicon photonics based on phase-change materials with graphene heaters. Nature Nanotechnology, 2022, 17, 842-848.	15.6	94
18	Integrated quantum optical networks based on quantum dots and photonic crystals. New Journal of Physics, 2011, 13, 055025.	1.2	92

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19	Metasurface Freeform Nanophotonics. Scientific Reports, 2017, 7, 1673.	1.6	88
20	Probing the ladder of dressed states and nonclassical light generation in quantum-dotâ€“cavity QED. Physical Review A, 2012, 85, .	1.0	85
21	Cavity quantum electrodynamics with a single quantum dot coupled to a photonic molecule. Physical Review B, 2012, 86, .	1.1	80
22	Simulations of Silicon-on-Insulator Channel-Waveguide Electrooptical 2 Ã— 2 Switches and 1 Ã— 1 Modulators Using a ${f Ge_2}{f Sb_2}{f Te_5}$ Self-Holding Layer. Journal of Lightwave Technology, 2015, 33, 1805-1813.	2.7	79
23	Modeling Electrical Switching of Nonvolatile Phase-Change Integrated Nanophotonic Structures with Graphene Heaters. ACS Applied Materials & Interfaces, 2020, 12, 21827-21836.	4.0	78
24	Silicon photonic crystal cavity enhanced second-harmonic generation from monolayer WSe ₂. 2D Materials, 2017, 4, 015031.	2.0	77
25	Myths and truths about optical phase change materials: A perspective. Applied Physics Letters, 2021, 118, .	1.5	76
26	Optical frontend for a convolutional neural network. Applied Optics, 2019, 58, 3179.	0.9	75
27	Design and analysis of photonic crystal coupled cavity arrays for quantum simulation. Physical Review B, 2012, 86, .	1.1	70
28	Inverse Designed Metalenses with Extended Depth of Focus. ACS Photonics, 2020, 7, 873-878.	3.2	69
29	Generation of nonclassical states of light via photon blockade in optical nanocavities. Physical Review A, 2010, 81, .	1.0	64
30	Broadband transparent and CMOS-compatible flat optics with silicon nitride metasurfaces [Invited]. Optical Materials Express, 2018, 8, 2330.	1.6	58
31	Van der Waals materials integrated nanophotonic devices [Invited]. Optical Materials Express, 2019, 9, 384.	1.6	58
32	Fundamental Scaling Laws in Nanophotonics. Scientific Reports, 2016, 6, 37419.	1.6	56
33	Ultrathin van der Waals Metalenses. Nano Letters, 2018, 18, 6961-6966.	4.5	55
34	Hybrid 2D Material Nanophotonics: A Scalable Platform for Low-Power Nonlinear and Quantum Optics. ACS Photonics, 2015, 2, 1160-1166.	3.2	52
35	Deterministic Positioning of Colloidal Quantum Dots on Silicon Nitride Nanobeam Cavities. Nano Letters, 2018, 18, 6404-6410.	4.5	51
36	Nonvolatile Rewritable Photomemory Arrays Based on Reversible Phaseâ€Change Perovskite for Optical Information Storage. Advanced Optical Materials, 2019, 7, 1900558.	3.6	51

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37	MEMS-actuated metasurface Alvarez lens. Microsystems and Nanoengineering, 2020, 6, 79.	3.4	51
38	Multi-slot photonic crystal cavities for high-sensitivity refractive index sensing. Optics Express, 2019, 27, 3609.	1.7	50
39	Deep Learning to Accelerate Scatterer-to-Field Mapping for Inverse Design of Dielectric Metasurfaces. ACS Photonics, 2021, 8, 481-488.	3.2	48
40	End-to-end nanophotonic inverse design for imaging and polarimetry. Nanophotonics, 2021, 10, 1177-1187.	2.9	48
41	400%/W second harmonic conversion efficiency in 14 Î¼m-diameter gallium phosphide-on-oxide resonators. Optics Express, 2018, 26, 33687.	1.7	47
42	Controlling three-dimensional optical fields via inverse Mie scattering. Science Advances, 2019, 5, eaax4769.	4.7	44
43	Metasurface Integrated Monolayer Exciton Polariton. Nano Letters, 2020, 20, 5292-5300.	4.5	44
44	Cavity nonlinear optics with layered materials. Nanophotonics, 2017, 7, 355-370.	2.9	43
45	Encapsulated Silicon Nitride Nanobeam Cavity for Hybrid Nanophotonics. ACS Photonics, 2018, 5, 2176-2181.	3.2	43
46	Tunable metasurfaces via subwavelength phase shifters with uniform amplitude. Scientific Reports, 2017, 7, 40174.	1.6	41
47	Free-space optical neural network based on thermal atomic nonlinearity. Photonics Research, 2021, 9, B128.	3.4	41
48	Black Phosphorus Mid-Infrared Light-Emitting Diodes Integrated with Silicon Photonic Waveguides. Nano Letters, 2020, 20, 6824-6830.	4.5	40
49	Broadband Nonvolatile Electrically Controlled Programmable Units in Silicon Photonics. ACS Photonics, 2022, 9, 2142-2150.	3.2	39
50	Theory of electro-optic modulation via a quantum dot coupled to a nano-resonator. Optics Express, 2010, 18, 3974.	1.7	37
51	Non-Volatile Reconfigurable Silicon Photonics Based on Phase-Change Materials. IEEE Journal of Selected Topics in Quantum Electronics, 2022, 28, 1-17.	1.9	36
52	Fast quantum dot single photon source triggered at telecommunications wavelength. Applied Physics Letters, 2011, 98, .	1.5	35
53	Inverse design of optical elements based on arrays of dielectric spheres. Applied Optics, 2018, 57, 1437.	0.9	35
54	Design and analysis of extended depth of focus metalenses for achromatic computational imaging. Photonics Research, 2020, 8, 1613.	3.4	35

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55	All Optical Switching With a Single Quantum Dot Strongly Coupled to a Photonic Crystal Cavity. IEEE Journal of Selected Topics in Quantum Electronics, 2012, 18, 1812-1817.	1.9	33
56	Simultaneous Achromatic and Varifocal Imaging with Quartic Metasurfaces in the Visible. ACS Photonics, 2020, 7, 120-127.	3.2	32
57	Metasurface Generation of Paired Accelerating and Rotating Optical Beams for Passive Ranging and Scene Reconstruction. ACS Photonics, 2020, 7, 1529-1536.	3.2	32
58	Cavity enhanced nonlinear optics for few photon optical bistability. Optics Express, 2015, 23, 16246.	1.7	31
59	Ultra-low power fiber-coupled gallium arsenide photonic crystal cavity electro-optic modulator. Optics Express, 2011, 19, 7530.	1.7	30
60	Flat metaform near-eye visor. Applied Optics, 2017, 56, 8822.	0.9	30
61	Proposed Coupling of an Electron Spin in a Semiconductor Quantum Dot to a Nanosize Optical Cavity. Physical Review Letters, 2013, 111, 027402.	2.9	28
62	Electro-optical switching at 1550 nm using a two-state GeSe phase-change layer. Optics Express, 2015, 23, 1536.	1.7	28
63	Inverse design and flexible parameterization of meta-optics using algorithmic differentiation. Communications Physics, 2021, 4, .	2.0	28
64	Role of refractive index in metalens performance. Applied Optics, 2019, 58, 1460.	0.9	28
65	Inverse designed extended depth of focus meta-optics for broadband imaging in the visible. Nanophotonics, 2022, 11, 2531-2540.	2.9	27
66	A forming-free bipolar resistive switching behavior based on ITO/V2O5/ITO structure. Applied Physics Letters, 2017, 111, .	1.5	26
67	Deterministically charged quantum dots in photonic crystal nanoresonators for efficient spinâ€“photon interfaces. New Journal of Physics, 2013, 15, 113056.	1.2	24
68	Electrically Driven Photonic Crystal Nanocavity Devices. IEEE Journal of Selected Topics in Quantum Electronics, 2012, 18, 1700-1710.	1.9	23
69	An optical modulator based on a single strongly coupled quantum dot - cavity system in a p-i-n junction. Optics Express, 2009, 17, 18651.	1.7	21
70	Improving Indistinguishability of Single Photons from Colloidal Quantum Dots Using Nanocavities. ACS Photonics, 2019, 6, 3166-3173.	3.2	21
71	Ultra-low-power nonvolatile integrated photonic switches and modulators based on nanogap-enhanced phase-change waveguides. Optics Express, 2020, 28, 37265.	1.7	21
72	Strong photon antibunching in weakly nonlinear two-dimensional exciton-polaritons. Physical Review B, 2018, 97, .	1.1	19

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73	Design of achromatic augmented reality visors based on composite metasurfaces. Applied Optics, 2021, 60, 844.	0.9	19
74	Ultra-low mode volume on-substrate silicon nanobeam cavity. Optics Express, 2019, 27, 30692.	1.7	18
75	Off-resonant coupling between a single quantum dot and a nanobeam photonic crystal cavity. Applied Physics Letters, 2011, 99, 251907.	1.5	17
76	Coupling of photonic crystal cavity and interlayer exciton in heterobilayer of transition metal dichalcogenides. 2D Materials, 2020, 7, 015027.	2.0	17
77	Tunable dark modes in one-dimensional â€œdiatomicâ€•dielectric gratings. Optics Express, 2015, 23, 12478.	1.7	16
78	Ultra-Compact Subwavelength-Grating-Assisted Polarization-Independent Directional Coupler. IEEE Photonics Technology Letters, 2019, 31, 1538-1541.	1.3	16
79	Long wavelength infrared imaging under ambient thermal radiation via an all-silicon metalens. Optical Materials Express, 2021, 11, 2907.	1.6	16
80	Waveguide-Integrated van der Waals Heterostructure Mid-Infrared Photodetector with High Performance. ACS Applied Materials & Interfaces, 2022, 14, 24856-24863.	4.0	16
81	Phase-matched nonlinear optics via patterning layered materials. Optics Letters, 2017, 42, 3586.	1.7	15
82	Direct Patterning of Perovskite Nanocrystals on Nanophotonic Cavities with Electrohydrodynamic Inkjet Printing. Nano Letters, 2022, 22, 5681-5688.	4.5	15
83	Fullâ€Color Metaoptical Imaging in Visible Light. Advanced Photonics Research, 2022, 3, .	1.7	14
84	Cavity-enabled self-electro-optic bistability in silicon photonics. Optics Letters, 2014, 39, 3864.	1.7	13
85	Cavity-Enhanced Second-Order Nonlinear Photonic Logic Circuits. Physical Review Applied, 2016, 5, .	1.5	13
86	Hybrid metal-dielectric nanocavity for enhanced light-matter interactions. Optical Materials Express, 2017, 7, 231.	1.6	13
87	Large thermal tuning of a polymer-embedded silicon nitride nanobeam cavity. Optics Letters, 2019, 44, 3058.	1.7	13
88	Low power resonant optical excitation of an optomechanical cavity. Optics Express, 2011, 19, 1429.	1.7	12
89	Hydrothermal Synthesis of Yb³⁺: LuLiF₄ Microcrystals and Laser Refrigeration of Yb³⁺: LuLiF₄/Siliconâ€Nitride Composite Nanostructures. Laser and Photonics Reviews, 2021, 15, 2100019.	4.4	12
90	High-Q, submicron-confined chalcogenide microring resonators. Optics Express, 2021, 29, 33225.	1.7	12

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91	High quality, high index-contrast chalcogenide microdisk resonators. Optics Express, 2021, 29, 17775.	1.7	11
92	Silicon nitride nanobeam enhanced emission from all-inorganic perovskite nanocrystals. Optics Express, 2019, 27, 18673.	1.7	11
93	Ultra-broadband and compact polarizing beam splitter in silicon photonics. OSA Continuum, 2020, 3, 560.	1.8	11
94	Helicity-dependent continuous varifocal metalens based on bilayer dielectric metasurfaces. Optics Express, 2021, 29, 39461.	1.7	11
95	A direct measurement of the electronic structure of Si nanocrystals and its effect on optoelectronic properties. Journal of Applied Physics, 2014, 115, 103515.	1.1	9
96	Excitonâ€“phonon interactions in nanocavity-integrated monolayer transition metal dichalcogenides. Npj 2D Materials and Applications, 2020, 4, .	3.9	9
97	Active Tuning of Hybridized Modes in a Heterogeneous Photonic Molecule. Physical Review Applied, 2020, 13, .	1.5	9
98	Photonic Topological Baths for Quantum Simulation. ACS Photonics, 2022, 9, 682-687.	3.2	9
99	Fast extended depth of focus meta-optics for varifocal functionality. Photonics Research, 2022, 10, 828.	3.4	9
100	1D Self-Healing Beams in Integrated Silicon Photonics. ACS Photonics, 2021, 8, 2139-2147.	3.2	8
101	Knowledge distillation circumvents nonlinearity for optical convolutional neural networks. Applied Optics, 2022, 61, 2173.	0.9	8
102	High-precision local transfer of van der Waals materials on nanophotonic structures. Optical Materials Express, 2020, 10, 645.	1.6	7
103	Integrated Quantum Nanophotonics with Solutionâ€Processed Materials. Advanced Quantum Technologies, 2022, 5, 2100078.	1.8	7
104	Millimeter-scale focal length tuning with MEMS-integrated meta-optics employing high-throughput fabrication. Scientific Reports, 2022, 12, 5385.	1.6	7
105	Design and optimization of ellipsoid scatterer-based metasurfaces via the inverse T-matrix method. OSA Continuum, 2020, 3, 89.	1.8	6
106	Arithmetic with photons. Nature Photonics, 2016, 10, 4-6.	15.6	5
107	Quantum many-body simulation using monolayer exciton-polaritons in coupled-cavities. Journal of Physics Condensed Matter, 2017, 29, 445703.	0.7	5
108	Dispersive coupling between MoSe₂ and an integrated zero-dimensional nanocavity. Optical Materials Express, 2022, 12, 59.	1.6	5

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109	Electro-optical 1 x 2, 1 x N and N x N fiber-optic and free-space switching over 155 to 30 Î¼m using a Ge-Ge_2Sb_2Te_5-Ge prism structure. Optics Express, 2015, 23, 72.	1.7	4
110	Non-volatile Integrated Photonics enabled by Broadband Transparent Phase Change Material. , 2020, , .		4
111	Phase change material integrated silicon photonics: GST and beyond. , 2020, , .		4
112	Polarization-controlled optical holography using flat optics. Light: Science and Applications, 2020, 9, 134.	7.7	3
113	High Q Chalcogenide Photonic Crystal Nanobeam Cavities. IEEE Photonics Technology Letters, 2021, 33, 525-528.	1.3	3
114	Inverse designed metalenses with extended depth of focus. , 2020, , .		3
115	Image enhancement in a miniature self-imaging degenerate optical cavity. Physical Review A, 2020, 101, .	1.0	2
116	Nonvolatile Electrically Reconfigurable Silicon Photonic Switches Using Phase-Change Materials. , 2019, , .		2
117	GST integrated silicon photonics. , 2019, , .		2
118	Fully Additive Electrohydrodynamic Inkjetâ€Printed TiO₂ Midâ€Infrared Metaâ€Optics. Advanced Materials Interfaces, 2022, 9, .	1.9	2
119	Applications of wavefront control using nano-post based dielectric metasurfaces. , 2020, , 175-194.		1
120	Solid-phase excitation-emission matrix spectroscopy for chemical analysis of combustion aerosols. PLoS ONE, 2021, 16, e0251664.	1.1	1
121	Full-color imaging with PSF-engineered metasurfaces and computational reconstruction. , 2017, , .		1
122	Metaphotonic Computational Image Sensors. , 2020, , .		1
123	Nonvolatile Electrically Reconfigurable Integrated Photonic Switches Using Phase-Change Materials. , 2020, , .		1
124	Metasurfaces for generating complementary wavefront- coded beams for three-dimensional scene reconstruction. , 2020, , .		1
125	Optimal condition to probe strong coupling of two-dimensional excitons and zero-dimensional cavity modes. Physical Review B, 2021, 104, .	1.1	1
126	Two-dimensional materials for integrated optoelectronic information technology. , 2016, , .		0

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127	Characterizing Meta-Lens Performance as a Function of Refractive Index. , 2018, , .		0
128	Strong Photon Antibunching in Weakly Nonlinear Two-Dimensional Exciton-Polaritons. , 2018, , .		0
129	Low-loss Non-volatile Phase-change Integrated Photonics at 1550nm and 750nm. , 2021, , .		0
130	Electrical Switching of Nonvolatile Phase-Change Materials for Integrated Photonics: a Comparison. , 2021, , .		0
131	2D beam shaping via 1D spatial light modulator using static phase masks. Optics Letters, 2021, 46, 2280.	1.7	0
132	Dispersive coupling between MoSe2 and a zero-dimensional integrated nanocavity. , 2021, , .		0
133	Non-volatile silicon photonic switches based on phase change materials. , 2021, , .		0
134	Extended Depth of Focus Metalenses for Achromatic Computational Imaging. , 2021, , .		0
135	Cavity integrated layered material devices. , 2018, , .		0
136	Scaling of Mode Degeneracy and Image Fidelity in a Self-Imaging Optical Resonator. , 2019, , .		0
137	Broadband Low-loss Non-volatile Photonic Switches Using Phase-Change Materials. , 2019, , .		0
138	Deterministic positioning of colloidal quantum dots on silicon nitride nanobeam cavities. , 2019, , .		0
139	Metasurface Optics for Ultra-Compact Augmented Reality (AR) Visors. , 2019, , .		0
140	Ge2Sb2Te5 integrated silicon photonics. , 2019, , .		0
141	Developing ultrathin light emitters and metalenses based on Van der Waals materials. , 2019, , .		0
142	Focal length adjustable metalenses for zoom imaging. , 2019, , .		0
143	Metasurface computational imaging. , 2019, , .		0
144	Large scale three-dimensional inverse design of discrete scatterer optics. , 2019, , .		0

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145	Materials and Devices for Quantum Photonics: introduction to special issue. Optical Materials Express, 2020, 10, 715.	1.6	0
146	Large thermal tuning of polymer-embedded silicon nitride nanobeam cavity. , 2020, , .		0
147	Meta-optical computational imaging systems for large aperture, aberration-free imaging. , 2021, , .		0