Amir Arbabi

List of Publications by Year
in descending order

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104 papers	9,012 citations	101384 36 h-index	118652 62 g-index
105 all docs	105 docs citations	105 times ranked	5971 citing authors

#	Article	IF	Citations
1	Dielectric metasurfaces for complete control of phase and polarization with subwavelength spatial resolution and high transmission. Nature Nanotechnology, 2015, 10, 937-943.	15.6	2,009
2	Subwavelength-thick lenses with high numerical apertures and large efficiency based on high-contrast transmitarrays. Nature Communications, 2015, 6, 7069.	5.8	848
3	MEMS-tunable dielectric metasurface lens. Nature Communications, 2018, 9, 812.	5.8	527
4	A review of dielectric optical metasurfaces for wavefront control. Nanophotonics, 2018, 7, 1041-1068.	2.9	473
5	Miniature optical planar camera based on a wide-angle metasurface doublet corrected for monochromatic aberrations. Nature Communications, 2016, 7, 13682.	5.8	460
6	Multiwavelength polarization-insensitive lenses based on dielectric metasurfaces with meta-molecules. Optica, 2016, 3, 628.	4.8	371
7	Planar metasurface retroreflector. Nature Photonics, 2017, 11, 415-420.	15.6	339
8	Highly tunable elastic dielectric metasurface lenses. Laser and Photonics Reviews, 2016, 10, 1002-1008.	4.4	283
9	Controlling the sign of chromatic dispersion in diffractive optics with dielectric metasurfaces. Optica, 2017, 4, 625.	4.8	259
10	Full-Stokes Imaging Polarimetry Using Dielectric Metasurfaces. ACS Photonics, 2018, 5, 3132-3140.	3.2	247
11	Decoupling optical function and geometrical form using conformal flexible dielectric metasurfaces. Nature Communications, 2016, 7, 11618.	5.8	215
12	Compact folded metasurface spectrometer. Nature Communications, 2018, 9, 4196.	5.8	214
13	Wavefront shaping with disorder-engineered metasurfaces. Nature Photonics, 2018, 12, 84-90.	15.6	205
14	Measurements of the refractive indices and thermo-optic coefficients of Si_3N_4 and SiO_x using microring resonances. Optics Letters, 2013, 38, 3878.	1.7	201
15	Multiwavelength metasurfaces through spatial multiplexing. Scientific Reports, 2016, 6, 32803.	1.6	157
16	Orbital Angular Momentum-based Space Division Multiplexing for High-capacity Underwater Optical Communications. Scientific Reports, 2016, 6, 33306.	1.6	156
17	Angle-Multiplexed Metasurfaces: Encoding Independent Wavefronts in a Single Metasurface under Different Illumination Angles. Physical Review X, 2017, 7, .	2.8	135
18	Fundamental limits of ultrathin metasurfaces. Scientific Reports, 2017, 7, 43722.	1.6	125

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19	Multifunctional 2.5D metastructures enabled by adjoint optimization. Optica, 2020, 7, 77.	4.8	111
20	Optically monitoring and controlling nanoscale topography during semiconductor etching. Light: Science and Applications, 2012, 1, e30-e30.	7.7	108
21	Efficient dielectric metasurface collimating lenses for mid-infrared quantum cascade lasers. Optics Express, 2015, 23, 33310.	1.7	107
22	Visible Wavelength Color Filters Using Dielectric Subwavelength Gratings for Backside-Illuminated CMOS Image Sensor Technologies. Nano Letters, 2017, 17, 3159-3164.	4.5	101
23	Removing orientation-induced localization biases in single-molecule microscopy using a broadband metasurface mask. Nature Photonics, 2016, 10, 459-462.	15.6	98
24	Vectorial Holograms with a Dielectric Metasurface: Ultimate Polarization Pattern Generation. ACS Photonics, 2019, 6, 2712-2718.	3.2	89
25	High efficiency double-wavelength dielectric metasurface lenses with dichroic birefringent meta-atoms. Optics Express, 2016, 24, 18468.	1.7	88
26	Detecting 20 nm Wide Defects in Large Area Nanopatterns Using Optical Interferometric Microscopy. Nano Letters, 2013, 13, 3716-3721.	4.5	85
27	Two-Photon Microscopy with a Double-Wavelength Metasurface Objective Lens. Nano Letters, 2018, 18, 4943-4948.	4.5	77
28	Large-Scale Parametrized Metasurface Design Using Adjoint Optimization. ACS Photonics, 2021, 8, 455-463.	3.2	70
29	Realization of a narrowband single wavelength microring mirror. Applied Physics Letters, 2011, 99, .	1.5	62
30	Wide bandwidth and high resolution planar filter array based on DBR-metasurface-DBR structures. Optics Express, 2016, 24, 11677.	1.7	62
31	High-Speed, Phase-Dominant Spatial Light Modulation with Silicon-Based Active Resonant Antennas. ACS Photonics, 2018, 5, 1711-1717.	3.2	62
32	Hyperspectral Imager with Folded Metasurface Optics. ACS Photonics, 2019, 6, 2161-2167.	3.2	58
33	Snapshot spectral imaging with parallel metasystems. Science Advances, 2020, 6, .	4.7	57
34	Scalable Nanoimprint Lithography Process for Manufacturing Visible Metasurfaces Composed of High Aspect Ratio TiO₂ Meta-Atoms. ACS Photonics, 2021, 8, 2400-2409.	3.2	51
35	Grating integrated single mode microring laser. Optics Express, 2015, 23, 5335.	1.7	39
36	Increasing efficiency of high numerical aperture metasurfaces using the grating averaging technique. Scientific Reports, 2020, 10, 7124.	1.6	39

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37	Engineering the spectral reflectance of microring resonators with integrated reflective elements. Optics Express, 2010, 18, 16813.	1.7	35
38	At-will chromatic dispersion by prescribing light trajectories with cascaded metasurfaces. Light: Science and Applications, 2020, 9, 93.	7.7	32
39	A microring resonator with an integrated Bragg grating: a compact replacement for a sampled grating distributed Bragg reflector. Optical and Quantum Electronics, 2009, 41, 689-697.	1.5	28
40	Exceptional electromagnetic shielding efficiency of silver coated carbon fiber fabrics via a roll-to-roll spray coating process. Journal of Materials Chemistry C, 2020, 8, 11070-11078.	2.7	25
41	Maximum Gain of a Lossy Antenna. IEEE Transactions on Antennas and Propagation, 2012, 60, 2-7.	3.1	24
42	Hydrogen Detection Using a Functionalized Photonic Crystal Vertical Cavity Laser. IEEE Journal of Quantum Electronics, 2012, 48, 160-168.	1.0	23
43	High resolution on-chip optical filter array based on double subwavelength grating reflectors. Optics Express, 2015, 23, 29848.	1.7	23
44	Coupling erbium dopants in yttrium orthosilicate to silicon photonic resonators and waveguides. Optics Express, 2017, 25, 2863.	1.7	21
45	Measuring the Nonuniform Evaporation Dynamics of Sprayed Sessile Microdroplets with Quantitative Phase Imaging. Langmuir, 2015, 31, 11020-11032.	1.6	20
46	Fabrication of Single Crystal Gallium Phosphide Thin Films on Glass. Scientific Reports, 2017, 7, 4643.	1.6	20
47	Cylindrical Coordinates Coupled Mode Theory. IEEE Journal of Quantum Electronics, 2010, 46, 1769-1774.	1.0	16
48	Dynamics of Self-Heating in Microring Resonators. IEEE Photonics Journal, 2012, 4, 1702-1711.	1.0	16
49	Up- and Down-Conversion between Intra- and Intervalley Excitons in Waveguide Coupled Monolayer WSe₂. ACS Nano, 2020, 14, 10503-10509.	7.3	14
50	Orbital angular momentum beams generated by passive dielectric phase masks and their performance in a communication link. Optics Letters, 2017, 42, 2746.	1.7	13
51	General Lossless Polarization and Phase Transformation Using Bilayer Metasurfaces. Advanced Optical Materials, 2022, 10, .	3.6	13
52	Highly tunable elastic dielectric metasurface lenses (Laser Photonics Rev. 10(6)/2016). Laser and Photonics Reviews, 2016, 10, 1062-1062.	4.4	12
53	Modeling Metasurfaces Using Discrete-Space Impulse Response Technique. ACS Photonics, 2020, 7, 941-950.	3.2	8
54	Controlling the Phase Front of Optical Fiber Beams using High Contrast Metastructures. , 2014, , .		6

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55	Engineering the Sensitivity and Response Time of Edge-Emitting Laser Hydrogen Sensors. IEEE Sensors Journal, 2013, 13, 3098-3105.	2.4	5
56	Planar Retroreflector. , 2014, , .		5
57	Increasing efficiency of high-NA metasurface lenses (Conference Presentation). , 2017, , .		5
58	Large-scale Metasurface Design using the Adjoint Sensitivity Technique. , 2018, , .		5
59	A terahertz plasmonic metamaterial structure for near-field sensing applications. , 2008, , .		4
60	Integrated Optical Resonators: Progress in 2011. IEEE Photonics Journal, 2012, 4, 574-577.	1.0	4
61	Demonstration of enhanced side-mode suppression in metal-filled photonic crystal vertical cavity lasers. Optics Letters, 2013, 38, 1936.	1.7	4
62	Reflective Optical Phase Modulator Based on High-Contrast Grating Mirrors. , 2014, , .		3
63	Efficient high NA flat micro-lenses realized using high contrast transmitarrays. , 2015, , .		3
64	Flat free-space optical elements based on dielectric metasurfaces. SPIE Newsroom, 0, , .	0.1	3
65	Single Wavelength Microring Laser. , 2013, , .		2
66	Modal expansion approach for accurately computing resonant modes in a highâ€Q optical resonator. Microwave and Optical Technology Letters, 2014, 56, 278-284.	0.9	2
67	Fast and accurate finite element analysis of large-scale three-dimensional photonic devices with a robust domain decomposition method. Optics Express, 2014, 22, 4437.	1.7	2
68	Highly efficient polarization control using subwavelength high contrast transmitarrays. , 2015, , .		2
69	Dispersionless metasurfaces using dispersive meta-atoms. , 2016, , .		2
70	Properties of Ideal Flat Metalenses. , 2020, , .		2
71	Coupled Mode Analysis of a Distributed Bragg Reflector Laser for Hydrogen Detection. , 2012, , .		2
72	Palladium Based Fabry-PÃ©rot Etalons for Hydrogen Sensing. , 2012, , .		2

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73	Pd coated edge-emitting lasers for hydrogen sensing applications. , 2010, , .		1
74	Resolving split resonant modes in microrings. , 2012, , .		1
75	Mode suppression in metal filled photonic crystal vertical cavity lasers. Proceedings of SPIE, 2012, , .	0.8	1
76	Guided resonance reflective phase shifters. Proceedings of SPIE, 2015, , .	0.8	1
77	On-chip broadband spectral filtering using planar double high-contrast grating reflectors. Proceedings of SPIE, 2015, , .	0.8	1
78	Flat and conformal optics with dielectric metasurfaces. , 2017, , .		1
79	MEMS-tunable dielectric metasurface lens. , 2018, , .		1
80	Folded Dielectric Metasurface Platform for Compact Optical Systems. , 2019, , .		1
81	Applications of wavefront control using nano-post based dielectric metasurfaces. , 2020, , 175-194.		1
82	Tunable dielectric metasurfaces using elastic substrates. , 2016, , .		1
83	Aberration Corrected Metasurface Doublet Lens. , 2016, , .		1
84	Dielectric metasurface narrowband filter array. , 2016, , .		1
85	A FUNDAMENTAL LIMIT ON SUBWAVELENGTH GUIDED WAVES. Progress in Electromagnetics Research M, 2011, 17, 253-265.	0.5	0
86	Realization of small footprint microring reflectors. , 2011, , .		0
87	Determination of waveguide core and cladding refractive indices using single wavelength microring reflectors. , 2012, , .		0
88	Functionalized distributed feedback lasers for hydrogen sensing applications. , 2013, , .		0
89	Grating assisted mode coupling in microring resonators. , 2013, , .		0
90	An active-passive monolithic integration platform with low loss passive section. , 2013, , .		0

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91	Characterizing microdroplet evaporation using diffraction phase microscopy. , 2014, , .		0
92	Simultaneous and Complete Control of Light Polarization and Phase using High Contrast Transmitarrays. , 2015, , .		0
93	Dielectric metasurfaces with independent angular control. , 2017, , .		0
94	Dispersion-controlled diffractive devices with dielectric metasurfaces. , 2017, , .		0
95	Folded planar metasurface spectrometer. , 2018, , .		0
96	Analysis and Design of a Microring Inline Single Wavelength Reflector. , 2010, , .		0
97	Thermally-induced nonlinearity and optical bistability in Si3N4 microring resonators. , 2012, , .		0
98	Demonstration of using Passive Integrated Phase Masks to Generate Orbital-Angular-Momentum Beams in a Communications Link. , 2016, , .		0
99	Active dielectric antenna for phase only spatial light modulation. , 2016, , .		0
100	Optical Clock Pulse Generation Using Thermal Nonlinearity in Microring Resonators. , 2016, , .		0
101	Conformai and tunable optical dielectric metasurfaces based on flexible stretchable substrates. , 2016, , .		0
102	Angle-multiplexed metasurfaces. , 2018, , .		0
103	Miniaturized folded metasurface hyperspectral imager. , 2019, , .		0
104	Free-space-coupled wavelength-scale disk resonators. Nanophotonics, 2022, .	2.9	0