Robert Halir

List of Publications by Year
in descending order

138 papers	4,778 citations	109321 35 h-index	95266 68 g-index
138 all docs	138 docs citations	138 times ranked	2811 citing authors

#	Article	IF	Citations
1	Polarization-independent multimode interference coupler with anisotropy-engineered bricked metamaterial. Photonics Research, 2022, 10, A57.	7.0	11
2	Subwavelength-engineered metamaterial devices for integrated photonics. , 2022, , .		1
3	Mode Converter and Multiplexer With a Subwavelength Phase Shifter for Extended Broadband Operation. IEEE Photonics Technology Letters, 2021, 33, 1262-1265.	2.5	7
4	Bricked Subwavelength Gratings: A Tailorable Onâ€Chip Metamaterial Topology. Laser and Photonics Reviews, 2021, 15, 2000478.	8.7	18
5	High-efficiency conversion from waveguide mode to an on-chip beam using a metamaterial engineered Bragg deflector. Optics Letters, 2021, 46, 2409.	3.3	8
6	Breaking the Coupling Efficiencyâ€“Bandwidth Tradeâ€Off in Surface Grating Couplers Using Zeroâ€Order Radiation. Laser and Photonics Reviews, 2021, 15, 2000542.	8.7	15
7	A review of silicon subwavelength gratings: building break-through devices with anisotropic metamaterials. Nanophotonics, 2021, 10, 2765-2797.	6.0	70
8	Broadband 2â€‰â€‰Ã—â€‰â€‰2 multimode interference coupler for mid-infrared wavelengths. Optics Letters, 2021, 46, 5300.	3.3	7
9	Low-loss off-axis curved waveguide grating demultiplexer. Optics Letters, 2021, 46, 4821.	3.3	3
10	Building high-performance integrated optical devices using subwavelength grating metamaterials -INVITED. EPJ Web of Conferences, 2021, 255, 01001.	0.3	0
11	Bricked patterning: a new concept to enhance the capabilities of subwavelength grating waveguides. , 2021, , .		0
12	Silicon Photonic Label Free Biosensors with Coherent Readout. , 2020, , .		2
13	Metamaterial engineered C+L band 90Â° hybrid with 150 nm feature size. , 2020, , .		0
14	Dispersion-engineered nanophotonic devices based on subwavelength metamaterial waveguides. , 2020, , .		1
15	Experimental demonstration of a broadband mode converter and multiplexer based on subwavelength grating waveguides. Optics and Laser Technology, 2020, 129, 106297.	4.6	25
16	Experimental demonstration of metamaterial anisotropy engineering for broadband on-chip polarization beam splitting. Optics Express, 2020, 28, 16385.	3.4	31
17	Narrowband Bragg filters based on subwavelength grating waveguides for silicon photonic sensing. Optics Express, 2020, 28, 37971.	3.4	22
18	Polarization splitting directional coupler using tilted subwavelength gratings. Optics Letters, 2020, 45, 3398.	3.3	26

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19	Highly efficient optical antenna with small beam divergence in silicon waveguides. Optics Letters, 2020, 45, 5668.	3.3	24
20	Coherent silicon photonic interferometric biosensor with an inexpensive laser source for sensitive label-free immunoassays. Optics Letters, 2020, 45, 6595.	3.3	11
21	A broadband polarization splitter directional coupler based on tilted subwavelengh grating metamaterials. , 2020, , .		0
22	Low Limit of Detection Silicon Photonic Sensor with Extremely-Low-Cost Laser Source. , 2020, , .		1
23	An Ultracompact GRINâ€Lensâ€Based Spot Size Converter using Subwavelength Grating Metamaterials. Laser and Photonics Reviews, 2019, 13, 1900172.	8.7	47
24	Suspended Germanium Waveguide for Infrared Wavelengths. , 2019, , .		1
25	Zero-Birefringence Silicon Waveguides Based on Tilted Subwavelength Metamaterials. IEEE Photonics Journal, 2019, 11, 1-8.	2.0	14
26	Optimizing the Limit of Detection of Waveguide-Based Interferometric Biosensor Devices. Sensors, 2019, 19, 3671.	3.8	36
27	High performance silicon photonic devices based on practical metamaterials. , 2019, , .		1
28	Design of a Broadband Polarization Splitter Based on Anisotropy-Engineered Tilted Subwavelength Gratings. IEEE Photonics Journal, 2019, 11, 1-8.	2.0	34
29	Recent Advances in Metamaterial Integrated Photonics. , 2019, , .		0
30	Suspended Silicon Integrated Platform for the Long-Wavelength Mid-Infrared Band. , 2019, , .		0
31	[INVITED] Subwavelength structures for silicon photonics biosensing. Optics and Laser Technology, 2019, 109, 437-448.	4.6	79
32	Midâ€infrared suspended waveguide platform and building blocks. IET Optoelectronics, 2019, 13, 55-61.	3.3	21
33	Fundamental limit of detection of photonic biosensors with coherent phase read-out. Optics Express, 2019, 27, 12616.	3.4	33
34	Design of a suspended germanium micro-antenna for efficient fiber-chip coupling in the long-wavelength mid-infrared range. Optics Express, 2019, 27, 22302.	3.4	16
35	Distributed Bragg deflector coupler for on-chip shaping of optical beams. Optics Express, 2019, 27, 33180.	3.4	17
36	Bragg filter bandwidth engineering in subwavelength grating metamaterial waveguides. Optics Letters, 2019, 44, 1043.	3.3	41

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37	Designing polarization management devices by tilting subwavelength grating. , 2019, , .		0
38	Diffractive sidewall grating coupler: towards 2D free-space optics on chip. , 2019, , .		0
39	GAMIFICATION MODELS AND TOOLS ACCORDING TO PROFILES: AN EXPERIENCE IN ENGINEERING DEGREES. , 2019, , .		0
40	Ultra-Broadband Mode Converter and Multiplexer Based on Sub-Wavelength Structures. IEEE Photonics Journal, 2018, 10, 1-10.	2.0	65
41	Designing Anisotropy with Waveguide Subwavelength Structures. , 2018, , .		1
42	Silicon and Germanium Suspended Waveguides for the Mid-Infrared. , 2018, , .		1
43	Tilted subwavelength gratings: controlling anisotropy in metamaterial nanophotonic waveguides. Optics Letters, 2018, 43, 4691.	3.3	60
44	Subwavelength integrated photonics. Nature, 2018, 560, 565-572.	27.8	594
45	Suspended silicon waveguides for long-wave infrared wavelengths. Optics Letters, 2018, 43, 795.	3.3	79
46	Subwavelength-Grating Metamaterial Structures for Silicon Photonic Devices. Proceedings of the IEEE, 2018, 106, 2144-2157.	21.3	155
47	SOME INGREDIENTS TO IMPROVE GAMIFICATION IN ENGINEERING. , 2018, , .		0
48	Subwavelength metamaterial engineering for silicon photonics. , 2017, , .		1
49	Broadband high-efficiency zero-order surface grating coupler for the near- and mid-infrared wavelength ranges. , 2017, , .		2
50	Tunable index back end of line platform for enhanced integrated photonics. , 2017, , .		0
51	Ultra-broadband mode (de)multiplexer based on a sub-wavelength engineered MMI coupler. , 2017, , .		2
52	Broadband and high-performance devices for the silicon and silicon-nitride platforms. , 2017, , .		2
53	Subwavelength Index Engineered Waveguides and Devices. , 2017, , .		3
54	Disorder effects in subwavelength grating metamaterial waveguides. Optics Express, 2017, 25, 12222.	3.4	31

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55	Experimental demonstration of an apodized-imaging chip-fiber grating coupler for Si_3N_4 waveguides. Optics Letters, 2017, 42, 3566.	3.3	42
56	Subwavelength nanophotonic structures for integration, sensing and spectroscopy. , 2017, , .		0
57	Subwavelength grating metamaterial waveguides for silicon photonic integrated circuits. , 2017, , .		0
58	ARE SPANISH UNIVERSITY STUDENTS READY FOR LECTURES IN ENGLISH?. EDULEARN Proceedings, 2017, , .	0.0	0
59	GAMIFICATION TO FIGHT LACK OF MOTIVATION AND HETEROGENEITY IN ENGINEERING. EDULEARN Proceedings, 2017, , .	0.0	0
60	High-efficiency apodized-imaging chip-fiber grating coupler for silicon nitride waveguides. Optics Letters, 2016, 41, 5059.	3.3	36
61	Suspended silicon mid-infrared waveguide devices with subwavelength grating metamaterial cladding. Optics Express, 2016, 24, 22908.	3.4	118
62	Integrated polarization controllers. , 2016, , .		0
63	Subwavelength engineered structures for integrated photonics. , 2016, , .		0
64	Silicon-on-insulator integrated tunable polarization controller (Conference Presentation). , 2016, , .		0
65	Single-etch subwavelength engineered fiber-chip grating couplers for 13 Âµm datacom wavelength band. Optics Express, 2016, 24, 12893.	3.4	38
66	Subwavelength structures for nanophotonic couplers, colourless splitters, polarization control and mid-infrared waveguides. , 2016, , .		0
67	Broadband fiber-chip zero-order surface grating coupler with 04â€‰â€‰dB efficiency. Optics Letters, 2016, 41, 3013.	3.3	46
68	Controlling leakage losses in subwavelength grating silicon metamaterial waveguides. Optics Letters, 2016, 41, 3443.	3.3	60
69	Subwavelength engineering in silicon photonics. , 2016, , .		0
70	Ultraâ€broadband nanophotonic beamsplitter using an anisotropic subâ€wavelength metamaterial. Laser and Photonics Reviews, 2016, 10, 1039-1046.	8.7	148
71	Fiber-chip edge coupler with large mode size for silicon photonic wire waveguides. Optics Express, 2016, 24, 5026.	3.4	104
72	Coherent receivers for demanding applications. , 2016, , .		1

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73	Sub-wavelength cladding mid-infrared devices. , 2015, , .		0
74	Colorless devices and reception techniques for polarization multiplexed communications. , 2015, , .		0
75	First experimental demonstration of high-directionality fiber-chip grating coupler with interleaved trenches. , 2015, , .		0
76	Subwavelength waveguide structures for optical interconnects. , 2015, , .		0
77	Demonstration of integrated polarization control with a 40â€‰â€‰dB range in extinction ratio. Optica, 2015, 2, 1019.	9.3	33
78	Waveguide subâ€wavelength structures: a review of principles and applications. Laser and Photonics Reviews, 2015, 9, 25-49.	8.7	475
79	A subwavelength structured multimode interference coupler for the 3-4 micrometers mid-infrared band. Proceedings of SPIE, 2015, , .	0.8	0
80	Fiber-chip edge coupler with large mode size for silicon photonic wire waveguides. , 2015, , .		3
81	High-directionality fiber-chip grating coupler with interleaved trenches and subwavelength index-matching structure. Optics Letters, 2015, 40, 4190.	3.3	89
82	Subwavelength index engineered surface grating coupler with sub-decibel efficiency for 220-nm silicon-on-insulator waveguides. Optics Express, 2015, 23, 22628.	3.4	106
83	High-efficiency fully etched fiber-chip grating couplers with subwavelength structures for datacom and telecom applications. Proceedings of SPIE, 2015, , .	0.8	1
84	High-efficiency subwavelength-engineered surface grating couplers in SOI and DSOI. , 2014, , .		0
85	Polarization-beam-splitter-less integrated dual-polarization coherent receiver. Optics Letters, 2014, 39, 4400.	3.3	6
86	Evanescent field waveguide sensing with subwavelength grating structures in silicon-on-insulator. Optics Letters, 2014, 39, 4442.	3.3	143
87	Recent Advances in Silicon Waveguide Devices Using Sub-Wavelength Gratings. IEEE Journal of Selected Topics in Quantum Electronics, 2014, 20, 279-291.	2.9	77
88	Subwavelength metastructures for dispersion engineering in planar waveguide devices. , 2014, , .		0
89	Integrated Polarization Beam Splitter for 100/400 GE Polarization Multiplexed Coherent Optical Communications. Journal of Lightwave Technology, 2014, 32, 361-368.	4.6	27
90	Integrated planar waveguide devices for evanescent field sensing and spectroscopy. , 2014, , .		0

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91	56Gbaud DP-QPSK receiver module with a monolithic integrated PBS and 90° hybrid InP chip. , 2014, , .		3
92	Silicon photonic integration with subwavelength gratings. , 2014, , .		0
93	Highâ€efficiency single etch step apodized surface grating coupler using subwavelength structure. Laser and Photonics Reviews, 2014, 8, L93.	8.7	68
94	Silicon-on-insulator polarization controller with relaxed fabrication tolerances. , 2014, , .		1
95	SWG dispersion engineering for ultra-broadband photonic devices. , 2013, , .		0
96	An ultraâ€compact multimode interference coupler with a subwavelength grating slot. Laser and Photonics Reviews, 2013, 7, L12.	8.7	29
97	A general approach for robust integrated polarization rotators. , 2013, , .		2
98	Direct and Sensitive Phase Readout for Integrated Waveguide Sensors. IEEE Photonics Journal, 2013, 5, 6800906-6800906.	2.0	33
99	Wavelength independent multimode interference coupler. Optics Express, 2013, 21, 7033.	3.4	128
100	Integrated polarization beam splitter with relaxed fabrication tolerances. Optics Express, 2013, 21, 14146.	3.4	77
101	Re-inventing multimode interference couplers using subwavelength gratings. , 2013, , .		0
102	Recent advances in subwavelength engineering in integrated optics. , 2013, , .		0
103	Polarization-independent grating coupler for micrometric silicon rib waveguides. Optics Letters, 2012, 37, 3663.	3.3	19
104	Colorless directional coupler with dispersion engineered sub-wavelength structure. Optics Express, 2012, 20, 13470.	3.4	122
105	Ultrabroadband supercontinuum generation in a CMOS-compatible platform. Optics Letters, 2012, 37, 1685.	3.3	176
106	Highly tolerant tunable waveguide polarization rotator scheme. Optics Letters, 2012, 37, 3534.	3.3	18
107	Diffractive and subwavelength grating couplers for microphotonic waveguides. , 2012, , .		0
108	Grating couplers in thick rib SOI waveguides for TE and TM polarizations. , 2012, , .		0

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109	New concepts in silicon component design using subwavelength structures. , 2012, , .		2
110	Single etch grating couplers for mass fabrication with DUV lithography. Optical and Quantum Electronics, 2012, 44, 521-526.	3.3	27
111	Grating couplers for thick SOI rib waveguides. Optical and Quantum Electronics, 2012, 44, 535-540.	3.3	7
112	Subwavelength structures in SOI waveguides. , 2011, , .		0
113	High-Performance Multimode Interference Coupler in Silicon Waveguides With Subwavelength Structures. IEEE Photonics Technology Letters, 2011, 23, 1406-1408.	2.5	57
114	High-performance 90Â° hybrid based on a silicon-on-insulator multimode interference coupler. Optics Letters, 2011, 36, 178.	3.3	78
115	Single-etch grating coupler for micrometric silicon rib waveguides. Optics Letters, 2011, 36, 2647.	3.3	32
116	Silicon photonic wire evanescent field sensors: sensor arrays and instrumentation. Proceedings of SPIE, 2011, , .	0.8	1
117	Engineering light at the sub-wavelength scale using silicon photonics. Proceedings of SPIE, 2011, , .	0.8	0
118	Subwavelength and diffractive waveguide structures and their applications in nanophotonics and sensing. Proceedings of SPIE, 2011, , .	0.8	0
119	Grating-Based Optical Fiber Interfaces for Silicon-on-Insulator Photonic Integrated Circuits. IEEE Journal of Selected Topics in Quantum Electronics, 2011, 17, 571-580.	2.9	114
120	High performance multimode interference couplers for coherent communications in silicon. , 2011, , .		2
121	Refractive Index Engineering With Subwavelength Gratings in Silicon Microphotonic Waveguides. IEEE Photonics Journal, 2011, 3, 597-607.	2.0	43
122	Efficient fibre-chip grating coupler for thick SOI rib waveguides. , 2011, , .		0
123	Octave-Spanning Supercontinuum Generation in CMOS-Compatible Silicon Nitride Waveguides. , 2011, , .		0
124	Silicon-on-Insulator Tunable Wavelength Router with Minimized Polarization Dependent Loss. , 2010, , .		0
125	Integration of vertical grating couplers and microfluidic channels with silicon photonic wire biosensor arrays. , 2010, , .		2
126	Sixport technique for phase measurement of guided optical fields. , 2010, , .		0

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127	Reducing Polarization-Dependent Loss of Silicon-on-Insulator Fiber to Chip Grating Couplers. IEEE Photonics Technology Letters, 2010, 22, 389-391.	2.5	29
128	Efficient fiber-to-chip grating coupler for micrometric SOI rib waveguides. Optics Express, 2010, 18, 15189.	3.4	55
129	Continuously apodized fiber-to-chip surface grating coupler with refractive index engineered subwavelength structure. Optics Letters, 2010, 35, 3243.	3.3	158
130	Athermal InP-based 90Â°-hybrid Rx OEICs with pin-PDs >60 GHz for coherent DP-QPSK photoreceivers. , 2010, , .		4
131	Detecting spurious reflections in integrated photonic devices. , 2009, , .		0
132	Waveguide grating coupler with subwavelength microstructures. Optics Letters, 2009, 34, 1408.	3.3	190
133	Integrated Optical Six-Port Reflectometer in Silicon on Insulator. Journal of Lightwave Technology, 2009, 27, 5405-5409.	4.6	9
134	Characterization of integrated photonic devices with minimum phase technique. Optics Express, 2009, 17, 8349.	3.4	19
135	Compact High-Performance Multimode Interference Couplers in Silicon-on-Insulator. IEEE Photonics Technology Letters, 2009, 21, 1600-1602.	2.5	21
136	First monolithic InP-based 90°-hybrid OEIC comprising balanced detectors for 100GE coherent frontends. , 2009, , .		23
137	A Design Procedure for High-Performance, Rib-Waveguide-Based Multimode Interference Couplers in Silicon-on-Insulator. Journal of Lightwave Technology, 2008, 26, 2928-2936.	4.6	51
138	Fabrication Tolerance Analysis of Bent Single-Mode Rib Waveguides on SOI. Optical and Quantum Electronics, 2007, 38, 921-932.	3.3	6