Robert Halir

List of Publications by Year
in descending order

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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	Subwavelength integrated photonics. Nature, 2018, 560, 565-572.	27.8	594
2	Waveguide subâ€wavelength structures: a review of principles and applications. Laser and Photonics Reviews, 2015, 9, 25-49.	8.7	475
3	Waveguide grating coupler with subwavelength microstructures. Optics Letters, 2009, 34, 1408.	3.3	190
4	Ultrabroadband supercontinuum generation in a CMOS-compatible platform. Optics Letters, 2012, 37, 1685.	3.3	176
5	Continuously apodized fiber-to-chip surface grating coupler with refractive index engineered subwavelength structure. Optics Letters, 2010, 35, 3243.	3.3	158
6	Subwavelength-Grating Metamaterial Structures for Silicon Photonic Devices. Proceedings of the IEEE, 2018, 106, 2144-2157.	21.3	155
7	Ultraâ€broadband nanophotonic beamsplitter using an anisotropic subâ€wavelength metamaterial. Laser and Photonics Reviews, 2016, 10, 1039-1046.	8.7	148
8	Evanescent field waveguide sensing with subwavelength grating structures in silicon-on-insulator. Optics Letters, 2014, 39, 4442.	3.3	143
9	Wavelength independent multimode interference coupler. Optics Express, 2013, 21, 7033.	3.4	128
10	Colorless directional coupler with dispersion engineered sub-wavelength structure. Optics Express, 2012, 20, 13470.	3.4	122
11	Suspended silicon mid-infrared waveguide devices with subwavelength grating metamaterial cladding. Optics Express, 2016, 24, 22908.	3.4	118
12	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
13	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
14	Fiber-chip edge coupler with large mode size for silicon photonic wire waveguides. Optics Express, 2016, 24, 5026.	3.4	104
15	High-directionality fiber-chip grating coupler with interleaved trenches and subwavelength index-matching structure. Optics Letters, 2015, 40, 4190.	3.3	89
16	Suspended silicon waveguides for long-wave infrared wavelengths. Optics Letters, 2018, 43, 795.	3.3	79
17	[INVITED] Subwavelength structures for silicon photonics biosensing. Optics and Laser Technology, 2019, 109, 437-448.	4.6	79
18	High-performance 90Â° hybrid based on a silicon-on-insulator multimode interference coupler. Optics Letters, 2011, 36, 178.	3.3	78

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19	Integrated polarization beam splitter with relaxed fabrication tolerances. Optics Express, 2013, 21, 14146.	3.4	77
20	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
21	A review of silicon subwavelength gratings: building break-through devices with anisotropic metamaterials. Nanophotonics, 2021, 10, 2765-2797.	6.0	70
22	Highâ€efficiency single etch step apodized surface grating coupler using subwavelength structure. Laser and Photonics Reviews, 2014, 8, L93.	8.7	68
23	Ultra-Broadband Mode Converter and Multiplexer Based on Sub-Wavelength Structures. IEEE Photonics Journal, 2018, 10, 1-10.	2.0	65
24	Controlling leakage losses in subwavelength grating silicon metamaterial waveguides. Optics Letters, 2016, 41, 3443.	3.3	60
25	Tilted subwavelength gratings: controlling anisotropy in metamaterial nanophotonic waveguides. Optics Letters, 2018, 43, 4691.	3.3	60
26	High-Performance Multimode Interference Coupler in Silicon Waveguides With Subwavelength Structures. IEEE Photonics Technology Letters, 2011, 23, 1406-1408.	2.5	57
27	Efficient fiber-to-chip grating coupler for micrometric SOI rib waveguides. Optics Express, 2010, 18, 15189.	3.4	55
28	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
29	An Ultracompact GRINâ€Lensâ€Based Spot Size Converter using Subwavelength Grating Metamaterials. Laser and Photonics Reviews, 2019, 13, 1900172.	8.7	47
30	Broadband fiber-chip zero-order surface grating coupler with 04â€‰â€‰dB efficiency. Optics Letters, 2016, 41, 3013.	3.3	46
31	Refractive Index Engineering With Subwavelength Gratings in Silicon Microphotonic Waveguides. IEEE Photonics Journal, 2011, 3, 597-607.	2.0	43
32	Experimental demonstration of an apodized-imaging chip-fiber grating coupler for Si_3N_4 waveguides. Optics Letters, 2017, 42, 3566.	3.3	42
33	Bragg filter bandwidth engineering in subwavelength grating metamaterial waveguides. Optics Letters, 2019, 44, 1043.	3.3	41
34	Single-etch subwavelength engineered fiber-chip grating couplers for 13 Âµm datacom wavelength band. Optics Express, 2016, 24, 12893.	3.4	38
35	High-efficiency apodized-imaging chip-fiber grating coupler for silicon nitride waveguides. Optics Letters, 2016, 41, 5059.	3.3	36
36	Optimizing the Limit of Detection of Waveguide-Based Interferometric Biosensor Devices. Sensors, 2019, 19, 3671.	3.8	36

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37	Design of a Broadband Polarization Splitter Based on Anisotropy-Engineered Tilted Subwavelength Gratings. IEEE Photonics Journal, 2019, 11, 1-8.	2.0	34
38	Direct and Sensitive Phase Readout for Integrated Waveguide Sensors. IEEE Photonics Journal, 2013, 5, 6800906-6800906.	2.0	33
39	Demonstration of integrated polarization control with a 40â€‰â€‰dB range in extinction ratio. Optica, 2015, 2, 1019.	9.3	33
40	Fundamental limit of detection of photonic biosensors with coherent phase read-out. Optics Express, 2019, 27, 12616.	3.4	33
41	Single-etch grating coupler for micrometric silicon rib waveguides. Optics Letters, 2011, 36, 2647.	3.3	32
42	Disorder effects in subwavelength grating metamaterial waveguides. Optics Express, 2017, 25, 12222.	3.4	31
43	Experimental demonstration of metamaterial anisotropy engineering for broadband on-chip polarization beam splitting. Optics Express, 2020, 28, 16385.	3.4	31
44	Reducing Polarization-Dependent Loss of Silicon-on-Insulator Fiber to Chip Grating Couplers. IEEE Photonics Technology Letters, 2010, 22, 389-391.	2.5	29
45	An ultraâ€compact multimode interference coupler with a subwavelength grating slot. Laser and Photonics Reviews, 2013, 7, L12.	8.7	29
46	Single etch grating couplers for mass fabrication with DUV lithography. Optical and Quantum Electronics, 2012, 44, 521-526.	3.3	27
47	Integrated Polarization Beam Splitter for 100/400 GE Polarization Multiplexed Coherent Optical Communications. Journal of Lightwave Technology, 2014, 32, 361-368.	4.6	27
48	Polarization splitting directional coupler using tilted subwavelength gratings. Optics Letters, 2020, 45, 3398.	3.3	26
49	Experimental demonstration of a broadband mode converter and multiplexer based on subwavelength grating waveguides. Optics and Laser Technology, 2020, 129, 106297.	4.6	25
50	Highly efficient optical antenna with small beam divergence in silicon waveguides. Optics Letters, 2020, 45, 5668.	3.3	24
51	First monolithic InP-based 90°-hybrid OEIC comprising balanced detectors for 100GE coherent frontends. , 2009, , .		23
52	Narrowband Bragg filters based on subwavelength grating waveguides for silicon photonic sensing. Optics Express, 2020, 28, 37971.	3.4	22
53	Compact High-Performance Multimode Interference Couplers in Silicon-on-Insulator. IEEE Photonics Technology Letters, 2009, 21, 1600-1602.	2.5	21
54	Midâ€infrared suspended waveguide platform and building blocks. IET Optoelectronics, 2019, 13, 55-61.	3.3	21

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55	Characterization of integrated photonic devices with minimum phase technique. Optics Express, 2009, 17, 8349.	3.4	19
56	Polarization-independent grating coupler for micrometric silicon rib waveguides. Optics Letters, 2012, 37, 3663.	3.3	19
57	Highly tolerant tunable waveguide polarization rotator scheme. Optics Letters, 2012, 37, 3534.	3.3	18
58	Bricked Subwavelength Gratings: A Tailorable Onâ€Chip Metamaterial Topology. Laser and Photonics Reviews, 2021, 15, 2000478.	8.7	18
59	Distributed Bragg deflector coupler for on-chip shaping of optical beams. Optics Express, 2019, 27, 33180.	3.4	17
60	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
61	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
62	Zero-Birefringence Silicon Waveguides Based on Tilted Subwavelength Metamaterials. IEEE Photonics Journal, 2019, 11, 1-8.	2.0	14
63	Coherent silicon photonic interferometric biosensor with an inexpensive laser source for sensitive label-free immunoassays. Optics Letters, 2020, 45, 6595.	3.3	11
64	Polarization-independent multimode interference coupler with anisotropy-engineered bricked metamaterial. Photonics Research, 2022, 10, A57.	7.0	11
65	Integrated Optical Six-Port Reflectometer in Silicon on Insulator. Journal of Lightwave Technology, 2009, 27, 5405-5409.	4.6	9
66	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
67	Grating couplers for thick SOI rib waveguides. Optical and Quantum Electronics, 2012, 44, 535-540.	3.3	7
68	Mode Converter and Multiplexer With a Subwavelength Phase Shifter for Extended Broadband Operation. IEEE Photonics Technology Letters, 2021, 33, 1262-1265.	2.5	7
69	Broadband 2â€‰â€‰Ã—â€‰â€‰2 multimode interference coupler for mid-infrared wavelengths. Optics Letters, 2021, 46, 5300.	3.3	7
70	Fabrication Tolerance Analysis of Bent Single-Mode Rib Waveguides on SOI. Optical and Quantum Electronics, 2007, 38, 921-932.	3.3	6
71	Polarization-beam-splitter-less integrated dual-polarization coherent receiver. Optics Letters, 2014, 39, 4400.	3.3	6
72	Athermal InP-based 90Â°-hybrid Rx OEICs with pin-PDs >60 GHz for coherent DP-QPSK photoreceivers. , 2010, , .		4

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73	56Gbaud DP-QPSK receiver module with a monolithic integrated PBS and 90° hybrid InP chip. , 2014, , .		3
74	Fiber-chip edge coupler with large mode size for silicon photonic wire waveguides. , 2015, , .		3
75	Subwavelength Index Engineered Waveguides and Devices. , 2017, , .		3
76	Low-loss off-axis curved waveguide grating demultiplexer. Optics Letters, 2021, 46, 4821.	3.3	3
77	Integration of vertical grating couplers and microfluidic channels with silicon photonic wire biosensor arrays. , 2010, , .		2
78	High performance multimode interference couplers for coherent communications in silicon. , 2011, , .		2
79	New concepts in silicon component design using subwavelength structures. , 2012, , .		2
80	A general approach for robust integrated polarization rotators. , 2013, , .		2
81	Broadband high-efficiency zero-order surface grating coupler for the near- and mid-infrared wavelength ranges. , 2017, , .		2
82	Ultra-broadband mode (de)multiplexer based on a sub-wavelength engineered MMI coupler. , 2017, , .		2
83	Broadband and high-performance devices for the silicon and silicon-nitride platforms. , 2017, , .		2
84	Silicon Photonic Label Free Biosensors with Coherent Readout. , 2020, , .		2
85	Silicon photonic wire evanescent field sensors: sensor arrays and instrumentation. Proceedings of SPIE, 2011, , .	0.8	1
86	Silicon-on-insulator polarization controller with relaxed fabrication tolerances. , 2014, , .		1
87	High-efficiency fully etched fiber-chip grating couplers with subwavelength structures for datacom and telecom applications. Proceedings of SPIE, 2015, , .	0.8	1
88	Subwavelength metamaterial engineering for silicon photonics. , 2017, , .		1
89	Designing Anisotropy with Waveguide Subwavelength Structures. , 2018, , .		1
90	Silicon and Germanium Suspended Waveguides for the Mid-Infrared. , 2018, , .		1

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91	Suspended Germanium Waveguide for Infrared Wavelengths. , 2019, , .		1
92	High performance silicon photonic devices based on practical metamaterials. , 2019, , .		1
93	Dispersion-engineered nanophotonic devices based on subwavelength metamaterial waveguides. , 2020, , .		1
94	Coherent receivers for demanding applications. , 2016, , .		1
95	Low Limit of Detection Silicon Photonic Sensor with Extremely-Low-Cost Laser Source. , 2020, , .		1
96	Subwavelength-engineered metamaterial devices for integrated photonics. , 2022, , .		1
97	Detecting spurious reflections in integrated photonic devices. , 2009, , .		0
98	Silicon-on-Insulator Tunable Wavelength Router with Minimized Polarization Dependent Loss. , 2010, , .		0
99	Sixport technique for phase measurement of guided optical fields. , 2010, , .		0
100	Subwavelength structures in SOI waveguides. , 2011, , .		0
101	Engineering light at the sub-wavelength scale using silicon photonics. Proceedings of SPIE, 2011, , .	0.8	0
102	Subwavelength and diffractive waveguide structures and their applications in nanophotonics and sensing. Proceedings of SPIE, 2011, , .	0.8	0
103	Diffractive and subwavelength grating couplers for microphotonic waveguides. , 2012, , .		0
104	Grating couplers in thick rib SOI waveguides for TE and TM polarizations. , 2012, , .		0
105	SWG dispersion engineering for ultra-broadband photonic devices. , 2013, , .		0
106	Re-inventing multimode interference couplers using subwavelength gratings. , 2013, , .		0
107	Recent advances in subwavelength engineering in integrated optics. , 2013, , .		0
108	High-efficiency subwavelength-engineered surface grating couplers in SOI and DSOI. , 2014, , .		0

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109	Subwavelength metastructures for dispersion engineering in planar waveguide devices. , 2014, , .		0
110	Integrated planar waveguide devices for evanescent field sensing and spectroscopy. , 2014, , .		0
111	Silicon photonic integration with subwavelength gratings. , 2014, , .		0
112	Sub-wavelength cladding mid-infrared devices. , 2015, , .		0
113	Colorless devices and reception techniques for polarization multiplexed communications. , 2015, , .		0
114	First experimental demonstration of high-directionality fiber-chip grating coupler with interleaved trenches. , 2015, , .		0
115	Subwavelength waveguide structures for optical interconnects. , 2015, , .		0
116	A subwavelength structured multimode interference coupler for the 3-4 micrometers mid-infrared band. Proceedings of SPIE, 2015, , .	0.8	0
117	Integrated polarization controllers. , 2016, , .		0
118	Subwavelength engineered structures for integrated photonics. , 2016, , .		0
119	Silicon-on-insulator integrated tunable polarization controller (Conference Presentation). , 2016, , .		0
120	Subwavelength structures for nanophotonic couplers, colourless splitters, polarization control and mid-infrared waveguides. , 2016, , .		0
121	Subwavelength engineering in silicon photonics. , 2016, , .		0
122	Tunable index back end of line platform for enhanced integrated photonics. , 2017, , .		0
123	Subwavelength nanophotonic structures for integration, sensing and spectroscopy. , 2017, , .		0
124	Recent Advances in Metamaterial Integrated Photonics. , 2019, , .		0
125	Suspended Silicon Integrated Platform for the Long-Wavelength Mid-Infrared Band. , 2019, , .		0
126	Metamaterial engineered C+L band 90Â° hybrid with 150 nm feature size. , 2020, , .		0

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127	Efficient fibre-chip grating coupler for thick SOI rib waveguides. , 2011, , .		0
128	Octave-Spanning Supercontinuum Generation in CMOS-Compatible Silicon Nitride Waveguides. , 2011, , .		0
129	Subwavelength grating metamaterial waveguides for silicon photonic integrated circuits. , 2017, , .		0
130	ARE SPANISH UNIVERSITY STUDENTS READY FOR LECTURES IN ENGLISH?. EDULEARN Proceedings, 2017, , .	0.0	0
131	GAMIFICATION TO FIGHT LACK OF MOTIVATION AND HETEROGENEITY IN ENGINEERING. EDULEARN Proceedings, 2017, , .	0.0	0
132	SOME INGREDIENTS TO IMPROVE GAMIFICATION IN ENGINEERING. , 2018, , .		0
133	Designing polarization management devices by tilting subwavelength grating. , 2019, , .		0
134	Diffractive sidewall grating coupler: towards 2D free-space optics on chip. , 2019, , .		0
135	GAMIFICATION MODELS AND TOOLS ACCORDING TO PROFILES: AN EXPERIENCE IN ENGINEERING DEGREES. , 2019, , .		0
136	Building high-performance integrated optical devices using subwavelength grating metamaterials -INVITED. EPJ Web of Conferences, 2021, 255, 01001.	0.3	0
137	A broadband polarization splitter directional coupler based on tilted subwavelengh grating metamaterials. , 2020, , .		0
138	Bricked patterning: a new concept to enhance the capabilities of subwavelength grating waveguides. , 2021, , .		0