

Michael Hochberg

List of Publications by Year in descending order

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61984

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94
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139
all docs

139
docs citations

139
times ranked

6881
citing authors

#	ARTICLE	IF	CITATIONS
1	Deep learning with coherent nanophotonic circuits. Nature Photonics, 2017, 11, 441-446.	31.4	1,845
2	Label-Free Biosensor Arrays Based on Silicon Ring Resonators and High-Speed Optical Scanning Instrumentation. IEEE Journal of Selected Topics in Quantum Electronics, 2010, 16, 654-661.	2.9	472
3	Quantum transport simulations in a programmable nanophotonic processor. Nature Photonics, 2017, 11, 447-452.	31.4	359
4	Towards fabless silicon photonics. Nature Photonics, 2010, 4, 492-494.	31.4	336
5	A compact and low loss Y-junction for submicron silicon waveguide. Optics Express, 2013, 21, 1310.	3.4	302
6	Terahertz all-optical modulation in a silicon-polymer hybrid system. Nature Materials, 2006, 5, 703-709.	27.5	276
7	Efficient, compact and low loss thermo-optic phase shifter in silicon. Optics Express, 2014, 22, 10487.	3.4	272
8	Low power 50 Gb/s silicon traveling wave Mach-Zehnder modulator near 1300 nm. Optics Express, 2013, 21, 30350.	3.4	246
9	Linear programmable nanophotonic processors. Optica, 2018, 5, 1623.	9.3	240
10	Silicon-on-sapphire integrated waveguides for the mid-infrared. Optics Express, 2010, 18, 12127.	3.4	217
11	Ultralow drive voltage silicon traveling-wave modulator. Optics Express, 2012, 20, 12014.	3.4	204
12	Nonlinear polymer-clad silicon slot waveguide modulator with a half wave voltage of 0.25V. Applied Physics Letters, 2008, 92, 163303.	3.3	195
13	Ultralow loss single layer submicron silicon waveguide crossing for SOI optical interconnect. Optics Express, 2013, 21, 29374.	3.4	190
14	High-Q optical resonators in silicon-on-insulator-based slot waveguides. Applied Physics Letters, 2005, 86, 081101.	3.3	186
15	Myths and rumours of silicon photonics. Nature Photonics, 2012, 6, 206-208.	31.4	173
16	Towards a millivolt optical modulator with nano-slot waveguides. Optics Express, 2007, 15, 8401.	3.4	129
17	Liquid-crystal electric tuning of a photonic crystal laser. Applied Physics Letters, 2004, 85, 360-362.	3.3	123
18	Germanium photodetector with 60 GHz bandwidth using inductive gain peaking. Optics Express, 2013, 21, 28387.	3.4	121

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19	Silicon-polymer hybrid slot waveguide ring-resonator modulator. <i>Optics Express</i> , 2011, 19, 3952.	3.4	114
20	Electron beam lithography writing strategies for low loss, high confinement silicon optical waveguides. <i>Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics</i> , 2011, 29, .	1.2	114
21	Large-scale quantum photonic circuits in silicon. <i>Nanophotonics</i> , 2016, 5, 456-468.	6.0	109
22	Silicon Photonics: The Next Fabless Semiconductor Industry. <i>IEEE Solid-State Circuits Magazine</i> , 2013, 5, 48-58.	0.4	105
23	Silicon waveguides and ring resonators at 5.5 μ m. <i>Applied Physics Letters</i> , 2010, 97, .	3.3	102
24	Integrated Source of Spectrally Filtered Correlated Photons for Large-Scale Quantum Photonic Systems. <i>Physical Review X</i> , 2014, 4, .	8.9	100
25	Widely-tunable, narrow-linewidth III-V/silicon hybrid external-cavity laser for coherent communication. <i>Optics Express</i> , 2018, 26, 7920.	3.4	93
26	A compact bi-wavelength polarization splitting grating coupler fabricated in a 220 nm SOI platform. <i>Optics Express</i> , 2013, 21, 31019.	3.4	91
27	A 25 Gb/s, 4.4 V-Swing, AC-Coupled Ring Modulator-Based WDM Transmitter with Wavelength Stabilization in 65 nm CMOS. <i>IEEE Journal of Solid-State Circuits</i> , 2015, 50, 3145-3159.	5.4	80
28	Multiplexed inkjet functionalization of silicon photonic biosensors. <i>Lab on A Chip</i> , 2011, 11, 1372.	6.0	75
29	Highly linear silicon traveling wave Mach-Zehnder carrier depletion modulator based on differential drive. <i>Optics Express</i> , 2013, 21, 3818.	3.4	75
30	CMOS-compatible highly efficient polarization splitter and rotator based on a double-etched directional coupler. <i>Optics Express</i> , 2014, 22, 2489.	3.4	74
31	Accelerating recurrent Ising machines in photonic integrated circuits. <i>Optica</i> , 2020, 7, 551.	9.3	70
32	A high-responsivity photodetector absent metal-germanium direct contact. <i>Optics Express</i> , 2014, 22, 11367.	3.4	69
33	Design and characterization of a 30-GHz bandwidth low-power silicon traveling-wave modulator. <i>Optics Communications</i> , 2014, 321, 124-133.	2.1	69
34	High-Q ring resonators in thin silicon-on-insulator. <i>Applied Physics Letters</i> , 2004, 85, 3346-3347.	3.3	65
35	Low-loss strip-loaded slot waveguides in Silicon-on-Insulator. <i>Optics Express</i> , 2010, 18, 25061.	3.4	64
36	High-Speed Silicon Modulator With Slow-Wave Electrodes and Fully Independent Differential Drive. <i>Journal of Lightwave Technology</i> , 2014, 32, 2240-2247.	4.6	63

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37	Design of transmission line driven slot waveguideâ€™Mach-Zehnder interferometers â€™and application to analog optical links. Optics Express, 2010, 18, 16902.	3.4	60
38	Linearity of silicon ring modulators for analog optical links. Optics Express, 2012, 20, 13115.	3.4	60
39	Ultracompact silicon-on-insulator polarization rotator for polarization-diversified circuits. Optics Letters, 2014, 39, 4703.	3.3	56
40	Variational quantum unsampling on a quantum photonic processor. Nature Physics, 2020, 16, 322-327.	16.7	52
41	A CMOS-Compatible, Low-Loss, and Low-Crosstalk Silicon Waveguide Crossing. IEEE Photonics Technology Letters, 2013, 25, 422-425.	2.5	51
42	A High-Efficiency Nonuniform Grating Coupler Realized With 248-nm Optical Lithography. IEEE Photonics Technology Letters, 2013, 25, 1358-1361.	2.5	45
43	Zwitterionic polymer-modified silicon microring resonators for label-free biosensing in undiluted human plasma. Biosensors and Bioelectronics, 2013, 42, 100-105.	10.1	44
44	A single adiabatic microring-based laser in 220 nm silicon-on-insulator. Optics Express, 2014, 22, 1172.	3.4	43
45	A Hybrid Electrooptic Microring Resonator-Based 1 imes 4 imes 1\$ ROADM for Wafer Scale Optical Interconnects. Journal of Lightwave Technology, 2009, 27, 440-448.	4.6	42
46	Sub-Volt Silicon-Organic Electro-optic Modulator With 500 MHz Bandwidth. Journal of Lightwave Technology, 2011, 29, 1112-1117.	4.6	42
47	Phase coherence length in silicon photonic platform. Optics Express, 2015, 23, 16890.	3.4	42
48	Compact and low loss 90Â° optical hybrid on a silicon-on-insulator platform. Optics Express, 2017, 25, 28957.	3.4	42
49	Photolithographically fabricated low-loss asymmetric silicon slot waveguides. Optics Express, 2011, 19, 10950.	3.4	41
50	Design and fabrication of segmented, slotted waveguides for electro-optic modulation. Applied Physics Letters, 2007, 91, .	3.3	40
51	Low-loss asymmetric strip-loaded slot waveguides in silicon-on-insulator. Applied Physics Letters, 2011, 98, .	3.3	40
52	Energy correlations of photon pairs generated by a silicon microring resonator probed by Stimulated Four Wave Mixing. Scientific Reports, 2016, 6, 23564.	3.3	37
53	High quality factors and room-temperature lasing in a modified single-defect photonic crystal cavity. Optics Letters, 2004, 29, 721.	3.3	36
54	Bandwidth enhancement of waveguide-coupled photodetectors with inductive gain peaking. Optics Express, 2012, 20, 7101.	3.4	36

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55	Modular architecture for fully non-blocking silicon photonic switch fabric. <i>Microsystems and Nanoengineering</i> , 2017, 3, 16071.	7.0	35
56	Broadband on-chip optical non-reciprocity using phase modulators. <i>Optics Express</i> , 2013, 21, 14500.	3.4	34
57	A Compact Low-Power 320-Gb/s WDM Transmitter Based on Silicon Microrings. <i>IEEE Photonics Journal</i> , 2014, 6, 1-8.	2.0	32
58	Single Microring-Based 2×2 Silicon Photonic Crossbar Switches. <i>IEEE Photonics Technology Letters</i> , 2015, 27, 1981-1984.	2.5	31
59	Progress in silicon platforms for integrated optics. <i>Nanophotonics</i> , 2014, 3, 205-214.	6.0	30
60	Nanogap quantum dot photodetectors with high sensitivity and bandwidth. <i>Applied Physics Letters</i> , 2010, 96, .	3.3	29
61	Ultrathin Silicon-on-Insulator Grating Couplers. <i>IEEE Photonics Technology Letters</i> , 2012, 24, 2247-2249.	2.5	28
62	High-Quality Blends of Anionic Polymethine Salts and Polycarbonate with Enhanced Third-Order Nonlinearities for Silicon-Organic Hybrid Devices. <i>Advanced Materials</i> , 2012, 24, OP326-30.	21.0	28
63	Efficient Poling of Electro-Optic Polymers in Thin Films and Silicon Slot Waveguides by Detachable Pyroelectric Crystals. <i>Advanced Materials</i> , 2012, 24, OP42-7.	21.0	28
64	Sagnac loop mirror and micro-ring based laser cavity for silicon-on-insulator. <i>Optics Express</i> , 2014, 22, 17872.	3.4	26
65	High-Efficiency Low-Crosstalk 1310-nm Polarization Splitter and Rotator. <i>IEEE Photonics Technology Letters</i> , 2014, 26, 925-928.	2.5	25
66	Segmented waveguides in thin silicon-on-insulator. <i>Journal of the Optical Society of America B: Optical Physics</i> , 2005, 22, 1493.	2.1	23
67	Optical detection of target molecule induced aggregation of nanoparticles by means of high-Q resonators. <i>Optics Express</i> , 2011, 19, 7034.	3.4	23
68	Ultra-compact 320 Gb/s and 160 Gb/s WDM transmitters based on silicon microrings. , 2014, , .		23
69	Symmetrical polarization splitter/rotator design and application in a polarization insensitive WDM receiver. <i>Optics Express</i> , 2015, 23, 16052.	3.4	23
70	Programmable dispersion on a photonic integrated circuit for classical and quantum applications. <i>Optics Express</i> , 2017, 25, 21275.	3.4	23
71	Silicon microring modulator for 40 Gb/s NRZ-OOK metro networks in O-band. <i>Optics Express</i> , 2014, 22, 28284.	3.4	22
72	Experimental demonstration of broadband Lorentz non-reciprocity in an integrable photonic architecture based on Mach-Zehnder modulators. <i>Optics Express</i> , 2014, 22, 17409.	3.4	22

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73	Efficient Strip to Strip-Loaded Slot Mode Converter in Silicon-on-Insulator. IEEE Photonics Technology Letters, 2011, 23, 1496-1498.	2.5	21
74	Lithography simulation for the fabrication of silicon photonic devices with deep-ultraviolet lithography. , 2012, , .		19
75	Ultra-Responsive Phase Shifters for Depletion Mode Silicon Modulators. Journal of Lightwave Technology, 2013, 31, 3787-3793.	4.6	19
76	Ultra-thin silicon-on-insulator strip waveguides and mode couplers. Applied Physics Letters, 2012, 101, .	3.3	18
77	Scalable feedback control of single photon sources for photonic quantum technologies. Optica, 2019, 6, 335.	9.3	18
78	Silicon Mod-MUX-Ring transmitter with 4 channels at 40 Gb/s. Optics Express, 2014, 22, 16431.	3.4	17
79	High efficiency germanium-assisted grating coupler. Optics Express, 2014, 22, 30607.	3.4	16
80	A Low-Power Hybrid-Integrated 40-Gb/s Optical Receiver in Silicon. IEEE Transactions on Microwave Theory and Techniques, 2018, 66, 589-595.	4.6	15
81	A CMOS-compatible silicon photonic platform for high-speed integrated opto-electronics. Proceedings of SPIE, 2013, , .	0.8	14
82	Design and optimization of a novel silicon-on-insulator wavelength diplexer. Optics Express, 2014, 22, 21521.	3.4	14
83	High-Efficiency Grating Couplers Near 1310 nm Fabricated by 248-nm DUV Lithography. IEEE Photonics Technology Letters, 2014, 26, 1569-1572.	2.5	14
84	A 10-Gb/s Silicon Microring Resonator-Based BPSK Link. IEEE Photonics Technology Letters, 2014, 26, 1805-1808.	2.5	13
85	A Silicon Platform for High-Speed Photonics Systems. , 2012, , .		12
86	A 30 GHz silicon photonic platform. , 2013, , .		12
87	A 30 GHz silicon photonic platform. , 2013, , .		12
88	Design methodologies for silicon photonic integrated circuits. Proceedings of SPIE, 2014, , .	0.8	12
89	Quantum dot SOA/silicon external cavity multi-wavelength laser. Optics Express, 2015, 23, 4666.	3.4	12
90	Next-Generation Silicon Photonic Interconnect Solutions. , 2019, , .		12

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91	A Reconfigurable and Redundant Optically-Connected Memory System using a Silicon Photonic Switch. , 2014, , .		11
92	Slot machine. Nature Photonics, 2009, 3, 193-194.	31.4	10
93	Silicon Parallel Single Mode 48 Å– 50 Gb/s Modulator and Photodetector Array. Journal of Lightwave Technology, 2014, 32, 4370-4377.	4.6	10
94	A Silicon Photonic Transceiver and Hybrid Tunable Laser for 64 Gbaud Coherent Communication. , 2018, , .		10
95	Programmable Wavelength Locking and Routing in a Silicon-Photonic Interconnection Network Implementation. , 2015, , .		9
96	Reuse Distance Based Circuit Replacement in Silicon Photonic Interconnection Networks for HPC. , 2014, , .		8
97	Theoretical Study of Optical Rectification at Radio Frequencies in a Slot Waveguide. IEEE Journal of Quantum Electronics, 2010, 46, 1634-1641.	1.9	7
98	A 40-GHz bandwidth transimpedance amplifier with adjustable gain-peaking in 65-nm CMOS. , 2014, , .		7
99	Quantum dot semiconductor optical amplifier/silicon external cavity laser for O-band high-speed optical communications. Optical Engineering, 2015, 54, 026102.	1.0	7
100	High-Speed BPSK Modulation in Silicon. IEEE Photonics Technology Letters, 2015, 27, 1329-1332.	2.5	7
101	Silicon multi-project wafer platforms for optoelectronic system integration. , 2012, , .		6
102	A low-power 40 Gb/s optical receiver in silicon. , 2015, , .		6
103	Complexity Scaling in Silicon Photonics. , 2017, , .		6
104	Electrically tunable resonant filters in phase-shifted contra-directional couplers. , 2012, , .		5
105	A 92 mW, 20 dB gain, broadband lumped SiGe amplifier with bandwidth exceeding 67 GHz. , 2013, , .		5
106	All-Optical Modulation in a Silicon Waveguide Based on a Single-Photon Process. IEEE Journal of Selected Topics in Quantum Electronics, 2008, 14, 1335-1342.	2.9	4
107	A high-speed silicon photonics platform. , 2011, , .		4
108	Electro-Optical Materials: Efficient Poling of Electro-Optic Polymers in Thin Films and Silicon Slot Waveguides by Detachable Pyroelectric Crystals (Adv. Mater. 10/2012). Advanced Materials, 2012, 24, OP1.	21.0	4

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109	Photolithographic fabrication of slot waveguides. Proceedings of SPIE, 2011, , .	0.8	3
110	Shared shuttles for integrated silicon optoelectronics. , 2012, , .		3
111	Scalability of silicon photonic enabled optically connected memory. , 2014, , .		3
112	100-Gb/s NRZ optical transceiver analog front-end in 130-nm SiGe BiCMOS. , 2014, , .		3
113	A compact and low-loss silicon waveguide crossing for O-band optical interconnect. , 2014, , .		3
114	An all-silicon transmitter with co-designed modulator and DC-coupled driver. , 2019, , .		3
115	50 Gb/s Silicon Traveling Wave Mach-Zehnder Modulator near 1300 nm. , 2014, , .		2
116	Monolithically Integrated MESFET Devices on a High-Speed Silicon Photonics Platform. Journal of Lightwave Technology, 2014, 32, 4345-4348.	4.6	2
117	Silicon microring based modulator and filter for high speed transmitters at 1310 nm. , 2014, , .		2
118	Silicon waveguides and ring resonators at 5.5 μm . , 2010, , .		1
119	A low V_{π} modulator with GHz bandwidth based on an electro-optic polymer-clad silicon slot waveguide. , 2010, , .		1
120	Full-wafer loss measurements of silicon ridge waveguides. , 2011, , .		1
121	Towards a low-loss, ultra-low drive voltage silicon-polymer hybrid electro-optic modulator. , 2011, , .		1
122	Asymmetric strip-loaded slot waveguides and its applications in silicon-polymer hybrid electro-optic modulators. , 2011, , .		1
123	Mid-infrared photonics in silicon. Proceedings of SPIE, 2011, , .	0.8	1
124	A 30 GHz silicon photonic platform: Multi-project wafer shuttles for next-generation optical systems. , 2013, , .		1
125	30GHz silicon platform for photonics system. , 2013, , .		1
126	High-speed silicon modulators with slow-wave electrodes. , 2014, , .		1

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127	Polarization-insensitive 40Gb/s 4-WDM channels receiver on SOI platform. , 2015, , .		1
128	Nonlinear characterization of a silicon integrated Bragg waveguide filter. Optics Letters, 2018, 43, 1171.	3.3	1
129	Programmable Nanophotonics for Quantum Simulation and Machine Learning. , 2017, , .		1
130	Variational Quantum Unsampling on a Programmable Nanophotonic Processor. , 2019, , .		1
131	Integrated Photonics for Counterfactual Communication. , 2019, , .		1
132	Design of high-speed ultra-low V∞π</math> slot waveguide modulators. , 2010, , .		0
133	A 25 Gb/s 400 fJ/bit silicon traveling-wave modulator. , 2012, , .		0
134	Single-chip photonic integration with CMOS for aerospace. , 2012, , .		0
135	Sagnac loop mirror based laser cavity for silicon-on-insulator. , 2014, , .		0
136	40-Gb/s silicon modulators for mid-reach applications at 1550 nm. , 2014, , .		0
137	Optimized silicon photonic components for high-performance interconnect systems. , 2015, , .		0
138	High-speed BPSK modulation using a silicon modulator. , 2015, , .		0
139	Tunable-Coupling Resonator Arrays for Chip-Based Quantum Enigma Machines. , 2016, , .		0