

# Andrea Ivano Melloni

## List of Publications by Year in descending order

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174  
papers

4,937  
citations

126907

33  
h-index

95266

68  
g-index

177  
all docs

177  
docs citations

177  
times ranked

4084  
citing authors

#	ARTICLE	IF	CITATIONS
1	What is " and what is not " an optical isolator. Nature Photonics, 2013, 7, 579-582.	31.4	712
2	Programmable photonic circuits. Nature, 2020, 586, 207-216.	27.8	598
3	An introduction to InP-based generic integration technology. Semiconductor Science and Technology, 2014, 29, 083001.	2.0	422
4	Linear and nonlinear pulse propagation in coupled resonator slow-wave optical structures. Optical and Quantum Electronics, 2003, 35, 365-379.	3.3	172
5	Unscrambling light" automatically undoing strong mixing between modes. Light: Science and Applications, 2017, 6, e17110-e17110.	16.6	149
6	Roughness Induced Backscattering in Optical Silicon Waveguides. Physical Review Letters, 2010, 104, 033902.	7.8	142
7	Non-Invasive On-Chip Light Observation by Contactless Waveguide Conductivity Monitoring. IEEE Journal of Selected Topics in Quantum Electronics, 2014, 20, 292-301.	2.9	122
8	Comment on "Nonreciprocal Light Propagation in a Silicon Photonic Circuit". Science, 2012, 335, 38-38.	12.6	114
9	Continuously tunable 1 byte delay in coupled-resonator optical waveguides. Optics Letters, 2008, 33, 2389.	3.3	109
10	Ring-resonator filters in silicon oxynitride technology for dense wavelength-division multiplexing systems. Optics Letters, 2003, 28, 1567.	3.3	105
11	Tunable silicon photonics directional coupler driven by a transverse temperature gradient. Optics Letters, 2013, 38, 863.	3.3	103
12	Non-invasive monitoring and control in silicon photonics using CMOS integrated electronics. Optica, 2014, 1, 129.	9.3	100
13	Travelling-wave resonant four-wave mixing breaks the limits of cavity-enhanced all-optical wavelength conversion. Nature Communications, 2011, 2, 296.	12.8	96
14	Integrated chalcogenide waveguide resonators for mid-IR sensing: leveraging material properties to meet fabrication challenges. Optics Express, 2010, 18, 26728.	3.4	91
15	Box-Shaped Dielectric Waveguides: A New Concept in Integrated Optics?. Journal of Lightwave Technology, 2007, 25, 2579-2589.	4.6	89
16	Error-free continuously-tunable delay at 10 Gbit/s in a reconfigurable on-chip delay-line. Optics Express, 2008, 16, 8395.	3.4	88
17	Canceling Thermal Cross-Talk Effects in Photonic Integrated Circuits. Journal of Lightwave Technology, 2019, 37, 1325-1332.	4.6	75
18	Real photonic waveguides: guiding light through imperfections. Advances in Optics and Photonics, 2014, 6, 156.	25.5	72

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19	Polarization conversion in ring resonator phase shifters. Optics Letters, 2004, 29, 2785.	3.3	57
20	Reconfigurable photonic integrated mode (de)multiplexer for SDM fiber transmission. Optics Express, 2016, 24, 12625.	3.4	57
21	Optical Slow Wave Structures. Optics and Photonics News, 2003, 14, 44.	0.5	56
22	Photo-induced trimming of chalcogenide-assisted silicon waveguides. Optics Express, 2012, 20, 15807.	3.4	56
23	Photonic Integrated Filter With Widely Tunable Bandwidth. Journal of Lightwave Technology, 2014, 32, 897-907.	4.6	50
24	Design of curved waveguides: the matched bend. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2003, 20, 130.	1.5	45
25	Four-wave mixing and wavelength conversion in coupled-resonator optical waveguides. Journal of the Optical Society of America B: Optical Physics, 2008, 25, C87.	2.1	45
26	Automated Routing and Control of Silicon Photonic Switch Fabrics. IEEE Journal of Selected Topics in Quantum Electronics, 2016, 22, 169-176.	2.9	45
27	Uncertainty quantification of silicon photonic devices with correlated and non-Gaussian random parameters. Optics Express, 2015, 23, 4242.	3.4	42
28	Photo-induced trimming of coupled ring-resonator filters and delay lines in As <sub>2</sub> S <sub>3</sub> chalcogenide glass. Optics Letters, 2011, 36, 4002.	3.3	41
29	Disorder in coupled-resonator optical waveguides. Journal of the Optical Society of America B: Optical Physics, 2009, 26, 858.	2.1	40
30	Reconfigurable silicon filter with continuous bandwidth tunability. Optics Letters, 2012, 37, 3669.	3.3	40
31	Resonant cavity-enhanced photosensitivity in As <sub>2</sub> S <sub>3</sub> chalcogenide glass at 1550 nm telecommunication wavelength. Optics Letters, 2010, 35, 874.	3.3	38
32	Post-fabrication trimming of athermal silicon waveguides. Optics Letters, 2013, 38, 5450.	3.3	34
33	Integrated all-optical MIMO demultiplexer for mode- and wavelength-division-multiplexed transmission. Optics Letters, 2017, 42, 342.	3.3	34
34	Control and Calibration Recipes for Photonic Integrated Circuits. IEEE Journal of Selected Topics in Quantum Electronics, 2020, 26, 1-10.	2.9	34
35	Validation of the Building-Block-Based Approach for the Design of Photonic Integrated Circuits. Journal of Lightwave Technology, 2012, 30, 3610-3616.	4.6	31
36	Equivalent circuit of Bragg gratings and its application to Fabry-Pérot cavities. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2003, 20, 273.	1.5	29

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37	Stochastic simulation and robust design optimization of integrated photonic filters. <i>Nanophotonics</i> , 2017, 6, 299-308.	6.0	29
38	Statistics of backscattering in optical waveguides. <i>Optics Letters</i> , 2010, 35, 1777.	3.3	28
39	Polarization-transparent silicon photonic add-drop multiplexer with wideband hitless tuneability. <i>Nature Communications</i> , 2021, 12, 4324.	12.8	28
40	Separating arbitrary free-space beams with an integrated photonic processor. <i>Light: Science and Applications</i> , 2022, 11, .	16.6	26
41	Wideband Integrated Optical Delay Line Based on a Continuously Tunable Mach-Zehnder Interferometer. <i>IEEE Journal of Selected Topics in Quantum Electronics</i> , 2018, 24, 1-8.	2.9	24
42	Metasurface Reconfiguration through Lithium Ion Intercalation in a Transition Metal Oxide. <i>Advanced Optical Materials</i> , 2017, 5, 1600732.	7.3	23
43	Automatic Tuning of Silicon Photonics Microring Filter Array for Hitless Reconfigurable Add-Drop. <i>Journal of Lightwave Technology</i> , 2019, 37, 3939-3947.	4.6	22
44	Self-phase modulation in slow-wave structures: A comparative numerical analysis. <i>Optical and Quantum Electronics</i> , 2007, 38, 761-780.	3.3	20
45	Multimode Interference Couplers With Reduced Parasitic Reflections. <i>IEEE Photonics Technology Letters</i> , 2014, 26, 408-410.	2.5	20
46	Impedance-Sensing CMOS Chip for Noninvasive Light Detection in Integrated Photonics. <i>IEEE Transactions on Circuits and Systems II: Express Briefs</i> , 2016, 63, 929-933.	3.0	20
47	Sensitivity Analysis and Uncertainty Mitigation of Photonic Integrated Circuits. <i>Journal of Lightwave Technology</i> , 2017, 35, 3713-3721.	4.6	20
48	BER Evaluation of a Passive SOI WDM Router. <i>IEEE Photonics Technology Letters</i> , 2013, 25, 2285-2288.	2.5	19
49	Cascaded Mach-Zehnder Architectures for Photonic Integrated Delay Lines. <i>IEEE Photonics Technology Letters</i> , 2018, 30, 1830-1833.	2.5	18
50	Stochastic process design kits for photonic circuits based on polynomial chaos augmented macro-modelling. <i>Optics Express</i> , 2018, 26, 5894.	3.4	18
51	Frequency Characterization of the Nonlinear Refractive Index in Optical Fiber. <i>Fiber and Integrated Optics</i> , 1999, 18, 1-13.	2.5	17
52	Gamma radiation effects on silicon photonic waveguides. <i>Optics Letters</i> , 2016, 41, 3053.	3.3	17
53	Optical radiative crosstalk in integrated photonic waveguides. <i>Optics Letters</i> , 2014, 39, 3982.	3.3	15
54	Fundamental limits on the losses of phase and amplitude optical actuators. <i>Laser and Photonics Reviews</i> , 2015, 9, 666-673.	8.7	15

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55	Non-Invasive Monitoring of Mode-Division Multiplexed Channels on a Silicon Photonic Chip. Journal of Lightwave Technology, 2015, 33, 1197-1201.	4.6	15
56	Fiber-to-Waveguide Alignment Assisted by a Transparent Integrated Light Monitor. IEEE Photonics Technology Letters, 2015, 27, 510-513.	2.5	15
57	Design Guidelines for Contactless Integrated Photonic Probes in Dense Photonic Circuits. Journal of Lightwave Technology, 2017, 35, 3042-3049.	4.6	15
58	WDM-Based Silicon Photonic Multi-Socket Interconnect Architecture With Automated Wavelength and Thermal Drift Compensation. Journal of Lightwave Technology, 2020, 38, 6000-6006.	4.6	15
59	Coherent self-control of free-space optical beams with integrated silicon photonic meshes. Photonics Research, 2021, 9, 2196.	7.0	15
60	Alpha Radiation Effects on Silicon Oxynitride Waveguides. ACS Photonics, 2016, 3, 1569-1574.	6.6	14
61	Wavelength and composition dependence of the thermo-optic coefficient for InGaAsP-based integrated waveguides. Journal of Applied Physics, 2016, 120, .	2.5	13
62	Waveguiding Light into Silicon Oxycarbide. Applied Sciences (Switzerland), 2017, 7, 561.	2.5	13
63	High Thermo-Optic Coefficient of Silicon Oxycarbide Photonic Waveguides. ACS Photonics, 2018, 5, 2755-2759.	6.6	13
64	Ditheringâ€based realâ€time control of cascaded silicon photonic devices by means of nonâ€invasive detectors. IET Optoelectronics, 2021, 15, 111-120.	3.3	13
65	High-Sensitivity In-Band OSNR Monitoring System Integrated on a Silicon Photonics Chip. IEEE Photonics Technology Letters, 2013, 25, 1939-1942.	2.5	12
66	4-Channel All-Optical MIMO Demultiplexing on a Silicon Chip. , 2016, , .		12
67	Towards ultra-subwavelength optical latches. Applied Physics Letters, 2013, 103, .	3.3	11
68	Waveguide-Based Technique for Wafer-Level Measurement of Phase and Group Effective Refractive Indices. Journal of Lightwave Technology, 2016, 34, 1293-1299.	4.6	11
69	Dual-Mode Coupled-Resonator Integrated Optical Filters. IEEE Photonics Technology Letters, 2014, 26, 929-932.	2.5	10
70	ContactLess Integrated Photonic Probe for light monitoring in indium phosphideâ€based devices. IET Optoelectronics, 2015, 9, 146-150.	3.3	10
71	Wavelength Locking of Silicon Photonics Multiplexer for DML-Based WDM Transmitter. Journal of Lightwave Technology, 2017, 35, 607-614.	4.6	10
72	Direct Observation of Subluminal and Superluminal Velocity Swinging in Coupled Mode Optical Propagation. Physical Review Letters, 2007, 98, .	7.8	9

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73	Slow pulses in disordered photonic-crystal waveguides. <i>Applied Optics</i> , 2011, 50, G113.	2.1	9
74	Variable carrier reduction in radio-over-fiber systems for increased modulation efficiency using a Si <sub>3</sub> N <sub>4</sub> tunable extinction ratio ring resonator. <i>Optics Express</i> , 2012, 20, 25478.	3.4	9
75	Synthesis, Characterization and Optical Constants of Silicon Oxycarbide. <i>EPJ Web of Conferences</i> , 2017, 139, 00002.	0.3	9
76	Differential Impedance Sensing platform for high selectivity antibody detection down to few counts: A case study on Dengue Virus. <i>Biosensors and Bioelectronics</i> , 2022, 202, 113996.	10.1	9
77	Amorphous-silicon visible-light detector integrated on silicon nitride waveguides. <i>Optics Letters</i> , 2022, 47, 2598.	3.3	8
78	Penalty-free transmission in a silicon coupled resonator optical waveguide over the full C-band. <i>Optics Letters</i> , 2011, 36, 3948.	3.3	7
79	Efficient Variability Analysis of Photonic Circuits by Stochastic Parametric Building Blocks. <i>IEEE Journal of Selected Topics in Quantum Electronics</i> , 2020, 26, 1-8.	2.9	7
80	Design of a hybrid silicon-plasmonic co-propagating coupler operating close to coherent perfect absorption. <i>Journal of Applied Physics</i> , 2016, 119, .	2.5	6
81	Experimental confirmation of matched bends. <i>Optics Letters</i> , 2004, 29, 465.	3.3	5
82	The long march of slow photonics. <i>Nature Photonics</i> , 2009, 3, 119-119.	31.4	5
83	Differential Polarization Delay in Coupled-Resonator Optical Waveguides. <i>IEEE Photonics Technology Letters</i> , 2009, 21, 1541-1543.	2.5	5
84	Manipulating Free-space Optical Beams with a Silicon Photonic Mesh. , 2019, , .		5
85	Silicon Oxycarbide Platform for Integrated Photonics. <i>Journal of Lightwave Technology</i> , 2020, 38, 784-791.	4.6	5
86	Genetic algorithm and polynomial chaos modelling for performance optimization of photonic circuits under manufacturing variability. , 2018, , .		5
87	Automatic Tuning of Microring-Based Hitless Reconfigurable Add-Drop Filters. , 2018, , .		5
88	Trimming of Athermal Silicon Resonators. , 2012, , .		5
89	Statistical Process Design Kits: analysis of fabrication tolerances in integrated photonic circuits. , 2015, , .		5
90	Room-temperature deposition of ZnS antireflection coatings for MIR-LWIR applications. <i>Optical Materials Express</i> , 2022, 12, 272.	3.0	5

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91	Backscatter in integrated optical waveguides and circuits. , 2009, , .		4
92	An improved model to predict thermo-optic coefficient in InGaAsP waveguides. , 2016, , .		4
93	FSR-free filter with hitless tunability across C+L telecom band. , 2020, , .		4
94	Electrical conductance of silicon photonic waveguides. Optics Letters, 2021, 46, 17.	3.3	4
95	High-sensitivity transparent photoconductors in voltage-controlled silicon waveguides. Optics Letters, 2022, 47, 1327.	3.3	4
96	Phase noise insensitive measurements of the nonlinear refractive index in fiber links. Optics Communications, 1999, 162, 333-339.	2.1	3
97	Experimental investigation of ring-resonators in SiON technology. AIP Conference Proceedings, 2004, , .	0.4	3
98	Understanding the rich physics of light propagation in slow photonic crystal waveguides. , 2010, , .		3
99	On-chip continuously tunable optical delay line based on cascaded Mach-Zehnder interferometers. , 2018, , .		3
100	Wavelength Locking Platform for DML-based Multichannel Transmitter on a Silicon Chip. , 2016, , .		3
101	The ring-based optical Resonant Router. , 2006, , .		2
102	Optical coherence pulsed interferometry: shaping probe pulses in time-domain interferometry. Optics Letters, 2008, 33, 1123.	3.3	2
103	Full characterization of integrated optical ring-resonators by phase-sensitive time-domain interferometry. , 2008, , .		2
104	Tunable silicon CROW delay lines. , 2010, , .		2
105	Building block based design of photonic integrated circuits for generic photonic foundries. , 2012, , .		2
106	Nonlinearities in silicon photonics: something to exploit or to counteract?. , 2012, , .		2
107	Modulation depth enhancement in radio-over-fiber systems using a Si<math>\times</math>3</math>/N<math>\times</math>4</math> ring resonator notch filter for optical carrier reduction. , 2012, , .		2
108	Modeling reflections induced by waveguide transitions. Optical and Quantum Electronics, 2013, 45, 309-316.	3.3	2

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109	Compact Tunable Directional Couplers in SOI. , 2013, , .		2
110	On-Chip OSNR Monitoring With Silicon Photonics Transparent Detector. IEEE Photonics Technology Letters, 2017, 29, 2155-2158.	2.5	2
111	ContactLess Integrated Photonic Probe: Concept, Technology and Applications. , 2016, , .		2
112	Stochastic simulation and sensitivity analysis of photonic circuit through Morris and Sobol method. , 2017, , .		2
113	A polynomial-chaos-expansion-based building block approach for stochastic analysis of photonic circuits. , 2018, , .		2
114	Solitons in fibers with lumped amplifiers. Optics Communications, 1998, 147, 180-186.	2.1	1
115	Wavelength Routing by a Matrix of Ring Resonators. AIP Conference Proceedings, 2004, , .	0.4	1
116	Statistical design in integrated optics. , 2009, , .		1
117	Precise fabrication of coupled ring-resonator structures. , 2009, , .		1
118	Impedance-based Transparent Monitoring of Light for Local Control of Integrated Photonic Circuits. Procedia Engineering, 2014, 87, 1545-1548.	1.2	1
119	Hitless Monitoring of Wavelength and Mode-Division Multiplexed Channels on a Silicon Photonic Chip. , 2015, , .		1
120	Characterization of low index Si waveguides. , 2016, , .		1
121	Experimental analysis of silicon oxycarbide thin films and waveguides. , 2017, , .		1
122	Noninvasive monitoring and control in silicon photonics. , 2017, , .		1
123	An Improved Model to Predict the Temperature Dependence of Refractive Index of InP-based Compounds. Wireless Personal Communications, 2017, 95, 607-615.	2.7	1
124	Integrated all-optical MIMO demultiplexer for 8-channel MDM-WDM transmission. , 2017, , .		1
125	Stochastic photonics: Tools and approaches for the analysis and optimization of integrated circuits. , 2017, , .		1
126	Wideband continuously tunable integrated delay line based on cascaded Mach-Zehnder. , 2018, , .		1



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127	Reconfigurable FSR-free microring resonator filter with wide hitless tunability. , 2021, , .		1
128	Dynamic mitigation of nonlinear effects in a silicon photonic add-drop filter. Optics Letters, 2021, 46, 5023.	3.3	1
129	Processing Light in Reconfigurable Directly Coupled Ring Resonators. Springer Series in Optical Sciences, 2010, , 181-203.	0.7	1
130	Integrated photonic devices with silicon oxycarbide. , 2018, , .		1
131	Reconfigurable photonic signal processing circuits. , 2017, , .		1
132	Performance robustness analysis in machine-assisted design of photonic devices. , 2019, , .		1
133	Compact amorphous-silicon visible-light monitor integrated in silicon nitride waveguides. , 2021, , .		1
134	Self-Configuring Silicon-Photonic Receiver for Multimode Free Space Channels. , 2021, , .		1
135	Self-Stabilized Silicon Mach-Zehnder Interferometers by Integrated CMOS Controller. , 2021, , .		1
136	Active Opto-Magnetic Biosensing with Silicon Microring Resonators. Sensors, 2022, 22, 3292.	3.8	1
137	Soliton perturbation phenomena in fibers with lumped amplifiers. Optics Communications, 1999, 162, 130-139.	2.1	0
138	Pultruded fiber optic ribbon sensor for applications in severe environments. Optical Engineering, 2000, 39, 3068.	1.0	0
139	Europtics: an international master in optics and photonics. , 2005, 9664, 144.		0
140	A model-based simulator for integrated optical circuits and free space. Proceedings of SPIE, 2005, , .	0.8	0
141	Modelling of Polarization Rotation in Bent Waveguides. , 2006, , .		0
142	2007 Special Section on Modeling of Guided-Wave Photonic Devices. Journal of Lightwave Technology, 2007, 25, 2284-2286.	4.6	0
143	Four Wave Mixing and wavelength conversion in slow light regime. , 2009, , .		0
144	Exploiting photosensitive As<sub>2</sub>S<sub>3</sub> chalcogenide glass in photonic integrated circuits. , 2012, , .		0

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145	High capacity, photo-trimmable athermal silicon waveguides. , 2012, , .		0
146	Photo-induced trimming of chalcogenide-assisted silicon photonic circuits. Proceedings of SPIE, 2012, , .	0.8	0
147	Performance of ring-resonator based optical backplane in high capacity routers. , 2013, , .		0
148	Optical Backplane Based on Ring-Resonators: Scalability and Performance Analysis for 10 Gb/s OOK-NRZ. Photonics, 2014, 1, 131-145.	2.0	0
149	Feedback and control in integrated optics enabled by contactLess integrated photonic probe. Proceedings of SPIE, 2015, , .	0.8	0
150	Multipoint Platform for Control and Routing of Complex Silicon Photonic Circuits with Non-Invasive Probes. , 2016, , .		0
151	4Å–10 Gbit/s L-band WDM transmitter with automatic control of silicon photonic channel multiplexer and carver. , 2016, , .		0
152	Automatic control of the silicon microring OSR and multiplexer in DML-based WDM transmitter for 40G TWDM-PON OLT. , 2016, , .		0
153	Experimental demonstration of integrated photonic free-label biosensor for CBRN threats using micro-ring resonators. , 2016, , .		0
154	A dynamically tunable chiral mirror enabled by electrochromic metasurfaces operating at telecommunication wavelengths. , 2017, , .		0
155	Tuning and locking of integrated optical filters and circuits. , 2017, , .		0
156	Silicon Oxycarbide Waveguides for Photonic Applications. Journal of Physics: Conference Series, 2018, 961, 012014.	0.4	0
157	Uncertainty aware design of photonic integrated circuits in presence of correlated manufacturing uncertainties. AIP Conference Proceedings, 2019, , .	0.4	0
158	Prediction of thermal variation in InP and GaAs material for photonic integrated waveguides. AIP Conference Proceedings, 2019, , .	0.4	0
159	Automatic Tuning and Locking of Hitless Add-Drop Filters. , 2019, , .		0
160	Guest Editorial IQE Special Virtual Issue Dedicated to the 22nd European Conference on Integrated Optics (ECIO). IEEE Journal of Quantum Electronics, 2021, 57, 1-3.	1.9	0
161	Establishing free-space optical communication channels through a reconfigurable silicon mesh. , 2021, , .		0
162	Polarization-transparent FSR-free microring resonator filter with wide hitless tunability. , 2021, , .		0

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163	Point Reflector Optical Waveguides for on-wafer process qualification. , 2014, , .		0
164	4-Channel Silicon Photonic Mode Demultiplexing. , 2016, , .		0
165	Integrated Indium-Phosphide-Based Mode Multiplexer and Demultiplexer for Reconfigurable Mode Division Multiplexing Transmission. , 2016, , .		0
166	Exploiting silicon oxycarbides for integrated photonic applications. , 2018, , .		0
167	Efficient thermal cross-talk effect cancelation in photonic integrated circuits. , 2019, , .		0
168	Active Compensation of Nonlinear Distortions in Silicon Microring Resonator Filters. , 2021, , .		0
169	Active Compensation of Nonlinear Effects in Silicon Photonic Microring Filters. , 2021, , .		0
170	Automated Cloning and Lookup Table Generation for Reconfigurable Photonic Integrated Filters. , 2021, , .		0
171	Automated Lookup Table Generation and Cloning of Tuneable Photonic Integrated Filters. , 2021, , .		0
172	Multimode Free Space Optical Link Enabled by SiP Integrated Meshes. , 2021, , .		0
173	Polarization Transparent Add-Drop Multiplexer with Hitless Tuneability. , 2021, , .		0
174	Temperature and Wavelength Drift Tolerant WDM Transmission and Routing in On-chip Silicon Photonic Interconnects. Optics Express, 0, , .	3.4	0