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	Room-temperature deposition of ZnS antireflection coatings for MIR-LWIR applications. Optical Materials Express, 2022, 12, 272.	3.0	5
2	High-sensitivity transparent photoconductors in voltage-controlled silicon waveguides. Optics Letters, 2022, 47, 1327.	3.3	4
3	Differential Impedance Sensing platform for high selectivity antibody detection down to few counts: A case study on Dengue Virus. Biosensors and Bioelectronics, 2022, 202, 113996.	10.1	9
4	Amorphous-silicon visible-light detector integrated on silicon nitride waveguides. Optics Letters, 2022, 47, 2598.	3.3	8
5	Active Opto-Magnetic Biosensing with Silicon Microring Resonators. Sensors, 2022, 22, 3292.	3.8	1
6	Separating arbitrary free-space beams with an integrated photonic processor. Light: Science and Applications, 2022, 11, .	16.6	26
7	Guest Editorial JQE 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
8	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
9	Establishing free-space optical communication channels through a reconfigurable silicon mesh. , 2021, , .		0
10	Reconfigurable FSR-free microring resonator filter with wide hitless tunability. , 2021, , .		1
11	Polarization-transparent silicon photonic add-drop multiplexer with wideband hitless tuneability. Nature Communications, 2021, 12, 4324.	12.8	28
12	Coherent self-control of free-space optical beams with integrated silicon photonic meshes. Photonics Research, 2021, 9, 2196.	7.0	15
13	Dynamic mitigation of nonlinear effects in a silicon photonic add-drop filter. Optics Letters, 2021, 46, 5023.	3.3	1
14	Polarization-transparent FSR-free microring resonator filter with wide hitless tunability. , 2021, , .		0
15	Electrical conductance of silicon photonic waveguides. Optics Letters, 2021, 46, 17.	3.3	4
16	Active Compensation of Nonlinear Distortions in Silicon Microring Resonator Filters. , 2021, , .		0
17	Active Compensation of Nonlinear Effects in Silicon Photonic Microring Filters. , 2021, , .		0
18	Automated Cloning and Lookup Table Generation for Reconfigurable Photonic Integrated Filters. , 2021, , .		0

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19	Automated Lookup Table Generation and Cloning of Tuneable Photonic Integrated Filters. , 2021, , .		0
20	Multimode Free Space Optical Link Enabled by SiP Integrated Meshes. , 2021, , .		0
21	Polarization Transparent Add-Drop Multiplexer with Hitless Tuneability. , 2021, , .		0
22	Compact amorphous-silicon visible-light monitor integrated in silicon nitride waveguides. , 2021, , .		1
23	Self-Configuring Silicon-Photonic Receiver for Multimode Free Space Channels. , 2021, , .		1
24	Self-Stabilized Silicon Mach-Zehnder Interferometers by Integrated CMOS Controller. , 2021, , .		1
25	Silicon Oxycarbide Platform for Integrated Photonics. Journal of Lightwave Technology, 2020, 38, 784-791.	4.6	5
26	Programmable photonic circuits. Nature, 2020, 586, 207-216.	27.8	598
27	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
28	Control and Calibration Recipes for Photonic Integrated Circuits. IEEE Journal of Selected Topics in Quantum Electronics, 2020, 26, 1-10.	2.9	34
29	Efficient Variability Analysis of Photonic Circuits by Stochastic Parametric Building Blocks. IEEE Journal of Selected Topics in Quantum Electronics, 2020, 26, 1-8.	2.9	7
30	FSR-free filter with hitless tunability across C+L telecom band. , 2020, , .		4
31	Automatic Tuning of Silicon Photonics Microring Filter Array for Hitless Reconfigurable Addâ€“Drop. Journal of Lightwave Technology, 2019, 37, 3939-3947.	4.6	22
32	Uncertainty aware design of photonic integrated circuits in presence of correlated manufacturing uncertainties. AIP Conference Proceedings, 2019, , .	0.4	0
33	Prediction of thermal variation in InP and GaAs material for photonic integrated waveguides. AIP Conference Proceedings, 2019, , .	0.4	0
34	Manipulating Free-space Optical Beams with a Silicon Photonic Mesh. , 2019, , .		5
35	Canceling Thermal Cross-Talk Effects in Photonic Integrated Circuits. Journal of Lightwave Technology, 2019, 37, 1325-1332.	4.6	75
36	Automatic Tuning and Locking of Hitless Add-Drop Filters. , 2019, , .		0

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37	Efficient thermal cross-talk effect cancelation in photonic integrated circuits. , 2019, , .		0
38	Performance robustness analysis in machine-assisted design of photonic devices. , 2019, , .		1
39	Wideband Integrated Optical Delay Line Based on a Continuously Tunable Machâ€“Zehnder Interferometer. IEEE Journal of Selected Topics in Quantum Electronics, 2018, 24, 1-8.	2.9	24
40	Cascaded Machâ€“Zehnder Architectures for Photonic Integrated Delay Lines. IEEE Photonics Technology Letters, 2018, 30, 1830-1833.	2.5	18
41	Wideband continuously tunable integrated delay line based on cascaded Mach-Zehnder. , 2018, , .		1
42	Silicon Oxycarbide Waveguides for Photonic Applications. Journal of Physics: Conference Series, 2018, 961, 012014.	0.4	0
43	Stochastic process design kits for photonic circuits based on polynomial chaos augmented macro-modelling. Optics Express, 2018, 26, 5894.	3.4	18
44	High Thermo-Optic Coefficient of Silicon Oxycarbide Photonic Waveguides. ACS Photonics, 2018, 5, 2755-2759.	6.6	13
45	Integrated photonic devices with silicon oxycarbide. , 2018, , .		1
46	Genetic algorithm and polynomial chaos modelling for performance optimization of photonic circuits under manufacturing variability. , 2018, , .		5
47	On-chip continuously tunable optical delay line based on cascaded Mach-Zehnder interferometers. , 2018, , .		3
48	Automatic Tuning of Microring-Based Hitless Reconfigurable Add-Drop Filters. , 2018, , .		5
49	A polynomial-chaos-expansion-based building block approach for stochastic analysis of photonic circuits. , 2018, , .		2
50	Exploiting silicon oxycarbides for integrated photonic applications. , 2018, , .		0
51	Wavelength Locking of Silicon Photonics Multiplexer for DML-Based WDM Transmitter. Journal of Lightwave Technology, 2017, 35, 607-614.	4.6	10
52	Stochastic simulation and robust design optimization of integrated photonic filters. Nanophotonics, 2017, 6, 299-308.	6.0	29
53	Synthesis, Characterization and Optical Constants of Silicon Oxycarbide. EPJ Web of Conferences, 2017, 139, 00002.	0.3	9
54	Design Guidelines for Contactless Integrated Photonic Probes in Dense Photonic Circuits. Journal of Lightwave Technology, 2017, 35, 3042-3049.	4.6	15

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55	Experimental analysis of silicon oxycarbide thin films and waveguides. , 2017, , .		1
56	Noninvasive monitoring and control in silicon photonics. , 2017, , .		1
57	Sensitivity Analysis and Uncertainty Mitigation of Photonic Integrated Circuits. Journal of Lightwave Technology, 2017, 35, 3713-3721.	4.6	20
58	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
59	Metasurface Reconfiguration through Lithiumâ€ion Intercalation in a Transition Metal Oxide. Advanced Optical Materials, 2017, 5, 1600732.	7.3	23
60	Unscrambling lightâ€”automatically undoing strong mixing between modes. Light: Science and Applications, 2017, 6, e17110-e17110.	16.6	149
61	A dynamically tunable chiral mirror enabled by electrochromic metasurfaces operating at telecommunication wavelengths. , 2017, , .		0
62	Integrated all-optical MIMO demultiplexer for 8-channel MDM-WDM transmission. , 2017, , .		1
63	Tuning and locking of integrated optical filters and circuits. , 2017, , .		0
64	Stocastic photonics: Tools and approaches for the analysis and optimization of integrated circuits. , 2017, , .		1
65	Integrated all-optical MIMO demultiplexer for mode- and wavelength-division-multiplexed transmission. Optics Letters, 2017, 42, 342.	3.3	34
66	Waveguiding Light into Silicon Oxycarbide. Applied Sciences (Switzerland), 2017, 7, 561.	2.5	13
67	On-Chip OSNR Monitoring With Silicon Photonics Transparent Detector. IEEE Photonics Technology Letters, 2017, 29, 2155-2158.	2.5	2
68	Stochastic simulation and sensitivity analysis of photonic circuit through Morris and Sobol method. , 2017, , .		2
69	Reconfigurable photonic signal processing circuits. , 2017, , .		1
70	Multipoint Platform for Control and Routing of Complex Silicon Photonic Circuits with Non-Invasive Probes. , 2016, , .		0
71	4Ã—10 Gbit/s L-band WDM transmitter with automatic control of silicon photonic channel multiplexer and carver. , 2016, , .		0
72	Automatic control of the silicon microring OSR and multiplexer in DML-based WDM transmitter for 40G TWDM-PON OLT. , 2016, , .		0

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73	Characterization of low index Si waveguides. , 2016, , .		1
74	Design of a hybrid silicon-plasmonic co-propagating coupler operating close to coherent perfect absorption. Journal of Applied Physics, 2016, 119, .	2.5	6
75	Wavelength and composition dependence of the thermo-optic coefficient for InGaAsP-based integrated waveguides. Journal of Applied Physics, 2016, 120, .	2.5	13
76	Reconfigurable photonic integrated mode (de)multiplexer for SDM fiber transmission. Optics Express, 2016, 24, 12625.	3.4	57
77	Alpha Radiation Effects on Silicon Oxynitride Waveguides. ACS Photonics, 2016, 3, 1569-1574.	6.6	14
78	Experimental demonstration of integrated photonic free-label biosensor for CBRN threats using micro-ring resonators. , 2016, , .		0
79	Gamma radiation effects on silicon photonic waveguides. Optics Letters, 2016, 41, 3053.	3.3	17
80	An improved model to predict thermo-optic coefficient in InGaAsP waveguides. , 2016, , .		4
81	Automated Routing and Control of Silicon Photonic Switch Fabrics. IEEE Journal of Selected Topics in Quantum Electronics, 2016, 22, 169-176.	2.9	45
82	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
83	Impedance-Sensing CMOS Chip for Noninvasive Light Detection in Integrated Photonics. IEEE Transactions on Circuits and Systems II: Express Briefs, 2016, 63, 929-933.	3.0	20
84	ContactLess Integrated Photonic Probe: Concept, Technology and Applications. , 2016, , .		2
85	4-Channel All-Optical MIMO Demultiplexing on a Silicon Chip. , 2016, , .		12
86	4-Channel Silicon Photonic Mode Demultiplexing. , 2016, , .		0
87	Integrated Indium-Phosphide-Based Mode Multiplexer and Demultiplexer for Reconfigurable Mode Division Multiplexing Transmission. , 2016, , .		0
88	Wavelength Locking Platform for DML-based Multichannel Transmitter on a Silicon Chip. , 2016, , .		3
89	Fundamental limits on the losses of phase and amplitude optical actuators. Laser and Photonics Reviews, 2015, 9, 666-673.	8.7	15
90	Feedback and control in integrated optics enabled by contactLess integrated photonic probe. Proceedings of SPIE, 2015, , .	0.8	0

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91	Non-Invasive Monitoring of Mode-Division Multiplexed Channels on a Silicon Photonic Chip. Journal of Lightwave Technology, 2015, 33, 1197-1201.	4.6	15
92	ContactLess Integrated Photonic Probe for light monitoring in indium phosphideâ€based devices. IET Optoelectronics, 2015, 9, 146-150.	3.3	10
93	Fiber-to-Waveguide Alignment Assisted by a Transparent Integrated Light Monitor. IEEE Photonics Technology Letters, 2015, 27, 510-513.	2.5	15
94	Uncertainty quantification of silicon photonic devices with correlated and non-Gaussian random parameters. Optics Express, 2015, 23, 4242.	3.4	42
95	Hitless Monitoring of Wavelength and Mode-Division Multiplexed Channels on a Silicon Photonic Chip. , 2015, , .		1
96	Statistical Process Design Kits: analysis of fabrication tolerances in integrated photonic circuits. , 2015, , .		5
97	An introduction to InP-based generic integration technology. Semiconductor Science and Technology, 2014, 29, 083001.	2.0	422
98	Non-invasive monitoring and control in silicon photonics using CMOS integrated electronics. Optica, 2014, 1, 129.	9.3	100
99	Optical Backplane Based on Ring-Resonators: Scalability and Performance Analysis for 10 Gb/s OOK-NRZ. Photonics, 2014, 1, 131-145.	2.0	0
100	Photonic Integrated Filter With Widely Tunable Bandwidth. Journal of Lightwave Technology, 2014, 32, 897-907.	4.6	50
101	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
102	Dual-Mode Coupled-Resonator Integrated Optical Filters. IEEE Photonics Technology Letters, 2014, 26, 929-932.	2.5	10
103	Multimode Interference Couplers With Reduced Parasitic Reflections. IEEE Photonics Technology Letters, 2014, 26, 408-410.	2.5	20
104	Real photonic waveguides: guiding light through imperfections. Advances in Optics and Photonics, 2014, 6, 156.	25.5	72
105	Optical radiative crosstalk in integrated photonic waveguides. Optics Letters, 2014, 39, 3982.	3.3	15
106	Impedance-based Transparent Monitoring of Light for Local Control of Integrated Photonic Circuits. Procedia Engineering, 2014, 87, 1545-1548.	1.2	1
107	Point Reflector Optical Waveguides for on-wafer process qualification. , 2014, , .		0
108	What is â€" and what is not â€" an optical isolator. Nature Photonics, 2013, 7, 579-582.	31.4	712

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109	High-Sensitivity In-Band OSNR Monitoring System Integrated on a Silicon Photonics Chip. IEEE Photonics Technology Letters, 2013, 25, 1939-1942.	2.5	12
110	BER Evaluation of a Passive SOI WDM Router. IEEE Photonics Technology Letters, 2013, 25, 2285-2288.	2.5	19
111	Modeling reflections induced by waveguide transitions. Optical and Quantum Electronics, 2013, 45, 309-316.	3.3	2
112	Tunable silicon photonics directional coupler driven by a transverse temperature gradient. Optics Letters, 2013, 38, 863.	3.3	103
113	Post-fabrication trimming of athermal silicon waveguides. Optics Letters, 2013, 38, 5450.	3.3	34
114	Performance of ring-resonator based optical backplane in high capacity routers. , 2013, , .		0
115	Towards ultra-subwavelength optical latches. Applied Physics Letters, 2013, 103, .	3.3	11
116	Compact Tunable Directional Couplers in SOI. , 2013, , .		2
117	Photo-induced trimming of chalcogenide-assisted silicon waveguides. Optics Express, 2012, 20, 15807.	3.4	56
118	Variable carrier reduction in radio-over-fiber systems for increased modulation efficiency using a Si_3N_4 tunable extinction ratio ring resonator. Optics Express, 2012, 20, 25478.	3.4	9
119	Reconfigurable silicon filter with continuous bandwidth tunability. Optics Letters, 2012, 37, 3669.	3.3	40
120	Building block based design of photonic integrated circuits for generic photonic foundries. , 2012, , .		2
121	Exploiting photosensitive As<inf>2</inf>S<inf>3</inf> chalcogenide glass in photonic integrated circuits. , 2012, , .		0
122	High capacity, photo-trimmable athermal silicon waveguides. , 2012, , .		0
123	Nonlinearities in silicon photonics: something to exploit or to counteract?. , 2012, , .		2
124	Modulation depth enhancement in radio-over-fiber systems using a Si<inf>3</inf>N<inf>4</inf> ring resonator notch filter for optical carrier reduction. , 2012, , .		2
125	Comment on â€œNonreciprocal Light Propagation in a Silicon Photonic Circuitâ€. Science, 2012, 335, 38-38.	12.6	114
126	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

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127	Photo-induced trimming of chalcogenide-assisted silicon photonic circuits. Proceedings of SPIE, 2012, , .	0.8	0
128	Trimming of Athermal Silicon Resonators. , 2012, , .		5
129	Travelling-wave resonant four-wave mixing breaks the limits of cavity-enhanced all-optical wavelength conversion. Nature Communications, 2011, 2, 296.	12.8	96
130	Slow pulses in disordered photonic-crystal waveguides. Applied Optics, 2011, 50, G113.	2.1	9
131	Penalty-free transmission in a silicon coupled resonator optical waveguide over the full C-band. Optics Letters, 2011, 36, 3948.	3.3	7
132	Photo-induced trimming of coupled ring-resonator filters and delay lines in As_2S_3 chalcogenide glass. Optics Letters, 2011, 36, 4002.	3.3	41
133	Understanding the rich physics of light propagation in slow photonic crystal waveguides. , 2010, , .		3
134	Roughness Induced Backscattering in Optical Silicon Waveguides. Physical Review Letters, 2010, 104, 033902.	7.8	142
135	Integrated chalcogenide waveguide resonators for mid-IR sensing: leveraging material properties to meet fabrication challenges. Optics Express, 2010, 18, 26728.	3.4	91
136	Resonant cavity-enhanced photosensitivity in As_2S_3 chalcogenide glass at 1550 nm telecommunication wavelength. Optics Letters, 2010, 35, 874.	3.3	38
137	Statistics of backscattering in optical waveguides. Optics Letters, 2010, 35, 1777.	3.3	28
138	Tunable silicon CROW delay lines. , 2010, , .		2
139	Processing Light in Reconfigurable Directly Coupled Ring Resonators. Springer Series in Optical Sciences, 2010, , 181-203.	0.7	1
140	Statistical design in integrated optics. , 2009, , .		1
141	Precise fabrication of coupled ring-resonator structures. , 2009, , .		1
142	The long march of slow photonics. Nature Photonics, 2009, 3, 119-119.	31.4	5
143	Four Wave Mixing and wavelength conversion in slow light regime. , 2009, , .		0
144	Disorder in coupled-resonator optical waveguides. Journal of the Optical Society of America B: Optical Physics, 2009, 26, 858.	2.1	40

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145	Differential Polarization Delay in Coupled-Resonator Optical Waveguides. IEEE Photonics Technology Letters, 2009, 21, 1541-1543.	2.5	5
146	Backscatter in integrated optical waveguides and circuits. , 2009, , .		4
147	Optical coherence pulsed interferometry: shaping probe pulses in time-domain interferometry. Optics Letters, 2008, 33, 1123.	3.3	2
148	Continuously tunable 1 byte delay in coupled-resonator optical waveguides. Optics Letters, 2008, 33, 2389.	3.3	109
149	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
150	Error-free continuously-tunable delay at 10 Gbit/s in a reconfigurable on-chip delay-line. Optics Express, 2008, 16, 8395.	3.4	88
151	Full characterization of integrated optical ring-resonators by phase-sensitive time-domain interferometry. , 2008, , .		2
152	Direct Observation of Subluminal and Superluminal Velocity Swinging in Coupled Mode Optical Propagation. Physical Review Letters, 2007, 98, .	7.8	9
153	2007 Special Section on Modeling of Guided-Wave Photonic Devices. Journal of Lightwave Technology, 2007, 25, 2284-2286.	4.6	0
154	Box-Shaped Dielectric Waveguides: A New Concept in Integrated Optics?. Journal of Lightwave Technology, 2007, 25, 2579-2589.	4.6	89
155	Self-phase modulation in slow-wave structures: A comparative numerical analysis. Optical and Quantum Electronics, 2007, 38, 761-780.	3.3	20
156	Modelling of Polarization Rotation in Bent Waveguides. , 2006, , .		0
157	The ring-based optical Resonant Router. , 2006, , .		2
158	Europtics: an international master in optics and photonics. , 2005, 9664, 144.		0
159	A model-based simulator for integrated optical circuits and free space. Proceedings of SPIE, 2005, , .	0.8	0
160	Experimental investigation of ring-resonators in SiON technology. AIP Conference Proceedings, 2004, , .	0.4	3
161	Wavelength Routing by a Matrix of Ring Resonators. AIP Conference Proceedings, 2004, , .	0.4	1
162	Experimental confirmation of matched bends. Optics Letters, 2004, 29, 465.	3.3	5

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163	Polarization conversion in ring resonator phase shifters. Optics Letters, 2004, 29, 2785.	3.3	57
164	Linear and nonlinear pulse propagation in coupled resonator slow-wave optical structures. Optical and Quantum Electronics, 2003, 35, 365-379.	3.3	172
165	Ring-resonator filters in silicon oxynitride technology for dense wavelength-division multiplexing systems. Optics Letters, 2003, 28, 1567.	3.3	105
166	Optical Slow Wave Structures. Optics and Photonics News, 2003, 14, 44.	0.5	56
167	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
168	Equivalent circuit of Bragg gratings and its application to Fabryâ€“PÃ©rot cavities. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2003, 20, 273.	1.5	29
169	Pultruded fiber optic ribbon sensor for applications in severe environments. Optical Engineering, 2000, 39, 3068.	1.0	0
170	Frequency Characterization of the Nonlinear Refractive Index in Optical Fiber. Fiber and Integrated Optics, 1999, 18, 1-13.	2.5	17
171	Phase noise insensitive measurements of the nonlinear refractive index in fiber links. Optics Communications, 1999, 162, 333-339.	2.1	3
172	Soliton perturbation phenomena in fibers with lumped amplifiers. Optics Communications, 1999, 162, 130-139.	2.1	0
173	Solitons in fibers with lumped amplifiers. Optics Communications, 1998, 147, 180-186.	2.1	1
174	Temperature and Wavelength Drift Tolerant WDM Transmission and Routing in On-chip Silicon Photonic Interconnects. Optics Express, 0, , .	3.4	0