

Milos A Popovic

List of Publications by Year in descending order

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170
papers

6,857
citations

159525

30
h-index

91828

69
g-index

171
all docs

171
docs citations

171
times ranked

5728
citing authors

#	ARTICLE	IF	CITATIONS
1	Single-chip microprocessor that communicates directly using light. Nature, 2015, 528, 534-538.	13.7	1,028
2	What is “ and what is not “ an optical isolator. Nature Photonics, 2013, 7, 579-582.	15.6	712
3	Integrating photonics with silicon nanoelectronics for the next generation of systems on a chip. Nature, 2018, 556, 349-354.	13.7	598
4	Polarization-transparent microphotonic devices in the strong confinement limit. Nature Photonics, 2007, 1, 57-60.	15.6	492
5	Photonic ADC: overcoming the bottleneck of electronic jitter. Optics Express, 2012, 20, 4454.	1.7	447
6	Open foundry platform for high-performance electronic-photonic integration. Optics Express, 2012, 20, 12222.	1.7	194
7	Microring-resonator-based add-drop filters in SiN: fabrication and analysis. Optics Express, 2004, 12, 1437.	1.7	193
8	Building Many-Core Processor-to-DRAM Networks with Monolithic CMOS Silicon Photonics. IEEE Micro, 2009, 29, 8-21.	1.8	180
9	Building Manycore Processor-to-DRAM Networks with Monolithic Silicon Photonics. , 2008, , .		178
10	Monolithic silicon-photonics platforms in state-of-the-art CMOS SOI processes [Invited]. Optics Express, 2018, 26, 13106.	1.7	160
11	Multistage high-order microring-resonator add-drop filters. Optics Letters, 2006, 31, 2571.	1.7	157
12	Coupling-induced resonance frequency shifts in coupled dielectric multi-cavity filters. Optics Express, 2006, 14, 1208.	1.7	147
13	Trapping, corralling and spectral bonding of optical resonances through optically induced potentials. Nature Photonics, 2007, 1, 658-665.	15.6	139
14	Silicon photonics for compact, energy-efficient interconnects [Invited]. Journal of Optical Networking, 2007, 6, 63.	2.5	130
15	Nanophotonic integration in state-of-the-art CMOS foundries. Optics Express, 2011, 19, 2335.	1.7	125
16	Fabrication of add-drop filters based on frequency-matched microring resonators. Journal of Lightwave Technology, 2006, 24, 2207-2218.	2.7	120
17	Comment on “Nonreciprocal Light Propagation in a Silicon Photonic Circuit”. Science, 2012, 335, 38-38.	6.0	114
18	A 45 nm CMOS-SOI Monolithic Photonics Platform With Bit-Statistics-Based Resonant Microring Thermal Tuning. IEEE Journal of Solid-State Circuits, 2016, 51, 893-907.	3.5	99

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19	Serpentine optical phased arrays for scalable integrated photonic lidar beam steering. <i>Optica</i> , 2020, 7, 726.	4.8	97
20	General treatment of optical forces and potentials in mechanically variable photonic systems. <i>Optics Express</i> , 2009, 17, 18116.	1.7	85
21	A 40-Gb/s PAM-4 Transmitter Based on a Ring-Resonator Optical DAC in 45-nm SOI CMOS. <i>IEEE Journal of Solid-State Circuits</i> , 2017, 52, 3503-3516.	3.5	67
22	Efficient planar fiber-to-chip coupler based on two-stage adiabatic evolution. <i>Optics Express</i> , 2010, 18, 15790.	1.7	66
23	A Monolithically-Integrated Chip-to-Chip Optical Link in Bulk CMOS. <i>IEEE Journal of Solid-State Circuits</i> , 2015, 50, 828-844.	3.5	65
24	CMOS-compatible dual-output silicon modulator for analog signal processing. <i>Optics Express</i> , 2008, 16, 11027.	1.7	62
25	Ultra-low-loss CMOS-compatible waveguide crossing arrays based on multimode Bloch waves and imaginary coupling. <i>Optics Letters</i> , 2014, 39, 335.	1.7	58
26	Tunable coupled-mode dispersion compensation and its application to on-chip resonant four-wave mixing. <i>Optics Letters</i> , 2014, 39, 5689.	1.7	54
27	Dark state lasers. <i>Optics Letters</i> , 2014, 39, 4136.	1.7	53
28	Air trenches for sharp silica waveguide bends. <i>Journal of Lightwave Technology</i> , 2002, 20, 1762-1772.	2.7	52
29	Quantum-correlated photon pairs generated in a commercial 45-nm complementary metal-oxide semiconductor microelectronic chip. <i>Optica</i> , 2015, 2, 1065.	4.8	52
30	Depletion-mode carrier-plasma optical modulator in zero-change advanced CMOS. <i>Optics Letters</i> , 2013, 38, 2657.	1.7	51
31	Ultra-Efficient CMOS Fiber-to-Chip Grating Couplers. , 2016, , .		44
32	Localized substrate removal technique enabling strong-confinement microphotonics in bulk Si CMOS processes. , 2008, , .		35
33	Kinetics of Proton Transport into Influenza Virions by the Viral M2 Channel. <i>PLoS ONE</i> , 2012, 7, e31566.	1.1	31
34	Room-temperature-deposited dielectrics and superconductors for integrated photonics. <i>Optics Express</i> , 2017, 25, 10322.	1.7	31
35	Demonstration of an electronic photonic integrated circuit in a commercial scaled bulk CMOS process. , 2008, , .		30
36	Four-wave mixing in silicon coupled-cavity resonators with port-selective, orthogonal supermode excitation. <i>Optics Letters</i> , 2015, 40, 2120.	1.7	30

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37	Ultrawide tuning of photonic microcavities via evanescent field perturbation. Optics Letters, 2006, 31, 1241.	1.7	29
38	75% efficient wide bandwidth grating couplers in a 45 nm microelectronics CMOS process. , 2015, , .		27
39	Air trench bends and splitters for dense optical integration in low index contrast. Journal of Lightwave Technology, 2005, 23, 2271-2277.	2.7	25
40	Channel addâ€“drop filter based on dual photonic crystal cavities in pushâ€“pull mode. Optics Letters, 2015, 40, 4206.	1.7	24
41	Design of triply-resonant microphotonic parametric oscillators based on Kerr nonlinearity. Optics Express, 2014, 22, 15837.	1.7	23
42	Broadband hitless bypass switch for integrated photonic circuits. IEEE Photonics Technology Letters, 2006, 18, 1137-1139.	1.3	22
43	Polycrystalline silicon ring resonator photodiodes in a bulk complementary metal-oxide-semiconductor process. Optics Letters, 2014, 39, 1061.	1.7	21
44	Optimal design of a microring cavity optical modulator for efficient RF-to-optical conversion. Optics Express, 2018, 26, 2462.	1.7	19
45	Photonics design tool for advanced CMOS nodes. IET Optoelectronics, 2015, 9, 163-167.	1.8	18
46	Wavelength conversion in modulated coupled-resonator systems and their design via an equivalent linear filter representation. Optics Letters, 2015, 40, 107.	1.7	17
47	Compact multi-million Q resonators and 100â€“MHz passband filter bank in a thick-SOI photonics platform. Optics Letters, 2020, 45, 3005.	1.7	17
48	Energy-efficient active photonics in a zero-change, state-of-the-art CMOS process. , 2014, , .		16
49	Photonic Crystal Microcavities in a Microelectronics 45-nm SOI CMOS Technology. IEEE Photonics Technology Letters, 2015, 27, 665-668.	1.3	16
50	Integration of silicon photonics in bulk CMOS. , 2014, , .		15
51	Sharply-defined optical filters and dispersionless delay lines based on loop-coupled resonators and "negative" coupling. , 2007, , .		14
52	Depletion-mode polysilicon optical modulators in a bulk complementary metal-oxide semiconductor process. Optics Letters, 2013, 38, 2729.	1.7	14
53	A Bandwidth-Dense, Low Power Electronic-Photonic Platform and Architecture for Multi-Tbps Optical I/O. , 2018, , .		14
54	Universally balanced photonic interferometers. Optics Letters, 2006, 31, 2713.	1.7	13

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55	Low-Loss Bloch Waves in Open Structures and Highly Compact, Efficient Si Waveguide-Crossing Arrays. Conference Proceedings - Lasers and Electro-Optics Society Annual Meeting-LEOS, 2007, , .	0.0	13
56	Reconfigurable silicon photonic circuits for telecommunication applications. Proceedings of SPIE, 2008, , .	0.8	13
57	Optical isolation using microring modulators. Optics Letters, 2021, 46, 460.	1.7	13
58	Complex-frequency leaky mode computations using PML boundary layers for dielectric resonant structures. , 2003, , ITuD4.		12
59	High Directivity, Vertical Fiber-to-Chip Coupler with Anisotropically Radiating Grating Teeth. , 2007, , .		12
60	A 45nm SOI monolithic photonics chip-to-chip link with bit-statistics-based resonant microring thermal tuning. , 2015, , .		12
61	Finite-difference complex-wavevector band structure solver for analysis and design of periodic radiative microphotonic structures. Optics Letters, 2015, 40, 1053.	1.7	11
62	OPTICAL RESONATORS AND FILTERS. Advanced Series in Applied Physics, 2004, , 1-37.	0.0	11
63	A 1.23pJ/b 2.5Gb/s monolithically integrated optical carrier-injection ring modulator and all-digital driver circuit in commercial 45nm SOI. , 2013, , .		9
64	Efficient wavelength multiplexers based on asymmetric response filters. Optics Express, 2013, 21, 10903.	1.7	9
65	Triply resonant coupled-cavity electro-optic modulators for RF to optical signal conversion. Optics Express, 2020, 28, 788.	1.7	9
66	Multistage high-order microring-resonator filters with relaxed tolerances for high through-port extinction. , 2005, , .		8
67	Hitless-Reconfigurable and Bandwidth-Scalable Silicon Photonic Circuits for Telecom and Interconnect Applications. , 2008, , .		8
68	Device Architecture and Precision Nanofabrication of Microring-Resonator Filter Banks for Integrated Photonic Systems. Journal of Nanoscience and Nanotechnology, 2010, 10, 2044-2052.	0.9	8
69	Monolithic Source of Entangled Photons with Integrated Pump Rejection. , 2018, , .		8
70	Miniature, highly sensitive MOSCAP ring modulators in co-optimized electronic-photonic CMOS. Photonics Research, 2022, 10, A1.	3.4	8
71	Experimental demonstration of loop-coupled microring resonators for optimally sharp optical filters. , 2008, , .		7
72	Band-Structure Approach to Synthesis of Grating Couplers with Ultra-High Coupling Efficiency and Directivity. , 2015, , .		7

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73	29.3 A 40Gb/s PAM-4 transmitter based on a ring-resonator optical DAC in 45nm SOI CMOS. , 2017, , .		7
74	Reflectionless dual standing-wave microcavity resonator units for photonic integrated circuits. Optics Express, 2020, 28, 35986.	1.7	7
75	Optical loss in silicon microphotonic waveguides induced by metallic contamination. Applied Physics Letters, 2008, 92, 131108.	1.5	6
76	Minimum drop-loss design of microphotonic microring-resonator channel add-drop filters. , 2012, , .		6
77	Building Manycore Processor-to-DRAM Networks with Monolithic CMOS Silicon Photonics. IEEE Micro, 2016, , 1-1.	1.8	6
78	Global design rules for silicon microphotonic waveguides: Sensitivity, polarization and resonance tunability. , 2006, , .		5
79	Scaling Zero-Change Photonics: An Active Photonics Platform in a 32 nm Microelectronics SOI CMOS Process. , 2015, , .		5
80	High-resolution and compact serpentine integrated grating spectrometer. Journal of the Optical Society of America B: Optical Physics, 2021, 38, A75.	0.9	5
81	Tailoring of Individual Photon Lifetimes as a Degree of Freedom in Resonant Quantum Photonic Sources. , 2016, , .		5
82	Optomechanical self-adaptive photonic devices based on light forces: a path to robust high-index-contrast nanophotonic circuits. , 2009, , .		4
83	Fourier-basis structured illumination imaging with an array of integrated optical phased arrays. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2021, 38, B19.	0.8	4
84	Serpentine optical phased array silicon photonic aperture tile with two-dimensional wavelength beam steering. , 2019, , .		4
85	Air trench waveguide bend for high-density optical integration. , 2004, , .		3
86	Strong-Confinement Microring Resonator Photonic Circuits. Conference Proceedings - Lasers and Electro-Optics Society Annual Meeting-LEOS, 2007, , .	0.0	3
87	Integrated Photonic Magic-T (with Twice the Magic). , 2010, , .		3
88	Integration of silicon photonics in a bulk CMOS memory flow. , 2013, , .		3
89	Acoustic Waveguide Eigenmode Solver Based on a Staggered-Grid Finite-Difference Method. Scientific Reports, 2017, 7, 17509.	1.6	3
90	Photonics-based Microwave Radiometer for Hyperspectral Earth Remote Sensing. , 2018, , .		3

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91	High Shift Efficiency O-band Spoked-Ring Modulator Allowing Fully Electro-Optic Channel Tuning in a 45nm CMOS Platform. , 2021, , .		3
92	Demonstration and Fabrication Tolerance Study of a Low-Loss, Ultra-broadband Rapid Adiabatic 3-dB Coupler in a Next- Generation 45 nm Monolithic Electronic-Photonic Platform. , 2021, , .		3
93	Resonant optical modulators beyond conventional energy-efficiency and modulation frequency limitations. , 2010, , .		3
94	Vernier Si-Photonic Phased Array Transceiver for Grating Lobe Suppression and Extended Field-of-View. , 2019, , .		3
95	A modular laboratory curriculum for teaching integrated photonics to students with diverse backgrounds. , 2019, , .		3
96	Ultra-high Q Resonators and Sub-GHz Bandwidth Second Order Filters in an SOI Foundry Platform. , 2020, , .		3
97	Integrated optical isolators using electrically driven acoustic waves. Optics Express, 2020, 28, 36055.	1.7	3
98	Polarization-insensitive 1D grating coupler based on a zero-birefringence subwavelength corelet waveguide. Optics Letters, 2022, 47, 3167.	1.7	3
99	Vernier optical phased array lidar transceivers. Optics Express, 2022, 30, 24589.	1.7	3
100	Micron-size bending radii in silica-based waveguides. , 2002, 4640, 54.		2
101	Low loss waveguide integration within a thin-SOI CMOS foundry. , 2012, , .		2
102	High-Q contacted ring microcavities with scatterer-avoiding "wiggler" Bloch wave supermode fields. Applied Physics Letters, 2014, 104, 201102.	1.5	2
103	Monolithic silicon photonics in a sub-100nm SOI CMOS microprocessor foundry: progress from devices to systems. , 2015, , .		2
104	Ring modulators with enhanced efficiency based on standing-wave operation on a field-matched, interdigitated p-n junction. Optics Express, 2016, 24, 27433.	1.7	2
105	A 12Gb/s, 8.6µApp input sensitivity, monolithic-integrated fully differential optical receiver in CMOS 45nm SOI process. , 2016, , .		2
106	Photonic crystal modulator in a CMOS foundry platform. , 2021, , .		2
107	Optimally efficient resonance-tuned optical modulators. , 2009, , .		2
108	Dynamical Slow Light Cell based on Controlled Far-Field Interference of Microring Resonators. , 2010, , .		2

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109	Tunable Source of Quantum-Correlated Photons with Integrated Pump Rejection in a Silicon CMOS Platform. , 2021, , .		2
110	Engineering optical forces in waveguides and cavities based on optical response. , 2010, , .		1
111	Multi-modal optical microcavities for loss avoidance. , 2013, , .		1
112	Microphotonic Channel Add-Drop Filter Based on Dual Photonic Crystal Cavity System in Push-Pull Mode. , 2014, , .		1
113	Spoked-ring microcavities: enabling seamless integration of nanophotonics in unmodified advanced CMOS microelectronics chips. Proceedings of SPIE, 2014, , .	0.8	1
114	Unidirectional chip-to-fiber grating couplers in unmodified 45nm CMOS Technology. , 2014, , .		1
115	Passive Linewidth Narrowing Through Nondegenerate Optical Parametric Oscillation With Asymmetric Port Couplings. , 2016, , .		1
116	Compact Broadband Rapid-Adiabatic Polarization Splitter- Rotators in a Monolithic Electronic-Photonic SOI Platform. , 2021, , .		1
117	Ultra-low-loss Waveguide Crossing Arrays Based on Imaginary Coupling of Multimode Bloch Waves. , 2013, , .		1
118	Linear Photonic Crystal Microcavities in Zero-Change SOI CMOS. , 2013, , .		1
119	Microprocessor Chip with Photonic I/O. , 2017, , .		1
120	Fabrication control of the resonance frequencies of high- index-contrast microphotonic cavities. , 2006, , .		1
121	Dark State Lasers. , 2013, , .		1
122	Asymmetric, pole-zero microring-resonator filters for efficient on-chip dense WDM multiplexers. , 2013, , .		1
123	Dual-Cavity Optically and Electrically Resonant Modulators for Efficient Narrowband RF/Microwave Photonics. , 2017, , .		1
124	Efficient coupled-cavity electro-optic modulator on silicon for high carrier frequency, narrowband RF signals. , 2019, , .		1
125	Experimental Demonstration of Rapid Adiabatic Couplers. , 2019, , .		1
126	Tiled Silicon-Photonic Phased Arrays for Large-Area Apertures. , 2019, , .		1

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127	Integrated photonics and application-specific design on a massive open online course platform. , 2019, , .		1
128	MOSCAP Ring Modulator with 1.5 μm Radius, 8.5 THz FSR and 30 GHz/V Shift Efficiency in a 45 nm SOI CMOS Process. , 2021, , .		1
129	Mode multiplexer for guided optical and acoustic waves. Optics Letters, 2020, 45, 6066.	1.7	1
130	Photonic molecule electro-optic modulators for efficient, widely tunable RF sideband generation and wavelength conversion. , 2021, , .		1
131	Rapid Adiabatic 3 dB Coupler with $50\pm 1\%$ Splitting Over 200 nm including S, C and L Bands in 45 nm CMOS Platform. , 2021, , .		1
132	High-index-contrast microphotronics, from concept to implementation. , 2006, , .		0
133	Ultra-widely tunable photonic microcavities through evanescent field perturbation. , 2006, , .		0
134	Metallic-Contamination-Induced Optical Loss in Silicon Microphotonic Waveguides. , 2007, , .		0
135	Strategies for successful realization of strong confinement microphotonic devices. , 2008, , .		0
136	Self-aligning “smart” microcavities and picometer-scale optomechanical control through optical forces and potentials. , 2008, , .		0
137	Dynamical systems in nanophotonics: From energy efficient modulators to light forces and optomechanics. , 2009, , .		0
138	Engineering optical forces in waveguides and cavities based on optical response. , 2010, , .		0
139	Synthesis of high-Q linear photonic crystal microcavities based on a real-k band structure solver. , 2013, , .		0
140	Synthesis of Active, Nonlinear and Quantum Photonic Circuits. , 2013, , .		0
141	Finite-Difference Complex Wavevector Band Structure Solver for Nanophotonics Applications. , 2014, , .		0
142	Thermo-optically tunable linear photonic crystal microcavities in advanced SOI CMOS technology. , 2014, , .		0
143	Air-suspended High-Q Ring Microcavities with Scatterer-Avoiding “Wiggler“ Supermode Fields. , 2014, , .		0
144	Efficient Thermally Tunable Linear Photonic Crystal Cavities in a Zero-Change Microelectronics SOI CMOS Process. , 2014, , .		0

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145	Efficient nanoscale photonic devices and monolithic electronic-photonic subsystems in sub-100 nm SOI CMOS. , 2015, , .		0
146	Finite-Difference Elastic Wave Mode Solver for Acoustic Waveguide Design. , 2016, , .		0
147	Compact, Broadband Waveguide Two-Mode (De)-Multiplexers based on Rapid Adiabatic Coupling. , 2021, , .		0
148	High-Throughput, Multimode Spectroscopy Using Cross-Dispersive Serpentine Integrated Grating Arrays. , 2021, , .		0
149	Efficient Passive Signal Linewidth Narrowing by Q-Engineered $\ddot{\eta}(2)$ Parametric Oscillators. , 2021, , .		0
150	Microring Modulators in a New Silicon Photonics-Optimized 45 nm Monolithic Electronics-Photonics SOI CMOS Platform. , 2021, , .		0
151	Circuit theory and microphotonic circuit design: from resonant filters to light-powered nanomachines. , 2008, , .		0
152	Generalized Treatment of Optically-Induced Forces and Potentials in Optomechanically Variable Photonic Circuits. , 2008, , .		0
153	Nano-Optomechanical Photonic Circuits Based on Light Forces. , 2010, , .		0
154	Optimum micro-optical parametric oscillators based on third-order nonlinearity. , 2013, , .		0
155	Depletion-mode polysilicon optical modulators in a bulk CMOS process. , 2013, , .		0
156	High-Q Contacted Ring Microcavities with Scatterer-Avoiding "Wiggler" Supermode Fields. , 2013, , .		0
157	Four-wave mixing in silicon "photonic molecule" resonators with port-selective, orthogonal supermode excitation. , 2014, , .		0
158	Analysis of Leaky-Wave Microphotonic Structures with a Complex-Wavevector Photonic Band Structure Solver. , 2014, , .		0
159	Wide-band On-chip Four-Wave Mixing via Coupled Cavity Dispersion Compensation. , 2014, , .		0
160	Ring modulators in standing-wave and partial standing wave operation on a matched interdigitated p-n junction for enhanced efficiency. , 2015, , .		0
161	Low-Power Parametric Wavelength Conversion in 45nm Microelectronics CMOS Silicon-On-Insulator Technology. , 2015, , .		0
162	Optical Data Stream Wavelength Conversion by a Dual-Active-Cavity Silicon Microring Wavelength Converter. , 2020, , .		0

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163	Photonic resonators with microring-like behavior based on standing wave cavity pairs with opposite-symmetry modes. , 2020, , .		0
164	Polarization Insensitive Grating Coupler Based on a Zero-Birefringence Corelet Waveguide. , 2020, , .		0
165	Ultra-shallow ridge waveguide microring resonators for narrow band photonic RF filters in conventional silicon-on-insulator platforms. , 2016, , .		0
166	Frequency Translating Add/Drop Filters based on Electro-Optically Modulated Photonic Molecules. , 2021, , .		0
167	Can one critically couple to a multimode, coupled-cavity finite equispaced comb resonator?. , 2021, , .		0
168	Silicon Waveguides and Resonators with Sub-0.1 dB/cm Propagation Loss and Over 7 Million Q in a Foundry Process. , 2021, , .		0
169	High Q, Compact Photonic Crystal Nanobeam Cavity for an Active Device Platform in a CMOS Silicon Photonics Process. , 2021, , .		0
170	Reflectionless standing-wave operation in microring resonators. , 2022, , .		0