

Lukas Chrostowski

List of Publications by Year in descending order

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145
papers

5,488
citations

81900

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95266

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147
all docs

147
docs citations

147
times ranked

3537
citing authors

| # | ARTICLE | IF | CITATIONS |
|----|--|-----|-----------|
| 1 | Prospects and applications of photonic neural networks. <i>Advances in Physics: X</i> , 2022, 7, . | 4.1 | 54 |
| 2 | Scaling up silicon photonic-based accelerators: Challenges and opportunities. <i>APL Photonics</i> , 2022, 7, . | 5.7 | 40 |
| 3 | Polymer modulators in silicon photonics: review and projections. <i>Nanophotonics</i> , 2022, 11, 3855-3871. | 6.0 | 14 |
| 4 | Spectral Design of Silicon Integrated Bragg Gratings: A Tutorial. <i>Journal of Lightwave Technology</i> , 2021, 39, 712-729. | 4.6 | 18 |
| 5 | SiEPICfab: the Canadian silicon photonics rapid-prototyping foundry for integrated optics and quantum computing. , 2021, , . | | 2 |
| 6 | Broadband, silicon photonic, optical add-drop filters with 3-dB bandwidths up to 11 THz. <i>Optics Letters</i> , 2021, 46, 2738. | 3.3 | 21 |
| 7 | Silicon photonic quantum computing with spin qubits. <i>APL Photonics</i> , 2021, 6, . | 5.7 | 22 |
| 8 | Contra-directional pump reject filters integrated with a micro-ring resonator photon-pair source in silicon. <i>Optics Express</i> , 2021, 29, 25173. | 3.4 | 9 |
| 9 | Stable and Reduced-Linewidth Laser Through Active Cancellation of Reflections Without a Magneto-Optic Isolator. <i>Journal of Lightwave Technology</i> , 2021, 39, 6215-6230. | 4.6 | 3 |
| 10 | Apodization of Silicon Integrated Bragg Gratings Through Periodic Phase Modulation. <i>IEEE Journal of Selected Topics in Quantum Electronics</i> , 2020, 26, 1-15. | 2.9 | 7 |
| 11 | Automated Adaptation and Stabilization of a Tunable WDM Polarization-Independent Receiver on Active Silicon Photonic Platform. <i>IEEE Photonics Journal</i> , 2020, 12, 1-11. | 2.0 | 5 |
| 12 | Computational Lithography for Silicon Photonics Design. <i>IEEE Journal of Selected Topics in Quantum Electronics</i> , 2020, 26, 1-8. | 2.9 | 17 |
| 13 | Widely Tunable, Fast Scanning, Narrow Linewidth, Mid-IR Source Centred at 2.9 μm . , 2020, , . | | 1 |
| 14 | Automated control algorithms for silicon photonic polarization receiver. <i>Optics Express</i> , 2020, 28, 1885. | 3.4 | 25 |
| 15 | Phase-shifted Bragg grating-based Mach-Zehnder Interferometer Sensor using an Intensity Interrogation Scheme. , 2020, , . | | 0 |
| 16 | Measuring on-chip waveguide losses using a single, two-point coupled microring resonator. <i>Optics Express</i> , 2020, 28, 10225. | 3.4 | 4 |
| 17 | Monitoring and automatic tuning and stabilization of a 2 \times 2 MZI optical switch for large-scale WDM switch networks. <i>Optics Express</i> , 2019, 27, 24747. | 3.4 | 12 |
| 18 | Design of Silicon Integrated Bragg Gratings for Microwave Photonics Signal Processing. , 2019, , . | | 1 |

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|----|---|-----|-----------|
| 19 | Advances in Silicon Photonic Sensors Using Sub-Wavelength Gratings. , 2019, , . | | 3 |
| 20 | Silicon Photonic Circuit Design Using Rapid Prototyping Foundry Process Design Kits. IEEE Journal of Selected Topics in Quantum Electronics, 2019, 25, 1-26. | 2.9 | 62 |
| 21 | Optical Add-drop Filters using Cladding-modulated Sub-wavelength Grating Contra-directional Couplers for Silicon-on-Insulator Platforms. , 2019, , . | | 2 |
| 22 | Long-term monitoring in a microfluidic system to study tumour spheroid response to chronic and cycling hypoxia. Scientific Reports, 2019, 9, 17782. | 3.3 | 48 |
| 23 | Wideband, Flat-Top, SOI Filter using an Apodized Sub-Wavelength-Grating Contra-Directional Coupler. , 2019, , . | | 0 |
| 24 | Contra-Directional Couplers as Pump Rejection and Recycling Filters for on-Chip Photon-Pair Sources. , 2019, , . | | 0 |
| 25 | Effect of lithography on SOI, grating-based devices for sensor and telecommunications applications. , 2019, , . | | 2 |
| 26 | Enhanced Sensitivity of Subwavelength Multibox Waveguide Microring Resonator Label-Free Biosensors. IEEE Journal of Selected Topics in Quantum Electronics, 2019, 25, 1-11. | 2.9 | 75 |
| 27 | Label-free biosensing with a multi-box sub-wavelength phase-shifted Bragg grating waveguide. Biomedical Optics Express, 2019, 10, 4825. | 2.9 | 34 |
| 28 | Characterization and compensation of apodization phase noise in silicon integrated Bragg gratings. Optics Express, 2019, 27, 9516. | 3.4 | 9 |
| 29 | Compact wavelength- and bandwidth-tunable microring modulator. Optics Express, 2019, 27, 26661. | 3.4 | 19 |
| 30 | Compact, silicon-on-insulator, series-cascaded, contradirectional-coupling-based filters with >50â€‰dB adjacent channel isolation. Optics Letters, 2019, 44, 439. | 3.3 | 28 |
| 31 | Narrow-band, polarization-independent, transmission filter in a silicon-on-insulator strip waveguide. Optics Letters, 2019, 44, 847. | 3.3 | 11 |
| 32 | Photoconductive heaters enable control of large-scale silicon photonic ring resonator circuits. Optica, 2019, 6, 84. | 9.3 | 55 |
| 33 | Apodized Spiral Bragg Grating Waveguides in Silicon-on-Insulator. IEEE Photonics Technology Letters, 2018, 30, 111-114. | 2.5 | 33 |
| 34 | Silicon Photonics Circuit Design: Methods, Tools and Challenges. Laser and Photonics Reviews, 2018, 12, 1700237. | 8.7 | 323 |
| 35 | FSR-Free Microring Coupling-Based Modulator. , 2018, , . | | 0 |
| 36 | Widely Tunable, High-Q Two-Dimensional Photonic Crystal Cavities for cQED Applications. , 2018, , . | | 0 |

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| 37 | FSR-Free Microring-based Modulator. , 2018, , . | | 0 |
| 38 | Compact Contra-Directional-Coupler-Based Filters for CWDM Applications. , 2018, , . | | 0 |
| 39 | Broadband Polarization Splitter-Rotator using Sub-wavelength Grating Assisted Adiabatic Waveguides. , 2018, , . | | 1 |
| 40 | System-Level Integrated Active Silicon Photonic Biosensor for Detecting Small Molecule Interactions. , 2018, , . | | 0 |
| 41 | Silicon Photonic Biosensors Using Label-Free Detection. Sensors, 2018, 18, 3519. | 3.8 | 237 |
| 42 | Controlling evanescent waves using silicon photonic all-dielectric metamaterials for dense integration. Nature Communications, 2018, 9, 1893. | 12.8 | 140 |
| 43 | Automatic Configuration and Wavelength Locking of Coupled Silicon Ring Resonators. Journal of Lightwave Technology, 2018, 36, 210-218. | 4.6 | 33 |
| 44 | Optical signal processing based on silicon photonics waveguide Bragg gratings: review. Frontiers of Optoelectronics, 2018, 11, 163-188. | 3.7 | 44 |
| 45 | Polarization-Independent Mode-Evolution-Based Coupler for the Silicon-on-Insulator Platform. IEEE Photonics Journal, 2018, 10, 1-10. | 2.0 | 32 |
| 46 | Multichannel photonic Hilbert transformers based on complex modulated integrated Bragg gratings. Optics Letters, 2018, 43, 1031. | 3.3 | 18 |
| 47 | System-level integration of active silicon photonic biosensors using Fan-Out Wafer-Level-Packaging for low cost and multiplexed point-of-care diagnostic testing. Sensors and Actuators B: Chemical, 2018, 273, 1610-1617. | 7.8 | 27 |
| 48 | Narrow-Band Add-Drop Filter Based on Phase-Modulated Grating-Assisted Contra-Directional Couplers. Journal of Lightwave Technology, 2018, 36, 3760-3764. | 4.6 | 26 |
| 49 | Ultra-broadband 20-Å ² adiabatic 30-dB coupler using subwavelength-grating-assisted silicon-on-insulator strip waveguides. Optics Letters, 2018, 43, 1935. | 3.3 | 67 |
| 50 | Feedback control for microring weight banks. Optics Express, 2018, 26, 26422. | 3.4 | 83 |
| 51 | High-performance silicon photonic tri-state switch based on balanced nested Mach-Zehnder interferometer. Scientific Reports, 2017, 7, 12244. | 3.3 | 19 |
| 52 | Improvement of silicon waveguide transmission by advanced e-beam lithography data fracturing strategies. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2017, 35, 06G504. | 1.2 | 0 |
| 53 | Optimized sensitivity of Silicon-on-Insulator (SOI) strip waveguide resonator sensor. Biomedical Optics Express, 2017, 8, 500. | 2.9 | 76 |
| 54 | Performance prediction for silicon photonics integrated circuits with layout-dependent correlated manufacturing variability. Optics Express, 2017, 25, 9712. | 3.4 | 152 |

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| 55 | Sub-wavelength grating for enhanced ring resonator biosensor. Optics Express, 2016, 24, 15672. | 3.4 | 187 |
| 56 | FSR-free silicon-on-insulator microring resonator based filter with bent contra-directional couplers. Optics Express, 2016, 24, 29009. | 3.4 | 43 |
| 57 | Crosstalk Penalty in Microring-Based Silicon Photonic Interconnect Systems. Journal of Lightwave Technology, 2016, 34, 4043-4052. | 4.6 | 43 |
| 58 | Compact Broadband Directional Couplers Using Subwavelength Gratings. IEEE Photonics Journal, 2016, 8, 1-8. | 2.0 | 56 |
| 59 | Ultra-Compact Sub-Wavelength Grating Polarization Splitter-Rotator for Silicon-on-Insulator Platform. IEEE Photonics Journal, 2016, 8, 1-9. | 2.0 | 23 |
| 60 | Integrated optical Dirac physics via inversion symmetry breaking. Physical Review A, 2016, 94, . | 2.5 | 23 |
| 61 | Silicon photonic polarization beamsplitter and rotator for on-chip polarization control. , 2016, , . | | 4 |
| 62 | Effects of backscattering in high-Q, large-area silicon-on-insulator ring resonators. Optics Letters, 2016, 41, 1538. | 3.3 | 15 |
| 63 | Silicon Electronics-Photonics Integrated Circuits for Datacenters. , 2016, , . | | 3 |
| 64 | Vernier assisted Mach-Zehnder modulator. , 2016, , . | | 0 |
| 65 | Broadband 20-dB adiabatic 3-dB coupler using silicon-on-insulator sub-wavelength grating waveguides. Optics Letters, 2016, 41, 3041. | 3.3 | 86 |
| 66 | Wideband dynamic microwave frequency identification system using a low-power ultracompact silicon photonic chip. Nature Communications, 2016, 7, 13004. | 12.8 | 91 |
| 67 | Significant Crosstalk Reduction Using All-Dielectric CMOS-Compatible Metamaterials. IEEE Photonics Technology Letters, 2016, 28, 2787-2790. | 2.5 | 27 |
| 68 | Crosstalk in SOI Microring Resonator-Based Filters. Journal of Lightwave Technology, 2016, 34, 2886-2896. | 4.6 | 40 |
| 69 | Photonic Hilbert transformers based on laterally apodized integrated waveguide Bragg gratings on a SOI wafer. Optics Letters, 2016, 41, 5039. | 3.3 | 13 |
| 70 | Measurement of optical losses in silicon photonic contra-directional couplers. , 2015, , . | | 0 |
| 71 | A wavelength-selective polarization rotating reflector using a partially-etched asymmetric Bragg grating on an SOI strip waveguide. , 2015, , . | | 3 |
| 72 | Designing a Microfluidic Device with Integrated Ratiometric Oxygen Sensors for the Long-Term Control and Monitoring of Chronic and Cyclic Hypoxia. Sensors, 2015, 15, 20030-20052. | 3.8 | 30 |

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| 73 | Introduction to Issue on Semiconductor Lasers. IEEE Journal of Selected Topics in Quantum Electronics, 2015, 21, 6-8. | 2.9 | 6 |
| 74 | Intraband crosstalk of SOI microring resonator-based optical add-drop multiplexers. , 2015, , . | | 2 |
| 75 | Wide FSR silicon-on-insulator microring resonator with bent couplers. , 2015, , . | | 1 |
| 76 | Apodized Focusing Fully Etched Subwavelength Grating Couplers. IEEE Photonics Journal, 2015, 7, 1-10. | 2.0 | 16 |
| 77 | Comparison of photonic 2×2 3-dB couplers for 220 nm silicon-on-insulator platforms. , 2015, , . | | 5 |
| 78 | An FSR-free silicon resonator reflector using a contra-directional coupler and a Bragg reflector. , 2015, , . | | 0 |
| 79 | A low-power biasing scheme for silicon-on-insulator traveling-wave modulators. , 2015, , . | | 2 |
| 80 | Ultra-high Q multimode waveguide ring resonators for microwave photonics signal processing. , 2015, , . | | 9 |
| 81 | Broadband silicon photonic directional coupler using asymmetric-waveguide based phase control. Optics Express, 2015, 23, 3795. | 3.4 | 224 |
| 82 | Crosstalk limitations of microring-resonator based WDM demultiplexers on SOI. , 2015, , . | | 15 |
| 83 | Michelson Interferometer Thermo-Optic Switch on SOI With a 50- μ W Power Consumption. IEEE Photonics Technology Letters, 2015, 27, 2319-2322. | 2.5 | 37 |
| 84 | Silicon-on-Insulator Modulators Using a Quarter-Wave Phase-Shifted Bragg Grating. IEEE Photonics Technology Letters, 2015, 27, 2331-2334. | 2.5 | 27 |
| 85 | Wavelength tuning and stabilization of microring-based filters using silicon in-resonator photoconductive heaters. Optics Express, 2015, 23, 25084. | 3.4 | 117 |
| 86 | Widely tunable microwave photonics notch filter based on a waveguide Bragg grating on silicon. , 2014, , . | | 1 |
| 87 | Analytical modeling for ultra-high-speed microring modulators with electrical and optical dynamics. , 2014, , . | | 2 |
| 88 | Frequency agile microwave photonics notch filter based on a waveguide Bragg grating on silicon. , 2014, , . | | 2 |
| 89 | Focusing sub-wavelength grating couplers with low back reflections for rapid prototyping of silicon photonic circuits. Optics Express, 2014, 22, 20652. | 3.4 | 180 |
| 90 | Performance of ultra-thin SOI-based resonators for sensing applications. Optics Express, 2014, 22, 14166. | 3.4 | 91 |

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| 91 | Precise control of the coupling coefficient through destructive interference in silicon waveguide Bragg gratings. Optics Letters, 2014, 39, 5519. | 3.3 | 90 |
| 92 | Microring modulator using drop-port phase interference. , 2014, , . | | 0 |
| 93 | Silicon photonic Bragg grating modulators. , 2014, , . | | 3 |
| 94 | Compact and broad band directional coupler for sub-wavelength grating SOI components. , 2014, , . | | 1 |
| 95 | Large-area, high-Q SOI ring resonators. , 2014, , . | | 7 |
| 96 | Sensitivity analysis of thin waveguide SOI ring resonators for sensing applications. , 2013, , . | | 0 |
| 97 | Room-temperature operation of transistor vertical-cavity surface-emitting laser. Electronics Letters, 2013, 49, 208-210. | 1.0 | 15 |
| 98 | 2-2 adiabatic 3-dB coupler on silicon-on-insulator rib waveguides. Proceedings of SPIE, 2013, , . | 0.8 | 74 |
| 99 | FSR-Eliminated Vernier Racetrack Resonators Using Grating-Assisted Couplers. IEEE Photonics Journal, 2013, 5, 2202511-2202511. | 2.0 | 43 |
| 100 | Coupler-apodized Bragg-grating add-drop filter. Optics Letters, 2013, 38, 3068. | 3.3 | 35 |
| 101 | Silicon photonic grating-assisted, contra-directional couplers. Optics Express, 2013, 21, 3633. | 3.4 | 121 |
| 102 | Ultra-compact, flat-top demultiplexer using anti-reflection contra-directional couplers for CWDM networks on silicon. Optics Express, 2013, 21, 6733. | 3.4 | 128 |
| 103 | Integrated waveguide Bragg gratings for microwave photonics signal processing. Optics Express, 2013, 21, 25120. | 3.4 | 183 |
| 104 | Fabrication and experimental characterization of cascaded SOI micro-rings for highthroughput label-free molecular sensing. , 2013, , . | | 0 |
| 105 | Multi-period Bragg gratings in silicon waveguides. , 2013, , . | | 1 |
| 106 | 2.5 THz bandwidth on-chip photonic fractional Hilbert transformer based on a phase-shifted waveguide Bragg grating. , 2013, , . | | 2 |
| 107 | Universal grating coupler design. Proceedings of SPIE, 2013, , . | 0.8 | 42 |
| 108 | Narrow-band waveguide Bragg gratings on SOI wafers with CMOS-compatible fabrication process. Optics Express, 2012, 20, 15547. | 3.4 | 246 |

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| 109 | Single-band add-drop filters using anti-reflection, contra-directional couplers. , 2012, , . | | 3 |
| 110 | Ring Resonator Optical Gyroscopesâ€™Parameter Optimization and Robustness Analysis. Journal of Lightwave Technology, 2012, 30, 1802-1817. | 4.6 | 42 |
| 111 | Lithography simulation for the fabrication of silicon photonic devices with deep-ultraviolet lithography. , 2012, , . | | 19 |
| 112 | Generation of steerable continuous-wave terahertz radiation using large-area photomixer. , 2012, , . | | 0 |
| 113 | Grating-coupled silicon microring resonators. Applied Physics Letters, 2012, 100, . | 3.3 | 60 |
| 114 | Uniform and Sampled Bragg Gratings in SOI Strip Waveguides with Sidewall Corrugations. IEEE Photonics Technology Letters, 2011, , . | 2.5 | 55 |
| 115 | Narrow-band transmission filter using phase-shifted Bragg gratings in SOI waveguide. , 2011, , . | | 24 |
| 116 | Ring Resonator Wavelength Division Multiplexing Interleaver. Journal of Lightwave Technology, 2011, 29, 2102-2109. | 4.6 | 32 |
| 117 | Contradirectional couplers in silicon-on-insulator rib waveguides. Optics Letters, 2011, 36, 3999. | 3.3 | 57 |
| 118 | Invited Paper: Design and modeling of a transistor vertical-cavity surface-emitting laser. Optical and Quantum Electronics, 2011, 42, 659-666. | 3.3 | 10 |
| 119 | Nano-engineered lenses. Nature Photonics, 2010, 4, 413-415. | 31.4 | 18 |
| 120 | Silicon-on-insulator Bragg gratings fabricated by deep UV lithography. , 2010, , . | | 7 |
| 121 | Modelling the effect of the feedback on the small signal modulation of the transistor laser. , 2010, , . | | 2 |
| 122 | Silicon Nanophotonics Fabrication: An innovative graduate course. , 2010, , . | | 1 |
| 123 | Interference effects on the frequency response of injection-locked VCSELs. , 2010, , . | | 0 |
| 124 | Self-consistent modeling of a transistor vertical-cavity surface-emitting laser. , 2010, , . | | 0 |
| 125 | Simulation of coupling between parallel SOI nanowaveguides and its dependence on temperature. , 2009, , . | | 4 |
| 126 | Analytical Modeling of the Transistor Laser. IEEE Journal of Selected Topics in Quantum Electronics, 2009, 15, 594-603. | 2.9 | 72 |

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| 127 | Numerical Study of the Optical Saturation and Voltage Control of a Transistor Vertical-Cavity Surface-Emitting Laser. IEEE Photonics Technology Letters, 2008, 20, 2141-2143. | 2.5 | 20 |
| 128 | Optically Injection-Locked VCSEL as a Duplex Transmitter/Receiver. IEEE Photonics Technology Letters, 2008, 20, 463-465. | 2.5 | 22 |
| 129 | Optical Absorption Glucose Measurements Using 2.3- μm Vertical-Cavity Semiconductor Lasers. IEEE Photonics Technology Letters, 2008, 20, 930-932. | 2.5 | 39 |
| 130 | Monolithic Injection-Locked High-Speed Semiconductor Ring Lasers. Journal of Lightwave Technology, 2008, 26, 3355-3362. | 4.6 | 36 |
| 131 | Small-signal modeling of the transistor laser including the quantum capture and escape lifetimes. Applied Physics Letters, 2008, 93, . | 3.3 | 23 |
| 132 | Common-emitter and common-base small-signal operation of the transistor laser. Applied Physics Letters, 2008, 93, . | 3.3 | 22 |
| 133 | Small-signal modeling of the transistor laser in common-emitter and common-base configurations. , 2008, , . | | 0 |
| 134 | Optically injection-locked VCSEL for bi-directional optical communication. , 2008, , . | | 0 |
| 135 | 40 GHz Bandwidth and 64 GHz Resonance Frequency in Injection-Locked 1.55 μm VCSELs. IEEE Journal of Selected Topics in Quantum Electronics, 2007, 13, 1200-1208. | 2.9 | 68 |
| 136 | Dual-Resonance Frequency Response in Injection-Locked 1.55 μm VCSELs. , 2007, , . | | 1 |
| 137 | 40 GHz Bandwidth and 64 GHz Resonance Frequency in Injection-Locked 1.55 μm VCSELs. , 2006, , . | | 2 |
| 138 | Improved Semiconductor-Laser Dynamics From Induced Population Pulsation. IEEE Journal of Quantum Electronics, 2006, 42, 552-562. | 1.9 | 49 |
| 139 | Modified Optical Heterodyne Down-Conversion System for Measuring Frequency Responses of Wideband Wavelength-Sensitive Electrooptical Devices. IEEE Photonics Technology Letters, 2006, 18, 2183-2185. | 2.5 | 0 |
| 140 | Resonant Grating Based Fabry-Perot Cavity in AlGaAs/GaAs. , 2006, , . | | 0 |
| 141 | Explanation for significantly improved VCSEL modulation bandwidth in strong optical injection experiments. , 2006, , . | | 0 |
| 142 | Finite-Size Resonant Sub-Wavelength Grating High Reflectivity Mirror. , 2006, , . | | 0 |
| 143 | Fabry-Perot Cavity Design in AlGaAs/GaAs using a Photonic Crystal Slab for a Resonant Cavity Detector. , 2006, , . | | 1 |
| 144 | Distributed-grating Wavelength Demultiplexer in SOI. , 2006, , . | | 4 |

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| 145 | A Novel Method for Fabrication of Free Standing Subwavelength Gratings in Gaas/Algaas. , 2006, , . | | 0 |