# Pavel Cheben

List of Publications by Year
in descending order

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| 109 | 5,312 | 117625 | 82547 |
|---|---|---|---|
| papers | citations | 34 h-index | 72 g-index |

| 109 | 109 | 109 | 2606 |
|---|---|---|---|
| all docs | docs citations | times ranked | citing authors |

| # | Article | IF | Citations |
|---|---|---|---|
| 1 | Subwavelength integrated photonics. Nature, 2018, 560, 565-572. | 27.8 | 594 |
| 2 | Waveguide subâ€wavelength structures: a review of principles and applications. Laser and Photonics Reviews, 2015, 9, 25-49. | 8.7 | 475 |
| 3 | Refractive index engineering with subwavelength gratings for efficient microphotonic couplers and planar waveguide multiplexers. Optics Letters, 2010, 35, 2526. | 3.3 | 311 |
| 4 | Subwavelength grating periodic structures in silicon-on-insulator: a new type of microphotonic waveguide. Optics Express, 2010, 18, 20251. | 3.4 | 278 |
| 5 | Subwavelength grating crossings for silicon wire waveguides. Optics Express, 2010, 18, 16146. | 3.4 | 220 |
| 6 | Waveguide grating coupler with subwavelength microstructures. Optics Letters, 2009, 34, 1408. | 3.3 | 190 |
| 7 | Broadband polarization independent nanophotonic coupler for silicon waveguides with ultra-high efficiency. Optics Express, 2015, 23, 22553. | 3.4 | 165 |
| 8 | Subwavelength-Grating Metamaterial Structures for Silicon Photonic Devices. Proceedings of the IEEE, 2018, 106, 2144-2157. | 21.3 | 155 |
| 9 | Ultraâ€broadband nanophotonic beamsplitter using an anisotropic subâ€wavelength metamaterial. Laser and Photonics Reviews, 2016, 10, 1039-1046. | 8.7 | 148 |
| 10 | Evanescent field waveguide sensing with subwavelength grating structures in silicon-on-insulator. Optics Letters, 2014, 39, 4442. | 3.3 | 143 |
| 11 | High-resolution Fourier-transform spectrometer chip with microphotonic silicon spiral waveguides. Optics Letters, 2013, 38, 706. | 3.3 | 116 |
| 12 | Multiaperture planar waveguide spectrometer formed by arrayed Mach-Zehnder interferometers. Optics Express, 2007, 15, 18176. | 3.4 | 106 |
| 13 | Subwavelength index engineered surface grating coupler with sub-decibel efficiency for 220-nm silicon-on-insulator waveguides. Optics Express, 2015, 23, 22628. | 3.4 | 106 |
| 14 | Mapping the global design space of nanophotonic components using machine learning pattern recognition. Nature Communications, 2019, 10, 4775. | 12.8 | 105 |
| 15 | Polarization splitter and rotator with subwavelength grating for enhanced fabrication tolerance. Optics Letters, 2014, 39, 6931. | 3.3 | 89 |
| 16 | High-directionality fiber-chip grating coupler with interleaved trenches and subwavelength index-matching structure. Optics Letters, 2015, 40, 4190. | 3.3 | 89 |
| 17 | Mid-Infrared Silicon-on-Insulator Fourier-Transform Spectrometer Chip. IEEE Photonics Technology Letters, 2016, 28, 528-531. | 2.5 | 84 |
| 18 | [INVITED] Subwavelength structures for silicon photonics biosensing. Optics and Laser Technology, 2019, 109, 437-448. | 4.6 | 79 |

| # | Article | IF | Citations |
|---|---|---|---|
| 19 | L-shaped fiber-chip grating couplers with high directionality and low reflectivity fabricated with deep-UV lithography. Optics Letters, 2017, 42, 3439. | 3.3 | 77 |
| 20 | Design of narrowband Bragg spectral filters in subwavelength grating metamaterial waveguides. Optics Express, 2018, 26, 179. | 3.4 | 74 |
| 21 | A review of silicon subwavelength gratings: building break-through devices with anisotropic metamaterials. Nanophotonics, 2021, 10, 2765-2797. | 6.0 | 70 |
| 22 | Demonstration of a compressive-sensing Fourier-transform on-chip spectrometer. Optics Letters, 2017, 42, 1440. | 3.3 | 69 |
| 23 | Fabrication tolerant and broadband polarization splitter and rotator based on a taper-etched directional coupler. Optics Express, 2014, 22, 17458. | 3.4 | 68 |
| 24 | Highâ€efficiency single etch step apodized surface grating coupler using subwavelength structure. Laser and Photonics Reviews, 2014, 8, L93. | 8.7 | 68 |
| 25 | Ultra-Broadband Mode Converter and Multiplexer Based on Sub-Wavelength Structures. IEEE Photonics Journal, 2018, 10, 1-10. | 2.0 | 65 |
| 26 | Controlling leakage losses in subwavelength grating silicon metamaterial waveguides. Optics Letters, 2016, 41, 3443. | 3.3 | 60 |
| 27 | Tilted subwavelength gratings: controlling anisotropy in metamaterial nanophotonic waveguides. Optics Letters, 2018, 43, 4691. | 3.3 | 60 |
| 28 | Wavelength-dispersive device based on a Fourier-transform Michelson-type arrayed waveguide grating. Optics Letters, 2005, 30, 1824. | 3.3 | 54 |
| 29 | An Ultracompact GRINâ€Lensâ€Based Spot Size Converter using Subwavelength Grating Metamaterials. Laser and Photonics Reviews, 2019, 13, 1900172. | 8.7 | 47 |
| 30 | Broadband fiber-chip zero-order surface grating coupler with 04â€‰â€‰dB efficiency. Optics Letters, 2016, 41, 3013. | 3.3 | 46 |
| 31 | Bragg filter bandwidth engineering in subwavelength grating metamaterial waveguides. Optics Letters, 2019, 44, 1043. | 3.3 | 41 |
| 32 | Single-etch subwavelength engineered fiber-chip grating couplers for 13 Âµm datacom wavelength band. Optics Express, 2016, 24, 12893. | 3.4 | 38 |
| 33 | Sub-decibel silicon grating couplers based on L-shaped waveguides and engineered subwavelength metamaterials. Optics Express, 2019, 27, 26239. | 3.4 | 38 |
| 34 | Archimedean spiral cavity ring resonators in silicon as ultra-compact optical comb filters. Optics Express, 2010, 18, 1937. | 3.4 | 37 |
| 35 | Subwavelength grating Fourierâ€transform interferometer array in siliconâ€onâ€insulator. Laser and Photonics Reviews, 2013, 7, L67. | 8.7 | 34 |
| 36 | Design of a Broadband Polarization Splitter Based on Anisotropy-Engineered Tilted Subwavelength Gratings. IEEE Photonics Journal, 2019, 11, 1-8. | 2.0 | 34 |

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| 37 | Perfectly vertical surface grating couplers using subwavelength engineering for increased feature sizes. Optics Letters, 2020, 45, 3701. | 3.3 | 34 |
| 38 | Athermal silicon waveguides with bridged subwavelength gratings for TE and TM polarizations. Optics Express, 2012, 20, 18356. | 3.4 | 32 |
| 39 | Temperature dependence mitigation in stationary Fourier-transform on-chip spectrometers. Optics Letters, 2017, 42, 2239. | 3.3 | 32 |
| 40 | Disorder effects in subwavelength grating metamaterial waveguides. Optics Express, 2017, 25, 12222. | 3.4 | 31 |
| 41 | Experimental demonstration of metamaterial anisotropy engineering for broadband on-chip polarization beam splitting. Optics Express, 2020, 28, 16385. | 3.4 | 31 |
| 42 | Demonstration of a curved sidewall grating demultiplexer on silicon. Optics Express, 2012, 20, 19882. | 3.4 | 30 |
| 43 | Ultra-broadband nanophotonic phase shifter based on subwavelength metamaterial waveguides. Photonics Research, 2020, 8, 359. | 7.0 | 28 |
| 44 | Sub-wavelength grating mode transformers in silicon slab waveguides. Optics Express, 2009, 17, 19120. | 3.4 | 27 |
| 45 | Demultiplexer with blazed waveguide sidewall grating and sub-wavelength grating structure. Optics Express, 2008, 16, 17616. | 3.4 | 26 |
| 46 | Polarization splitting directional coupler using tilted subwavelength gratings. Optics Letters, 2020, 45, 3398. | 3.3 | 26 |
| 47 | Polarization- and wavelength-agnostic nanophotonic beam splitter. Scientific Reports, 2019, 9, 3604. | 3.3 | 25 |
| 48 | Design of Compact and Efficient Silicon Photonic Micro Antennas With Perfectly Vertical Emission. IEEE Journal of Selected Topics in Quantum Electronics, 2021, 27, 1-10. | 2.9 | 24 |
| 49 | Compact and highly-efficient broadband surface grating antenna on a silicon platform. Optics Express, 2021, 29, 7003. | 3.4 | 24 |
| 50 | Highly efficient optical antenna with small beam divergence in silicon waveguides. Optics Letters, 2020, 45, 5668. | 3.3 | 24 |
| 51 | Compact and Low Crosstalk Echelle Grating Demultiplexer on Silicon-On-Insulator Technology. Electronics (Switzerland), 2019, 8, 687. | 3.1 | 23 |
| 52 | Narrowband Bragg filters based on subwavelength grating waveguides for silicon photonic sensing. Optics Express, 2020, 28, 37971. | 3.4 | 22 |
| 53 | Midâ€infrared suspended waveguide platform and building blocks. IET Optoelectronics, 2019, 13, 55-61. | 3.3 | 21 |
| 54 | Suspended germanium waveguides with subwavelength-grating metamaterial cladding for the mid-infrared band. Optics Express, 2021, 29, 16867. | 3.4 | 21 |

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| 55 | On-chip Fourier-transform spectrometers and machine learning: a new route to smart photonic sensors. Optics Letters, 2019, 44, 5840. | 3.3 | 21 |
| 56 | Complex spectral filters in silicon waveguides based on cladding-modulated Bragg gratings. Optics Express, 2021, 29, 15867. | 3.4 | 20 |
| 57 | Dual-Band Polarization-Independent Subwavelength Grating Coupler for Wavelength Demultiplexing. IEEE Photonics Technology Letters, 2020, 32, 1163-1166. | 2.5 | 19 |
| 58 | Bricked Subwavelength Gratings: A Tailorable Onâ€Chip Metamaterial Topology. Laser and Photonics Reviews, 2021, 15, 2000478. | 8.7 | 18 |
| 59 | Empirical model for the temperature dependence of silicon refractive index from O to C band based on waveguide measurements. Optics Express, 2019, 27, 27229. | 3.4 | 18 |
| 60 | Development of a Fourier-transform waveguide spectrometer for space applications. Optical and Quantum Electronics, 2012, 44, 549-556. | 3.3 | 17 |
| 61 | Millimeter-long metamaterial surface-emitting antenna in the silicon photonics platform. Optics Letters, 2021, 46, 3733. | 3.3 | 17 |
| 62 | Distributed Bragg deflector coupler for on-chip shaping of optical beams. Optics Express, 2019, 27, 33180. | 3.4 | 17 |
| 63 | High-Performance On-Chip Silicon Beamsplitter Based on Subwavelength Metamaterials for Enhanced Fabrication Tolerance. Nanomaterials, 2021, 11, 1304. | 4.1 | 16 |
| 64 | Breaking the Coupling Efficiencyâ€“Bandwidth Tradeâ€Off in Surface Grating Couplers Using Zeroâ€Order Radiation. Laser and Photonics Reviews, 2021, 15, 2000542. | 8.7 | 15 |
| 65 | Zero-Birefringence Silicon Waveguides Based on Tilted Subwavelength Metamaterials. IEEE Photonics Journal, 2019, 11, 1-8. | 2.0 | 14 |
| 66 | Broadband Fourier-transform silicon nitride spectrometer with wide-area multiaperture input. Optics Letters, 2021, 46, 4021. | 3.3 | 14 |
| 67 | Athermal echelle grating filter in silicon-on-insulator using a temperature-synchronized input. Optics Express, 2018, 26, 28651. | 3.4 | 14 |
| 68 | Group-index birefringence and loss measurements in silicon-on-insulator photonic wire waveguides. Optical Engineering, 2007, 46, 104602. | 1.0 | 12 |
| 69 | Dual-band fiber-chip grating coupler in a 300 mm silicon-on-insulator platform and 193 nm deep-UV lithography. Optics Letters, 2021, 46, 617. | 3.3 | 12 |
| 70 | Polarization-independent multimode interference coupler with anisotropy-engineered bricked metamaterial. Photonics Research, 2022, 10, A57. | 7.0 | 11 |
| 71 | Wideband Ge-Rich SiGe Polarization-Insensitive Waveguides for Mid-Infrared Free-Space Communications. Applied Sciences (Switzerland), 2018, 8, 1154. | 2.5 | 10 |
| 72 | Diffraction-less propagation beyond the sub-wavelength regime: a new type of nanophotonic waveguide. Scientific Reports, 2019, 9, 5347. | 3.3 | 10 |

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| 73 | Silicon photonic on-chip spatial heterodyne Fourier transform spectrometer exploiting the Jacquinotâ€™s advantage. Optics Letters, 2021, 46, 1341. | 3.3 | 10 |
| 74 | Subwavelength grating metamaterial waveguides functionalized with tellurium oxide cladding. Optics Express, 2020, 28, 18538. | 3.4 | 10 |
| 75 | Subwavelength grating structures in planar waveguide facets for modified reflectivity. , 2007, , . | | 9 |
| 76 | Metamaterial engineered silicon photonic coupler for whispering gallery mode microsphere and disk resonators. Optica, 2021, 8, 1511. | 9.3 | 9 |
| 77 | Metamaterial-Engineered Silicon Beam Splitter Fabricated with Deep UV Immersion Lithography. Nanomaterials, 2021, 11, 2949. | 4.1 | 9 |
| 78 | Mid-infrared Fourier-transform spectrometer based on metamaterial lateral cladding suspended silicon waveguides. Optics Letters, 2022, 47, 810. | 3.3 | 9 |
| 79 | High-efficiency conversion from waveguide mode to an on-chip beam using a metamaterial engineered Bragg deflector. Optics Letters, 2021, 46, 2409. | 3.3 | 8 |
| 80 | Spectrum-free integrated photonic remote molecular identification and sensing. Optics Express, 2020, 28, 27951. | 3.4 | 8 |
| 81 | Mode Converter and Multiplexer With a Subwavelength Phase Shifter for Extended Broadband Operation. IEEE Photonics Technology Letters, 2021, 33, 1262-1265. | 2.5 | 7 |
| 82 | Circular Optical Phased Arrays with Radial Nano-Antennas. Nanomaterials, 2022, 12, 1938. | 4.1 | 7 |
| 83 | Ultra-wideband dual-polarization silicon nitride power splitter based on modal engineered slot waveguides. Optics Letters, 2020, 45, 527. | 3.3 | 6 |
| 84 | Photonic temperature and wavelength metrology by spectral pattern recognition. Optics Express, 2020, 28, 17409. | 3.4 | 5 |
| 85 | Anti-reflection subwavelength gratings for InP-based waveguide facets. Optics Letters, 2021, 46, 3701. | 3.3 | 4 |
| 86 | Onâ€Chip Metamaterial Antenna Array with Distributed Bragg Deflector for Generation of Collimated Steerable Beams. Laser and Photonics Reviews, 2022, 16, . | 8.7 | 4 |
| 87 | Low-loss off-axis curved waveguide grating demultiplexer. Optics Letters, 2021, 46, 4821. | 3.3 | 3 |
| 88 | Echelle and Arrayed Waveguide Gratings for WDM and Spectral Analysis. , 0, , 599-632. | | 3 |
| 89 | Fiber Fabryâ€“Perot astrophotonic correlation spectroscopy for remote gas identification and radial velocity measurements. Applied Optics, 2021, 60, 10252. | 1.8 | 3 |
| 90 | Athermal echelle grating and tunable echelle grating demultiplexers using a Mach-Zehnder interferometer launch structure. Optics Express, 2022, 30, 14202. | 3.4 | 3 |

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|---|---|---|---|
| 91 | Design of compact silicon antennas based on high directionality gratings. , 2020, , . | | 1 |
| 92 | Dispersion-engineered nanophotonic devices based on subwavelength metamaterial waveguides. , 2020, , . | | 1 |
| 93 | Efficient Bloch mode calculation of periodic systems with arbitrary geometry and open boundary conditions in the complex wavevector domain. Optics Express, 2021, 29, 26233. | 3.4 | 1 |
| 94 | Subwavelength-engineered metamaterial devices for integrated photonics. , 2022, , . | | 1 |
| 95 | UV-written silicon nitride integrated optical phased arrays. , 2022, , . | | 1 |
| 96 | Integrated metamaterial surface-emitting antenna for beam steering applications. , 2021, , . | | 1 |
| 97 | Machine learning design of subwavelengh integrated photonic devices. , 2019, , . | | 0 |
| 98 | Machine learning pattern recognition in integrated silicon photonics design. , 2020, , . | | 0 |
| 99 | Metamaterial engineered C+L band 90Â° hybrid with 150 nm feature size. , 2020, , . | | 0 |
| 100 | Integrated Photonic Ring Resonator Correlation Filters For Remote HCN Sensing. , 2020, , . | | 0 |
| 101 | Astrophotonic Absorption Correlation Spectroscopy using Silicon Microring Resonators. , 2021, , . | | 0 |
| 102 | Dimensionality reduction for the on-chip integration of advanced photonic devices and functionalities. , 2021, , . | | 0 |
| 103 | Integrated circular optical phased array. EPJ Web of Conferences, 2021, 255, 01004. | 0.3 | 0 |
| 104 | Building high-performance integrated optical devices using subwavelength grating metamaterials -INVITED. EPJ Web of Conferences, 2021, 255, 01001. | 0.3 | 0 |
| 105 | Y-junction power splitter engineered through subwavelength metamaterials. , 2020, , . | | 0 |
| 106 | Combining micro-optics and integrated optics: a case study on bulk resonators. , 2022, , . | | 0 |
| 107 | Deep-learning algorithms for imperfection-resilient Fourier-transform spectroscopy in silicon. , 2021, , . | | 0 |
| 108 | Silicon nitride on-chip spatial heterodyne Fourier-transform spectrometer with high Ã©tendue and broadband operation. , 2021, , . | | 0 |

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| 109 | Bricked patterning: a new concept to enhance the capabilities of subwavelength grating waveguides. , 2021, , . | | 0 |