

# Pavel Cheben

## List of Publications by Year in descending order

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109  
papers

5,312  
citations

117453

34  
h-index

82410

72  
g-index

109  
all docs

109  
docs citations

109  
times ranked

2606  
citing authors

#	ARTICLE	IF	CITATIONS
1	Polarization-independent multimode interference coupler with anisotropy-engineered bricked metamaterial. Photonics Research, 2022, 10, A57.	3.4	11
2	Mid-infrared Fourier-transform spectrometer based on metamaterial lateral cladding suspended silicon waveguides. Optics Letters, 2022, 47, 810.	1.7	9
3	Combining micro-optics and integrated optics: a case study on bulk resonators. , 2022, , .		0
4	Subwavelength-engineered metamaterial devices for integrated photonics. , 2022, , .		1
5	UV-written silicon nitride integrated optical phased arrays. , 2022, , .		1
6	Athermal echelle grating and tunable echelle grating demultiplexers using a Mach-Zehnder interferometer launch structure. Optics Express, 2022, 30, 14202.	1.7	3
7	Circular Optical Phased Arrays with Radial Nano-Antennas. Nanomaterials, 2022, 12, 1938.	1.9	7
8	On-Chip Metamaterial Antenna Array with Distributed Bragg Deflector for Generation of Collimated Steerable Beams. Laser and Photonics Reviews, 2022, 16, .	4.4	4
9	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.	1.9	24
10	Mode Converter and Multiplexer With a Subwavelength Phase Shifter for Extended Broadband Operation. IEEE Photonics Technology Letters, 2021, 33, 1262-1265.	1.3	7
11	Dual-band fiber-chip grating coupler in a 300 nm silicon-on-insulator platform and 193 nm deep-UV lithography. Optics Letters, 2021, 46, 617.	1.7	12
12	Compact and highly-efficient broadband surface grating antenna on a silicon platform. Optics Express, 2021, 29, 7003.	1.7	24
13	Silicon photonic on-chip spatial heterodyne Fourier transform spectrometer exploiting the Jacquinot's advantage. Optics Letters, 2021, 46, 1341.	1.7	10
14	High-Performance On-Chip Silicon Beamsplitter Based on Subwavelength Metamaterials for Enhanced Fabrication Tolerance. Nanomaterials, 2021, 11, 1304.	1.9	16
15	Bricked Subwavelength Gratings: A Tailorable On-Chip Metamaterial Topology. Laser and Photonics Reviews, 2021, 15, 2000478.	4.4	18
16	Complex spectral filters in silicon waveguides based on cladding-modulated Bragg gratings. Optics Express, 2021, 29, 15867.	1.7	20
17	High-efficiency conversion from waveguide mode to an on-chip beam using a metamaterial engineered Bragg deflector. Optics Letters, 2021, 46, 2409.	1.7	8
18	Suspended germanium waveguides with subwavelength-grating metamaterial cladding for the mid-infrared band. Optics Express, 2021, 29, 16867.	1.7	21

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19	Breaking the Coupling Efficiency–Bandwidth Trade-Off in Surface Grating Couplers Using Zero-Order Radiation. Laser and Photonics Reviews, 2021, 15, 2000542.	4.4	15
20	Efficient Bloch mode calculation of periodic systems with arbitrary geometry and open boundary conditions in the complex wavevector domain. Optics Express, 2021, 29, 26233.	1.7	1
21	Anti-reflection subwavelength gratings for InP-based waveguide facets. Optics Letters, 2021, 46, 3701.	1.7	4
22	Millimeter-long metamaterial surface-emitting antenna in the silicon photonics platform. Optics Letters, 2021, 46, 3733.	1.7	17
23	Broadband Fourier-transform silicon nitride spectrometer with wide-area multiaperture input. Optics Letters, 2021, 46, 4021.	1.7	14
24	A review of silicon subwavelength gratings: building break-through devices with anisotropic metamaterials. Nanophotonics, 2021, 10, 2765-2797.	2.9	70
25	Low-loss off-axis curved waveguide grating demultiplexer. Optics Letters, 2021, 46, 4821.	1.7	3
26	Fiber Fabry–Perot astrophotonic correlation spectroscopy for remote gas identification and radial velocity measurements. Applied Optics, 2021, 60, 10252.	0.9	3
27	Metamaterial engineered silicon photonic coupler for whispering gallery mode microsphere and disk resonators. Optica, 2021, 8, 1511.	4.8	9
28	Metamaterial-Engineered Silicon Beam Splitter Fabricated with Deep UV Immersion Lithography. Nanomaterials, 2021, 11, 2949.	1.9	9
29	Astrophotonic Absorption Correlation Spectroscopy using Silicon Microring Resonators. , 2021, , .		0
30	Dimensionality reduction for the on-chip integration of advanced photonic devices and functionalities. , 2021, , .		0
31	Integrated circular optical phased array. EPJ Web of Conferences, 2021, 255, 01004.	0.1	0
32	Building high-performance integrated optical devices using subwavelength grating metamaterials -INVITED. EPJ Web of Conferences, 2021, 255, 01001.	0.1	0
33	Deep-learning algorithms for imperfection-resilient Fourier-transform spectroscopy in silicon. , 2021, , .		0
34	Silicon nitride on-chip spatial heterodyne Fourier-transform spectrometer with high Åtendue and broadband operation. , 2021, , .		0
35	Integrated metamaterial surface-emitting antenna for beam steering applications. , 2021, , .		1
36	Bricked patterning: a new concept to enhance the capabilities of subwavelength grating waveguides. , 2021, , .		0

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37	Dual-Band Polarization-Independent Subwavelength Grating Coupler for Wavelength Demultiplexing. IEEE Photonics Technology Letters, 2020, 32, 1163-1166.	1.3	19
38	Machine learning pattern recognition in integrated silicon photonics design. , 2020, , .		0
39	Metamaterial engineered C+L band 90° hybrid with 150 nm feature size. , 2020, , .		0
40	Integrated Photonic Ring Resonator Correlation Filters For Remote HCN Sensing. , 2020, , .		0
41	Design of compact silicon antennas based on high directionality gratings. , 2020, , .		1
42	Dispersion-engineered nanophotonic devices based on subwavelength metamaterial waveguides. , 2020, , .		1
43	Experimental demonstration of metamaterial anisotropy engineering for broadband on-chip polarization beam splitting. Optics Express, 2020, 28, 16385.	1.7	31
44	Subwavelength grating metamaterial waveguides functionalized with tellurium oxide cladding. Optics Express, 2020, 28, 18538.	1.7	10
45	Photonic temperature and wavelength metrology by spectral pattern recognition. Optics Express, 2020, 28, 17409.	1.7	5
46	Narrowband Bragg filters based on subwavelength grating waveguides for silicon photonic sensing. Optics Express, 2020, 28, 37971.	1.7	22
47	Ultra-wideband dual-polarization silicon nitride power splitter based on modal engineered slot waveguides. Optics Letters, 2020, 45, 527.	1.7	6
48	Polarization splitting directional coupler using tilted subwavelength gratings. Optics Letters, 2020, 45, 3398.	1.7	26
49	Perfectly vertical surface grating couplers using subwavelength engineering for increased feature sizes. Optics Letters, 2020, 45, 3701.	1.7	34
50	Highly efficient optical antenna with small beam divergence in silicon waveguides. Optics Letters, 2020, 45, 5668.	1.7	24
51	Ultra-broadband nanophotonic phase shifter based on subwavelength metamaterial waveguides. Photonics Research, 2020, 8, 359.	3.4	28
52	Spectrum-free integrated photonic remote molecular identification and sensing. Optics Express, 2020, 28, 27951.	1.7	8
53	Y-junction power splitter engineered through subwavelength metamaterials. , 2020, , .		0
54	Compact and Low Crosstalk Echelle Grating Demultiplexer on Silicon-On-Insulator Technology. Electronics (Switzerland), 2019, 8, 687.	1.8	23

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55	An Ultracompact GRINâ€Lensâ€Based Spot Size Converter using Subwavelength Grating Metamaterials. Laser and Photonics Reviews, 2019, 13, 1900172.	4.4	47
56	Mapping the global design space of nanophotonic components using machine learning pattern recognition. Nature Communications, 2019, 10, 4775.	5.8	105
57	Zero-Birefringence Silicon Waveguides Based on Tilted Subwavelength Metamaterials. IEEE Photonics Journal, 2019, 11, 1-8.	1.0	14
58	Sub-decibel silicon grating couplers based on L-shaped waveguides and engineered subwavelength metamaterials. Optics Express, 2019, 27, 26239.	1.7	38
59	Machine learning design of subwavelength integrated photonic devices. , 2019, , .		0
60	Design of a Broadband Polarization Splitter Based on Anisotropy-Engineered Tilted Subwavelength Gratings. IEEE Photonics Journal, 2019, 11, 1-8.	1.0	34
61	Polarization- and wavelength-agnostic nanophotonic beam splitter. Scientific Reports, 2019, 9, 3604.	1.6	25
62	Diffraction-less propagation beyond the sub-wavelength regime: a new type of nanophotonic waveguide. Scientific Reports, 2019, 9, 5347.	1.6	10
63	[INVITED] Subwavelength structures for silicon photonics biosensing. Optics and Laser Technology, 2019, 109, 437-448.	2.2	79
64	Midâ€Infrared suspended waveguide platform and building blocks. IET Optoelectronics, 2019, 13, 55-61.	1.8	21
65	Empirical model for the temperature dependence of silicon refractive index from O to C band based on waveguide measurements. Optics Express, 2019, 27, 27229.	1.7	18
66	Distributed Bragg deflector coupler for on-chip shaping of optical beams. Optics Express, 2019, 27, 33180.	1.7	17
67	Bragg filter bandwidth engineering in subwavelength grating metamaterial waveguides. Optics Letters, 2019, 44, 1043.	1.7	41
68	On-chip Fourier-transform spectrometers and machine learning: a new route to smart photonic sensors. Optics Letters, 2019, 44, 5840.	1.7	21
69	Ultra-Broadband Mode Converter and Multiplexer Based on Sub-Wavelength Structures. IEEE Photonics Journal, 2018, 10, 1-10.	1.0	65
70	Tilted subwavelength gratings: controlling anisotropy in metamaterial nanophotonic waveguides. Optics Letters, 2018, 43, 4691.	1.7	60
71	Wideband Ge-Rich SiGe Polarization-Insensitive Waveguides for Mid-Infrared Free-Space Communications. Applied Sciences (Switzerland), 2018, 8, 1154.	1.3	10
72	Subwavelength integrated photonics. Nature, 2018, 560, 565-572.	13.7	594

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73	Design of narrowband Bragg spectral filters in subwavelength grating metamaterial waveguides. Optics Express, 2018, 26, 179.	1.7	74
74	Subwavelength-Grating Metamaterial Structures for Silicon Photonic Devices. Proceedings of the IEEE, 2018, 106, 2144-2157.	16.4	155
75	Athermal echelle grating filter in silicon-on-insulator using a temperature-synchronized input. Optics Express, 2018, 26, 28651.	1.7	14
76	Disorder effects in subwavelength grating metamaterial waveguides. Optics Express, 2017, 25, 12222.	1.7	31
77	L-shaped fiber-chip grating couplers with high directionality and low reflectivity fabricated with deep-UV lithography. Optics Letters, 2017, 42, 3439.	1.7	77
78	Temperature dependence mitigation in stationary Fourier-transform on-chip spectrometers. Optics Letters, 2017, 42, 2239.	1.7	32
79	Demonstration of a compressive-sensing Fourier-transform on-chip spectrometer. Optics Letters, 2017, 42, 1440.	1.7	69
80	Single-etch subwavelength engineered fiber-chip grating couplers for 13 Åµm datacom wavelength band. Optics Express, 2016, 24, 12893.	1.7	38
81	Broadband fiber-chip zero-order surface grating coupler with 04â€™%â€™%dB efficiency. Optics Letters, 2016, 41, 3013.	1.7	46
82	Controlling leakage losses in subwavelength grating silicon metamaterial waveguides. Optics Letters, 2016, 41, 3443.	1.7	60
83	Ultraâ€™broadband nanophotonic beamsplitter using an anisotropic subâ€™wavelength metamaterial. Laser and Photonics Reviews, 2016, 10, 1039-1046.	4.4	148
84	Mid-Infrared Silicon-on-Insulator Fourier-Transform Spectrometer Chip. IEEE Photonics Technology Letters, 2016, 28, 528-531.	1.3	84
85	Waveguide subâ€™wavelength structures: a review of principles and applications. Laser and Photonics Reviews, 2015, 9, 25-49.	4.4	475
86	Broadband polarization independent nanophotonic coupler for silicon waveguides with ultra-high efficiency. Optics Express, 2015, 23, 22553.	1.7	165
87	High-directionality fiber-chip grating coupler with interleaved trenches and subwavelength index-matching structure. Optics Letters, 2015, 40, 4190.	1.7	89
88	Subwavelength index engineered surface grating coupler with sub-decibel efficiency for 220-nm silicon-on-insulator waveguides. Optics Express, 2015, 23, 22628.	1.7	106
89	Fabrication tolerant and broadband polarization splitter and rotator based on a taper-etched directional coupler. Optics Express, 2014, 22, 17458.	1.7	68
90	Evanescent field waveguide sensing with subwavelength grating structures in silicon-on-insulator. Optics Letters, 2014, 39, 4442.	1.7	143

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91	Polarization splitter and rotator with subwavelength grating for enhanced fabrication tolerance. Optics Letters, 2014, 39, 6931.	1.7	89
92	High-efficiency single etch step apodized surface grating coupler using subwavelength structure. Laser and Photonics Reviews, 2014, 8, L93.	4.4	68
93	Subwavelength grating Fourier-transform interferometer array in silicon-on-insulator. Laser and Photonics Reviews, 2013, 7, L67.	4.4	34
94	High-resolution Fourier-transform spectrometer chip with microphotonic silicon spiral waveguides. Optics Letters, 2013, 38, 706.	1.7	116
95	Demonstration of a curved sidewall grating demultiplexer on silicon. Optics Express, 2012, 20, 19882.	1.7	30
96	Athermal silicon waveguides with bridged subwavelength gratings for TE and TM polarizations. Optics Express, 2012, 20, 18356.	1.7	32
97	Development of a Fourier-transform waveguide spectrometer for space applications. Optical and Quantum Electronics, 2012, 44, 549-556.	1.5	17
98	Subwavelength grating crossings for silicon wire waveguides. Optics Express, 2010, 18, 16146.	1.7	220
99	Subwavelength grating periodic structures in silicon-on-insulator: a new type of microphotonic waveguide. Optics Express, 2010, 18, 20251.	1.7	278
100	Refractive index engineering with subwavelength gratings for efficient microphotonic couplers and planar waveguide multiplexers. Optics Letters, 2010, 35, 2526.	1.7	311
101	Archimedean spiral cavity ring resonators in silicon as ultra-compact optical comb filters. Optics Express, 2010, 18, 1937.	1.7	37
102	Waveguide grating coupler with subwavelength microstructures. Optics Letters, 2009, 34, 1408.	1.7	190
103	Sub-wavelength grating mode transformers in silicon slab waveguides. Optics Express, 2009, 17, 19120.	1.7	27
104	Demultiplexer with blazed waveguide sidewall grating and sub-wavelength grating structure. Optics Express, 2008, 16, 17616.	1.7	26
105	Group-index birefringence and loss measurements in silicon-on-insulator photonic wire waveguides. Optical Engineering, 2007, 46, 104602.	0.5	12
106	Subwavelength grating structures in planar waveguide facets for modified reflectivity. , 2007, , .		9
107	Multiaperture planar waveguide spectrometer formed by arrayed Mach-Zehnder interferometers. Optics Express, 2007, 15, 18176.	1.7	106
108	Wavelength-dispersive device based on a Fourier-transform Michelson-type arrayed waveguide grating. Optics Letters, 2005, 30, 1824.	1.7	54

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109	Echelle and Arrayed Waveguide Gratings for WDM and Spectral Analysis. , 0, , 599-632.		3