Masaya Notomi

List of Publications by Year
in descending order

90 papers	6,567 citations	109321 35 h-index	76900 74 g-index
90 all docs	90 docs citations	90 times ranked	4577 citing authors

#	Article	IF	Citations
1	Sub-femtojoule all-optical switching using a photonic-crystal nanocavity. Nature Photonics, 2010, 4, 477-483.	31.4	595
2	Optical bistable switching action of Si high-Q photonic-crystal nanocavities. Optics Express, 2005, 13, 2678.	3.4	449
3	Ultrahigh-Q photonic crystal nanocavities realized by the local width modulation of a line defect. Applied Physics Letters, 2006, 88, 041112.	3.3	419
4	Trapping and delaying photons for one nanosecond in an ultrasmall high-Q photonic-crystal nanocavity. Nature Photonics, 2007, 1, 49-52.	31.4	360
5	All-optical switches on a silicon chip realized using photonic crystal nanocavities. Applied Physics Letters, 2005, 87, 151112.	3.3	352
6	Manipulating light with strongly modulated photonic crystals. Reports on Progress in Physics, 2010, 73, 096501.	20.1	325
7	High-speed ultracompact buried heterostructure photonic-crystal laser with 13ÂfJ of energy consumed per bit transmitted. Nature Photonics, 2010, 4, 648-654.	31.4	300
8	Fast bistable all-optical switch and memory on a silicon photonic crystal on-chip. Optics Letters, 2005, 30, 2575.	3.3	286
9	Large-scale integration of wavelength-addressable all-optical memories on a photonic crystal chip. Nature Photonics, 2014, 8, 474-481.	31.4	270
10	Ultrafast and energy-efficient all-optical switching with graphene-loaded deep-subwavelength plasmonic waveguides. Nature Photonics, 2020, 14, 37-43.	31.4	258
11	Ultralow-power all-optical RAM based on nanocavities. Nature Photonics, 2012, 6, 248-252.	31.4	243
12	Few-fJ/bit data transmissions using directly modulated lambda-scale embedded active region photonic-crystal lasers. Nature Photonics, 2013, 7, 569-575.	31.4	206
13	Photonic Topological Insulating Phase Induced Solely by Gain and Loss. Physical Review Letters, 2018, 121, 213902.	7.8	202
14	Active topological photonics. Nanophotonics, 2020, 9, 547-567.	6.0	170
15	Fast all-optical switching using ion-implanted silicon photonic crystal nanocavities. Applied Physics Letters, 2007, 90, 031115.	3.3	155
16	Novel frontier of photonics for data processingâ€"Photonic accelerator. APL Photonics, 2019, 4, 090901.	5.7	127
17	Low power and fast electro-optic silicon modulator with lateral p-i-n embedded photonic crystal nanocavity. Optics Express, 2009, 17, 22505.	3.4	108
18	Extremely low power optical bistability in silicon demonstrated using 1D photonic crystal nanocavity. Optics Express, 2009, 17, 21108.	3.4	104

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19	Movable high-Q nanoresonators realized by semiconductor nanowires on a Si photonic crystal platform. Nature Materials, 2014, 13, 279-285.	27.5	94
20	Generation and Annihilation of Topologically Protected Bound States in the Continuum and Circularly Polarized States by Symmetry Breaking. Physical Review Letters, 2020, 125, 053902.	7.8	93
21	Femtofarad optoelectronic integration demonstrating energy-saving signal conversion and nonlinear functions. Nature Photonics, 2019, 13, 454-459.	31.4	84
22	All-optical on-chip bit memory based on ultra high Q InGaAsP photonic crystal. Optics Express, 2008, 16, 19382.	3.4	69
23	Carrier Diffusion and Recombination in Photonic Crystal Nanocavity Optical Switches. Journal of Lightwave Technology, 2008, 26, 1396-1403.	4.6	68
24	Ultralow Operating Energy Electrically Driven Photonic Crystal Lasers. IEEE Journal of Selected Topics in Quantum Electronics, 2013, 19, 4900311-4900311.	2.9	68
25	Telecom-band lasing in single InP/InAs heterostructure nanowires at room temperature. Science Advances, 2019, 5, eaat8896.	10.3	68
26	Photonic-crystal nano-photodetector with ultrasmall capacitance for on-chip light-to-voltage conversion without an amplifier. Optica, 2016, 3, 483.	9.3	65
27	Deep-subwavelength plasmonic mode converter with large size reduction for Si-wire waveguide. Optica, 2016, 3, 999.	9.3	61
28	Slow light enhanced optical nonlinearity in a silicon photonic crystal coupled-resonator optical waveguide. Optics Express, 2011, 19, 19861.	3.4	60
29	Continuous-wave operation and 10-Gb/s direct modulation of InAsP/InP sub-wavelength nanowire laser on silicon photonic crystal. APL Photonics, 2017, 2, .	5.7	60
30	Toward fJ/bit optical communication in a chip. Optics Communications, 2014, 314, 3-17.	2.1	58
31	On-demand ultrahigh-Q cavity formation and photon pinning via dynamic waveguide tuning. Optics Express, 2008, 16, 18657.	3.4	57
32	Single point defect photonic crystal nanocavity with ultrahigh quality factor achieved by using hexapole mode. Applied Physics Letters, 2007, 91, 021110.	3.3	43
33	All-Optical InAsP/InP Nanowire Switches Integrated in a Si Photonic Crystal. ACS Photonics, 2020, 7, 1016-1021.	6.6	42
34	Systematic study of thresholdless oscillation in high-Î² buried multiple-quantum-well photonic crystal nanocavity lasers. Optics Express, 2016, 24, 3441.	3.4	39
35	Subwavelength Nanowire Lasers on a Silicon Photonic Crystal Operating at Telecom Wavelengths. ACS Photonics, 2017, 4, 355-362.	6.6	35
36	Systematic hole-shifting of L-type nanocavity with an ultrahigh Q factor. Optics Letters, 2014, 39, 5780.	3.3	31

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37	Photonic Crystal Lasers for Chip-to-Chip and On-Chip Optical Interconnects. IEEE Journal of Selected Topics in Quantum Electronics, 2015, 21, 728-737.	2.9	30
38	Nanomanipulating and Tuning Ultraviolet ZnO-Nanowire-Induced Photonic Crystal Nanocavities. ACS Photonics, 2017, 4, 1040-1047.	6.6	30
39	InGaAs nano-photodetectors based on photonic crystal waveguide including ultracompact buried heterostructure. Optics Express, 2013, 21, 19022.	3.4	26
40	Ultralow-energy electro-absorption modulator consisting of InGaAsP-embedded photonic-crystal waveguide. APL Photonics, 2017, 2, .	5.7	25
41	Mid-Infrared Lasing of Single Wurtzite InAs Nanowire. Nano Letters, 2019, 19, 8059-8065.	9.1	22
42	Observing exceptional point degeneracy of radiation with electrically pumped photonic crystal coupled-nanocavity lasers. Optica, 2021, 8, 184.	9.3	22
43	All-optical switching for 10-Gb/s packet data by using an ultralow-power optical bistability of photonic-crystal nanocavities. Optics Express, 2015, 23, 30379.	3.4	21
44	Direct modulation of a single InP/InAs nanowire light-emitting diode. Applied Physics Letters, 2018, 112, .	3.3	21
45	<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mi mathvariant="script">P</mml:mi><mml:mi mathvariant="script">T</mml:mi></mml:mrow></mml:math> -Symmetric Coupled-Resonator Waveguide Based on Buried Heterostructure Nanocavities. Physical Review Applied, 2017, 7, .	3.8	20
46	Design for ultrahigh-Q position-controlled nanocavities of single semiconductor nanowires in two-dimensional photonic crystals. Journal of Applied Physics, 2012, 112, .	2.5	19
47	An Integrated Nanophotonic Parallel Adder. ACM Journal on Emerging Technologies in Computing Systems, 2018, 14, 1-20.	2.3	17
48	Lasing thresholds and photon statistics in high- <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>Î²</mml:mi></mml:math> buried multiple quantum well photonic crystal nanocavity lasers. Physical Review A, 2019, 99, .	2.5	17
49	Subliming GaN into Ordered Nanowire Arrays for Ultraviolet and Visible Nanophotonics. ACS Photonics, 2019, 6, 3321-3330.	6.6	17
50	Enhanced and suppressed spontaneous emission from a buried heterostructure photonic crystal cavity. Applied Physics Letters, 2013, 103, .	3.3	16
51	Controlled 1.1â€"1.6<i>Î¼</i>m luminescence in gold-free multi-stacked InAs/InP heterostructure nanowires. Nanotechnology, 2015, 26, 115704.	2.6	16
52	Design of nanowire-induced nanocavities in grooved 1D and 2D SiN photonic crystals for the ultra-violet and visible ranges. Optics Express, 2016, 24, 26792.	3.4	16
53	Hybrid Nanowire Photodetector Integrated in a Silicon Photonic Crystal. ACS Photonics, 2020, 7, 3467-3473.	6.6	15
54	Quality factor control and lasing characteristics of InAs/InGaAs quantum dots embedded in photonic-crystal nanocavities. Optics Express, 2008, 16, 5199.	3.4	14

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55	Imaginary couplings in non-Hermitian coupled-mode theory: Effects on exceptional points of optical resonators. Physical Review A, 2022, 105, .	2.5	14
56	Amplifier-Free Bias-Free Receiver Based on Low-Capacitance Nanophotodetector. IEEE Journal of Selected Topics in Quantum Electronics, 2018, 24, 1-11.	2.9	13
57	Lasing up to 380â€‰K in a sublimated GaN nanowire. Applied Physics Letters, 2020, 116, .	3.3	13
58	Nanowire-nanoantenna coupled system fabricated by nanomanipulation. Optics Express, 2016, 24, 8647.	3.4	12
59	Ultralow bias power all-optical photonic crystal memory realized with systematically tuned L3 nanocavity. Applied Physics Letters, 2015, 107, .	3.3	11
60	ZnO-Nanowire-Induced Nanocavities in Photonic Crystal Disks. ACS Photonics, 2019, 6, 1132-1138.	6.6	11
61	Low- and high-Î² lasers in the class-A limit: photon statistics, linewidth, and the laser-phase transition analogy. Journal of the Optical Society of America B: Optical Physics, 2021, 38, 699.	2.1	11
62	Room temperature continuous-wave nanolaser diode utilized by ultrahigh-Q few-cell photonic crystal nanocavities. Optics Express, 2018, 26, 26598.	3.4	10
63	Nanowire photonics toward wide wavelength range and subwavelength confinement [Invited]. Optical Materials Express, 2020, 10, 2560.	3.0	10
64	Forward-biased nanophotonic detector for ultralow-energy dissipation receiver. APL Photonics, 2018, 3, .	5.7	9
65	Far-field optical imaging of topological edge states in zigzag plasmonic chains. Nanophotonics, 2022, 11, 2183-2189.	6.0	8
66	Thermal effect of InP/InAs nanowire lasers integrated on different optical platforms. OSA Continuum, 2021, 4, 1838.	1.8	7
67	Designs toward synchronization of optical limit cycles with coupled silicon photonic crystal microcavities. Optics Express, 2020, 28, 27657.	3.4	7
68	An Optical Neural Network Architecture based on Highly Parallelized WDM-Multiplier-Accumulator. , 2019, , .		6
69	Low-Threshold Lasing up to 360 K in All-Dielectric Subwavelength-Nanowire Nanocavities. ACS Photonics, 2020, 7, 1104-1110.	6.6	5
70	Emulating the local Kuramoto model with an injection-locked photonic crystal laser array. Scientific Reports, 2021, 11, 8587.	3.3	5
71	All-Optical Switching using a III-V Nanowire Integrated Si Photonic Crystal Nanocavity. , 2019, , .		4
72	A Synthesis Method for Power-Efficient Integrated Optical Logic Circuits Towards Light Speed Processing. , 2020, , .		4

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73	Topology in momentum space becomes real. Nature Photonics, 2020, 14, 595-596.	31.4	4
74	Photon-correlation measurements of stochastic limit cycles emerging from high- <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>Q</mml:mi></mml:math> nonlinear silicon photonic crystal microcavities. Physical Review A, 2020, 102, .	2.5	4
75	Ultracompact O-E-O converter based on fF-capacitance nanophotonic integration. , 2018, , .		4
76	Design of nanowire-induced nanocavities in photonic crystal disks. Optics Letters, 2017, 42, 5121.	3.3	3
77	Chain mail reverses the Hall effect. Nature, 2017, 544, 44-45.	27.8	1
78	A Synthesis Method Based on Multi-Stage Optimization for Power-Efficient Integrated Optical Logic Circuits. IEICE Transactions on Fundamentals of Electronics, Communications and Computer Sciences, 2021, E104.A, 1546-1554.	0.3	1
79	Efficient Automated Nanocavity Optimization by Direct Use of Finite Element Method Computation. , 2020, , .		1
80	Tamper-Resistant Optical Logic Circuits Based on Integrated Nanophotonics. , 2021, , .		1
81	Connecting deep sub-wavelength plasmonic waveguide to Si photonics waveguides. , 2015, , .		0
82	High signal-to-noise ratio for high-impedance-loaded nano-photodetector toward attojoule optical reception. Applied Physics Letters, 2019, 115, 251107.	3.3	0
83	Experimental observation of bound states in the continuum generated by spatial symmetry breaking. , 2021, , .		0
84	Excitonic nonlinear shifts in photonic crystal nanocavities with buried multiple quantum wells. Applied Physics Letters, 2021, 118, 111101.	3.3	0
85	Neural Network Calculations at the Speed of Light Using Optical Vector-Matrix Multiplication and Optoelectronic Activation. IEICE Transactions on Fundamentals of Electronics, Communications and Computer Sciences, 2021, E104.A, .	0.3	0
86	All-optical switching with graphene-loaded plasmonic waveguides in the femtojoule and femtosecond range. , 2021, , .		0
87	Femto-farad nanophotonic devices for fJ/bit signal conversion. , 2020, , .		0
88	Non-Hermitian Temporal Coupled-Mode Theory: Effects of Imaginary Couplings on Exceptional Points. , 2021, , .		0
89	Energy efficient OEO conversion and its applications to photonic integrated systems. , 2022, , .		0
90	Probing the Ginzburgâ€“Landau Potential for Lasers Using Higher-order Photon Correlations. Journal of the Physical Society of Japan, 2022, 91, .	1.6	0