Takashi Asano

List of Publications by Year
in descending order

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Version: 2024-02-01

110 papers	9,947 citations	81900 39 h-index	46799 89 g-index
110 all docs	110 docs citations	110 times ranked	5864 citing authors

#	Article	IF	Citations
1	Electrically controlled on-demand photon transfer between high-Q photonic crystal nanocavities on a silicon chip. Nature Photonics, 2022, 16, 113-118.	31.4	16
2	Near-field thermophotovotaic devices with surrounding non-contact reflectors for efficient photon recycling. Optics Express, 2021, 29, 11133.	3.4	10
3	Fabrication and characterization of an L3 nanocavity designed by an iterative machine-learning method. APL Photonics, 2021, 6, .	5.7	11
4	Detection of negatively ionized air by using a Raman silicon nanocavity laser. Optics Express, 2021, 29, 16228.	3.4	11
5	Sub-100-nW-threshold Raman silicon laser designed by a machine-learning method that optimizes the product of the cavity Q-factors. Optics Express, 2021, 29, 17053.	3.4	14
6	Integrated Near-Field Thermophotovoltaic Device Overcoming Blackbody Limit. ACS Photonics, 2021, 8, 2466-2472.	6.6	26
7	1.2-Âµm-band ultrahigh-Q photonic crystal nanocavities and their potential for Raman silicon lasers. Optics Express, 2021, 29, 24396.	3.4	8
8	Determination of Nonlinear Optical Efficiencies of Ultrahigh-Q Photonic Crystal Nanocavities with Structural Imperfections. ACS Photonics, 2021, 8, 2839-2845.	6.6	5
9	Detrimental Fluctuation of Frequency Spacing Between the Two High-Quality Resonant Modes in a Raman Silicon Nanocavity Laser. IEEE Journal of Selected Topics in Quantum Electronics, 2020, 26, 1-12.	2.9	11
10	High-Efficiency Thermophotovoltaic System That Employs an Emitter Based on a Silicon Rod-Type Photonic Crystal. ACS Photonics, 2020, 7, 80-87.	6.6	29
11	Statistical evaluation of Q factors of fabricated photonic crystal nanocavities designed by using a deep neural network. Applied Physics Express, 2020, 13, 012002.	2.4	11
12	Raman Scattering Emission from a Silicon Photonic Nanocavity Excited by a Superluminescent Diode. , 2020, , .		0
13	One-Chip Near-Field Thermophotovoltaic Device Integrating a Thin-Film Thermal Emitter and Photovoltaic Cell. Nano Letters, 2019, 19, 3948-3952.	9.1	75
14	Electrical Modulation of Narrowband GaN/AlGaN Quantum-Well Photonic Crystal Thermal Emitters in Mid-Wavelength Infrared. ACS Photonics, 2019, 6, 1565-1571.	6.6	21
15	Iterative optimization of photonic crystal nanocavity designs by using deep neural networks. Nanophotonics, 2019, 8, 2243-2256.	6.0	41
16	Ultrahigh-Q photonic crystal nanocavities based on 4H silicon carbide. Optica, 2019, 6, 991.	9.3	78
17	One-chip Integrated Near-field Thermophotovoltaic Devices Using Intermediate Transparent Substrates. , 2019, , .		0
18	GaN/AlGaN photonic crystal narrowband thermal emitters on a semi-transparent low-refractive-index substrate. AIP Advances, 2018, 8, 015221.	1.3	1

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19	Wavelength-selective thermal emitters using Si-rods on MgO. Applied Physics Letters, 2018, 112, .	3.3	9
20	High-Q-factor nanobeam photonic crystal cavities in bulk silicon carbide. Applied Physics Letters, 2018, 113, .	3.3	20
21	Electrical Control of Middle-Wavelength Infrared Thermal Emission using GaN/AlGaN Photonic Crystals. , 2018, , .		0
22	Optimization of photonic crystal nanocavities based on deep learning. Optics Express, 2018, 26, 32704.	3.4	144
23	Near-field thermophotovoltaic energy conversion using an intermediate transparent substrate. Optics Express, 2018, 26, A192.	3.4	27
24	Photonic Crystal Devices in Silicon Photonics. Proceedings of the IEEE, 2018, 106, 2183-2195.	21.3	26
25	Lasing Dynamics of Optically-Pumped Ultralow-Threshold Raman Silicon Nanocavity Lasers. Physical Review Applied, 2018, 10, .	3.8	19
26	Spectral control of near-field thermal radiation via photonic band engineering of two-dimensional photonic crystal slabs. Optics Express, 2018, 26, 32074.	3.4	10
27	Strongly asymmetric wavelength dependence of optical gain in nanocavity-based Raman silicon lasers. Optica, 2018, 5, 1256.	9.3	20
28	Demonstration of a mid-wavelength infrared narrowband thermal emitter based on GaN/AlGaN quantum wells and a photonic crystal. Applied Physics Letters, 2017, 110, .	3.3	10
29	Analysis of high-Q photonic crystal L3 nanocavities designed by visualization of the leaky components. Optics Express, 2017, 25, 367.	3.4	37
30	Ultrahigh-Q photonic crystal nanocavities fabricated by CMOS process technologies. Optics Express, 2017, 25, 18165.	3.4	41
31	Photonic crystal nanocavity with a Q factor exceeding eleven million. Optics Express, 2017, 25, 1769.	3.4	156
32	Narrowband thermal emitters based on photonic crystals. , 2017, , .		0
33	Efficient conversion of second harmonic generation in high-Q SiC photonic crystal nanocavities. , 2016, , .		0
34	On-chip integration and high-speed switching of multi-wavelength narrowband thermal emitters. Applied Physics Letters, 2016, 108, .	3.3	24
35	Improvement of out-coupling of the oblique waveguide in three-dimensional photonic crystals by introducing a symmetric end structure. , 2016, , .		0
36	Near-infraredâ€“toâ€“visible highly selective thermal emitters based on an intrinsic semiconductor. Science Advances, 2016, 2, e1600499.	10.3	61

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37	Two-wavelength switchable narrowband thermal emitters. , 2016, , .		0
38	Improvement in the quality factors for photonic crystal nanocavities via visualization of the leaky components. Optics Express, 2016, 24, 9541.	3.4	42
39	On-demand transfer of trapped photons on a chip. Science Advances, 2016, 2, e1501690.	10.3	39
40	A sub-microwatt threshold Raman silicon laser using a high-Q nanocavity. , 2015, , .		1
41	Raman shift and strain effect in high-Q photonic crystal silicon nanocavity. Optics Express, 2015, 23, 3951.	3.4	27
42	Multiple-channel wavelength conversions in a photonic crystal cavity. Optics Express, 2015, 23, 4523.	3.4	7
43	Analysis of Q-factors of structural imperfections in triangular cross-section nanobeam photonic crystal cavities. Journal of the Optical Society of America B: Optical Physics, 2015, 32, 1792.	2.1	10
44	Filter-free nondispersive infrared sensing using narrow-bandwidth mid-infrared thermal emitters. Applied Physics Express, 2014, 7, 012103.	2.4	23
45	Dynamic control of narrowband thermal emission. , 2014, , .		0
46	Second-harmonic generation in a silicon-carbide-based photonic crystal nanocavity. Optics Letters, 2014, 39, 1768.	3.3	72
47	Analysis of emissivity and absorptivity of two overlapping guided modes in two-dimensional periodic structures. Physical Review A, 2014, 89, .	2.5	0
48	Structural Optimization of Photonic Crystals for Enhancing Optical Absorption of Thin Film Silicon Solar Cell Structures. IEEE Photonics Journal, 2014, 6, 1-10.	2.0	12
49	Photonic crystal nanocavity with a Q-factor of ~9 million. Optics Express, 2014, 22, 916.	3.4	173
50	Ultra-compact 32-channel drop filter with 100 GHz spacing. Optics Express, 2014, 22, 4692.	3.4	35
51	Dynamic control of photonic crystal nanocavities for photon manipulation. IEICE Proceeding Series, 2014, 1, 356-359.	0.0	0
52	Single-peak narrow-bandwidth mid-infrared thermal emitters based on quantum wells and photonic crystals. Applied Physics Letters, 2013, 102, .	3.3	71
53	Efficient scheme for on-demand light transfer between distant nanocavities. , 2013, , .		0
54	Single-mode, narrowband thermal emitters based on quantum wells and photonic crystals. , 2013, , .		0

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55	High-<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>Q</mml:mi></mml:math>resonant modes in a photonic crystal heterostructure nanocavity and applicability to a Raman silicon laser. Physical Review B, 2013, 88, .	3.2	26
56	A micrometre-scale Raman silicon laser with a microwatt threshold. Nature, 2013, 498, 470-474.	27.8	218
57	Adiabatic transfer scheme of light between strongly coupled photonic crystal nanocavities. Physical Review B, 2013, 87, .	3.2	11
58	Design of single-mode narrow-bandwidth thermal emitters for enhanced infrared light sources. Journal of the Optical Society of America B: Optical Physics, 2013, 30, 165.	2.1	25
59	Suppression of multiple photon absorption in a SiC photonic crystal nanocavity operating at 155 Î¼m. Optics Express, 2012, 20, 14789.	3.4	34
60	Strong coupling between distant photonic nanocavities and its dynamic control. Nature Photonics, 2012, 6, 56-61.	31.4	219
61	Conversion of broadband to narrowband thermal emission through energy recycling. Nature Photonics, 2012, 6, 535-539.	31.4	256
62	Demonstration of two-dimensional photonic crystals based on silicon carbide. Optics Express, 2011, 19, 11084.	3.4	99
63	Statistical studies of photonic heterostructure nanocavities with an average Q factor of three million. Optics Express, 2011, 19, 11916.	3.4	97
64	Silicon carbide-based photonic crystal nanocavities for ultra-broadband operation from infrared to visible wavelengths. Applied Physics Letters, 2011, 99, 201102.	3.3	59
65	Photonic crystal nanocavities and broad-area cavities. , 2011, , .		0
66	Green GaInN photonic-crystal light-emitting diodes with small surface recombination effect. Applied Physics Letters, 2011, 98, .	3.3	19
67	Thermal emission control by simultaneous manipulation of electronic and photonic states. , 2011, , .		0
68	Observation of strong coupling between distant photonic nanocavities through a waveguide. , 2010, , .		0
69	A Polarization Diversity Two-Dimensional Photonic-Crystal Device. IEEE Journal of Selected Topics in Quantum Electronics, 2010, 16, 70-76.	2.9	5
70	Effects of fluctuation in air hole radii and positions on optical characteristics in photonic crystal heterostructure nanocavities. Physical Review B, 2009, 79, .	3.2	86
71	Spectrally selective thermal radiation based on intersubband transitions and photonic crystals. Optics Express, 2009, 17, 19190.	3.4	30
72	Time-resolved observation of stopping optical pulses by dynamic Q control of a photonic-crystal nanocavity. , 2009, , .		0

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73	Resonant-Wavelength Control of Nanocavities by Nanometer-Scaled Adjustment of Two-Dimensional Photonic Crystal Slab Structures. IEEE Photonics Technology Letters, 2008, 20, 532-534.	2.5	23
74	Design of Photonic Crystal Nanocavity With Q-Factor of ${{sim}10^{9}}$. Journal of Lightwave Technology, 2008, 26, 1532-1539.	4.6	112
75	Spectral reflectance measurement of two-dimensional photonic nanocavities with embedded quantum dots. , 2008, , .		0
76	RECENT ADVANCES IN TWO-DIMENSIONAL PHOTONIC CRYSTALS SLAB STRUCTURE: DEFECT ENGINEERING AND HETEROSTRUCTURE. Nano, 2007, 02, 1-13.	1.0	4
77	Light Emission from Quantum Dots embedded in a Photonic Double-Heterostructure Nanocavity. , 2007, , .		0
78	Light-emission properties of quantum dots embedded in a photonic double-heterostructure nanocavity. Applied Physics Letters, 2007, 90, 231101.	3.3	29
79	High-Q nanocavity with a 2-ns photon lifetime. Optics Express, 2007, 15, 17206.	3.4	168
80	Dynamic wavelength conversion of an optical pulse traveling in a 2D photonic crystal waveguide. Conference Proceedings - Lasers and Electro-Optics Society Annual Meeting-LEOS, 2007, , .	0.0	3
81	Dynamic Q factor control of photonic crystal nanocavities. Conference Proceedings - Lasers and Electro-Optics Society Annual Meeting-LEOS, 2007, , .	0.0	1
82	Ultra-high-Q Photonic Nanocavities. Conference Proceedings - Lasers and Electro-Optics Society Annual Meeting-LEOS, 2007, , .	0.0	0
83	Dynamic control of the Q factor in a photonic crystal nanocavity. Nature Materials, 2007, 6, 862-865.	27.5	241
84	Spontaneous-emission control by photonic crystals and nanocavities. Nature Photonics, 2007, 1, 449-458.	31.4	842
85	Ultrahigh-Q Nanocavities in Two-Dimensional Photonic Crystal Slabs. IEEE Journal of Selected Topics in Quantum Electronics, 2006, 12, 1123-1134.	2.9	115
86	Analysis of the experimental Q factors (~ 1 million) of photonic crystal nanocavities. Optics Express, 2006, 14, 1996.	3.4	205
87	Investigation of point-defect cavity formed in two-dimensional photonic crystal slab with one-sided dielectric cladding. Applied Physics Letters, 2006, 88, 011112.	3.3	41
88	Controlling spontaneous emission phenomena in defect-free 2D photonic crystals with quantum dots. , 2006, , .		0
89	Ultra-high-Q photonic double-heterostructure nanocavity. Nature Materials, 2005, 4, 207-210.	27.5	1,246
90	Line-defectâ€“waveguide laser integrated with a point defect in a two-dimensional photonic crystal slab. Applied Physics Letters, 2005, 86, 171106.	3.3	19

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91	Experimental demonstration of complete photonic band gap in two-dimensional photonic crystal slabs. Applied Physics Letters, 2005, 87, 061107.	3.3	65
92	Highly efficient in-plane channel drop filter in a two-dimensional heterophotonic crystal. Applied Physics Letters, 2005, 86, 241101.	3.3	75
93	Fine-tuned high-Q photonic-crystal nanocavity. Optics Express, 2005, 13, 1202.	3.4	488
94	Two-dimensional photonic-crystal-slab channel-drop filter with flat-top response. Optics Express, 2005, 13, 2512.	3.4	85
95	Role of interfaces in heterophotonic crystals for manipulation of photons. Physical Review B, 2005, 71, .	3.2	43
96	Time-domain measurement of picosecond light-pulse propagation in a two-dimensional photonic crystal-slab waveguide. Applied Physics Letters, 2004, 84, 4690-4692.	3.3	62
97	Characterization of line-defect-waveguide lasers in two-dimensional photonic-crystal slabs. Applied Physics Letters, 2004, 84, 5395-5397.	3.3	45
98	Tuning holes in photonic-crystal nanocavities (reply). Nature, 2004, 429, 1-2.	27.8	6
99	In-plane-type channel drop filter in a two-dimensional photonic crystal slab. Applied Physics Letters, 2004, 84, 2226-2228.	3.3	136
100	High-Q photonic nanocavity in a two-dimensional photonic crystal. Nature, 2003, 425, 944-947.	27.8	2,493
101	Investigation of a channel-add/drop-filtering device using acceptor-type point defects in a two-dimensional photonic-crystal slab. Applied Physics Letters, 2003, 83, 407-409.	3.3	36
102	Investigation of high-Q channel drop filters using donor-type defects in two-dimensional photonic crystal slabs. Applied Physics Letters, 2003, 83, 1512-1514.	3.3	126
103	Theoretical investigation of a two-dimensional photonic crystal slab with truncated cone air holes. Applied Physics Letters, 2003, 82, 1661-1663.	3.3	125
104	Design of a channel drop filter by using a donor-type cavity with high-quality factor in a two-dimensional photonic crystal slab. Applied Physics Letters, 2003, 82, 1341-1343.	3.3	101
105	Photonic Devices Based on In-Plane Hetero Photonic Crystals. Science, 2003, 300, 1537-1537.	12.6	282
106	Channel-Add Operation of a Device Using Defects in a Two-Dimensional Photonic Crystal Slab. Materials Research Society Symposia Proceedings, 2002, 722, 231.	0.1	1
107	Ultra-short pulse propagation in 3D GaAs photonic crystals. Optical and Quantum Electronics, 2002, 34, 37-43.	3.3	9
108	Femtosecond pump and probe measurement of all-optical modulation based on intersubband transition in n-doped quantum wells. Physica E: Low-Dimensional Systems and Nanostructures, 2000, 7, 704-708.	2.7	2

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109	Pump and probe measurement of intersubband relaxation time in short-wavelength intersubband transition. Applied Physics Letters, 1999, 74, 1418-1420.	3.3	18
110	Investigation of short wavelength intersubband transitions in InGaAs/AlAs quantum wells on GaAs substrate. Journal of Applied Physics, 1997, 82, 3385-3391.	2.5	32