Mingchu Tang

List of Publications by Year
in descending order

107 papers	2,892 citations	201674 27 h-index	175258 52 g-index
107 all docs	107 docs citations	107 times ranked	2290 citing authors

#	Article	IF	Citations
1	Electrically pumped continuous-wave IIIâ€"V quantum dot lasers on silicon. Nature Photonics, 2016, 10, 307-311.	31.4	665
2	Continuous-wave InAs/GaAs quantum-dot laser diodes monolithically grown on Si substrate with low threshold current densities. Optics Express, 2012, 20, 22181.	3.4	153
3	13-Î¼m InAs/GaAs quantum-dot lasers monolithically grown on Si substrates using InAlAs/GaAs dislocation filter layers. Optics Express, 2014, 22, 11528.	3.4	125
4	Electrically pumped continuous-wave 13 Âµm InAs/GaAs quantum dot lasers monolithically grown on on-axis Si (001) substrates. Optics Express, 2017, 25, 4632.	3.4	102
5	InAs/GaAs Quantum-Dot Lasers Monolithically Grown on Si, Ge, and Ge-on-Si Substrates. IEEE Journal of Selected Topics in Quantum Electronics, 2013, 19, 1901107-1901107.	2.9	93
6	Integration of III-V lasers on Si for Si photonics. Progress in Quantum Electronics, 2019, 66, 1-18.	7.0	86
7	Monolithic quantum-dot distributed feedback laser array on silicon. Optica, 2018, 5, 528.	9.3	85
8	1.3 Î¼m InAs/GaAs quantumâ€dot laser monolithically grown on Si substrates operating over 100Â°C. Electronics Letters, 2014, 50, 1467-1468.	1.0	81
9	Optimizations of Defect Filter Layers for 1.3-Î¼m InAs/GaAs Quantum-Dot Lasers Monolithically Grown on Si Substrates. IEEE Journal of Selected Topics in Quantum Electronics, 2016, 22, 50-56.	2.9	69
10	InAs/GaAs Quantum-Dot Superluminescent Light-Emitting Diode Monolithically Grown on a Si Substrate. ACS Photonics, 2014, 1, 638-642.	6.6	66
11	Monolithically Integrated InAs/GaAs Quantum Dot Mid-Infrared Photodetectors on Silicon Substrates. ACS Photonics, 2016, 3, 749-753.	6.6	63
12	Voltage recovery in charged InAs/GaAs quantum dot solar cells. Nano Energy, 2014, 6, 159-166.	16.0	61
13	Continuous-wave quantum dot photonic crystal lasers grown on on-axis Si (001). Nature Communications, 2020, 11, 977.	12.8	61
14	Wafer-Scale Fabrication of Self-Catalyzed 1.7 eV GaAsP Coreâ€"Shell Nanowire Photocathode on Silicon Substrates. Nano Letters, 2014, 14, 2013-2018.	9.1	58
15	Heteroepitaxial Growth of III-V Semiconductors on Silicon. Crystals, 2020, 10, 1163.	2.2	56
16	Design rules for dislocation filters. Journal of Applied Physics, 2014, 116, .	2.5	55
17	Refractive indices of MBE-grown AlxGa(1â^’<i>x</i>)As ternary alloys in the transparent wavelength region. AIP Advances, 2021, 11, .	1.3	52
18	Self-Catalyzed Ternary Coreâ€"Shell GaAsP Nanowire Arrays Grown on Patterned Si Substrates by Molecular Beam Epitaxy. Nano Letters, 2014, 14, 4542-4547.	9.1	48

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19	Origin of Defect Tolerance in InAs/GaAs Quantum Dot Lasers Grown on Silicon. Journal of Lightwave Technology, 2020, 38, 240-248.	4.6	46
20	InAs/GaAsSb quantum dot solar cells. Optics Express, 2014, 22, A679.	3.4	43
21	Submonolayer InGaAs/GaAs quantum dot solar cells. Solar Energy Materials and Solar Cells, 2014, 126, 83-87.	6.2	43
22	Dislocation filters in GaAs on Si. Semiconductor Science and Technology, 2015, 30, 114004.	2.0	40
23	Heat-sink free CW operation of injection microdisk lasers grown on Si substrate with emission wavelength beyond 13â€‰â€‰Î¼m. Optics Letters, 2017, 42, 3319.	3.3	40
24	Ultra-low threshold InAs/GaAs quantum dot microdisk lasers on planar on-axis Si (001) substrates. Optica, 2019, 6, 430.	9.3	37
25	Low-noise 13â€‰â€‰Î¼m InAs/GaAs quantum dot laser monolithically grown on silicon. Photonics Research, 2018, 6, 1062.	7.0	35
26	O-band InAs/GaAs quantum dot laser monolithically integrated on exact (0â€¯0â€¯1) Si substrate. Journal of Crystal Growth, 2019, 511, 56-60.	1.5	31
27	Recent progress in epitaxial growth of IIIâ€"V quantum-dot lasers on silicon substrate. Journal of Semiconductors, 2019, 40, 101302.	3.7	29
28	Monolithically Integrated Electrically Pumped Continuous-Wave III-V Quantum Dot Light Sources on Silicon. IEEE Journal of Selected Topics in Quantum Electronics, 2017, 23, 1-10.	2.9	28
29	In situ annealing enhancement of the optical properties and laser device performance of InAs quantum dots grown on Si substrates. Optics Express, 2016, 24, 6196.	3.4	26
30	Optimisation of the dislocation filter layers in 1.3â€Î¼m InAs/GaAs quantumâ€dot lasers monolithically grown on Si substrates. IET Optoelectronics, 2015, 9, 61-64.	3.3	23
31	All-MBE grown InAs/GaAs quantum dot lasers with thin Ge buffer layer on Si substrates. Journal Physics D: Applied Physics, 2021, 54, 035103.	2.8	23
32	Type-II InAs/GaAsSb Quantum Dot Solar Cells With GaAs Interlayer. IEEE Journal of Photovoltaics, 2018, 8, 741-745.	2.5	22
33	Inversion Boundary Annihilation in GaAs Monolithically Grown on Onâ€Axis Silicon (001). Advanced Optical Materials, 2020, 8, 2000970.	7.3	22
34	InAs/InGaP quantum dot solar cells with an AlGaAs interlayer. Solar Energy Materials and Solar Cells, 2016, 144, 96-101.	6.2	21
35	Two-colour In_{0.5}Ga_{0.5}As quantum dot infrared photodetectors on silicon. Semiconductor Science and Technology, 2018, 33, 094009.	2.0	21
36	Antimony mediated growth of high-density InAs quantum dots for photovoltaic cells. Applied Physics Letters, 2013, 103, 043901.	3.3	20

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37	Electrically pumped continuousâ€wave 1.3â€Âµm InAs/GaAs quantum dot lasers monolithically grown on Si substrates. IET Optoelectronics, 2014, 8, 20-24.	3.3	19
38	Thin Ge buffer layer on silicon for integration of III-V on silicon. Journal of Crystal Growth, 2019, 514, 109-113.	1.5	17
39	Si-Doped InAs/GaAs Quantum-Dot Solar Cell With AlAs Cap Layers. IEEE Journal of Photovoltaics, 2016, 6, 906-911.	2.5	16
40	Direct growth of InAs/GaSb type II superlattice photodiodes on silicon substrates. IET Optoelectronics, 2018, 12, 2-4.	3.3	16
41	Theoretical Study on the Effects of Dislocations in Monolithic III-V Lasers on Silicon. Journal of Lightwave Technology, 2020, 38, 4801-4807.	4.6	15
42	InAs/GaAs quantum-dot superluminescent diodes monolithically grown on a Ge substrate. Optics Express, 2014, 22, 23242.	3.4	14
43	Effect of rapid thermal annealing on InAs/GaAs quantum dot solar cells. IET Optoelectronics, 2015, 9, 65-68.	3.3	14
44	Elevated temperature lasing from injection microdisk lasers on silicon. Laser Physics Letters, 2018, 15, 015802.	1.4	14
45	Stabilization of GaAs photoanodes by <i>in situ</i> deposition of nickel-borate surface catalysts as hole trapping sites. Sustainable Energy and Fuels, 2019, 3, 814-822.	4.9	14
46	Quantum dot mode-locked frequency comb with ultra-stable 25.5â€‰â€‰GHz spacing between 20Â°C and 120Â°C. Photonics Research, 2020, 8, 1937.	7.0	14
47	InAs/GaAs Quantum Dot Microlasers Formed on Silicon Using Monolithic and Hybrid Integration Methods. Materials, 2020, 13, 2315.	2.9	14
48	Recent Progress of Quantum Dot Lasers Monolithically Integrated on Si Platform. Frontiers in Physics, 2022, 10, .	2.1	14
49	Physics-Based Modeling and Experimental Study of Si-Doped InAs/GaAs Quantum Dot Solar Cells. International Journal of Photoenergy, 2018, 2018, 1-10.	2.5	13
50	Effect of rapid thermal annealing on threading dislocation density in III-V epilayers monolithically grown on silicon. Journal of Applied Physics, 2018, 123, .	2.5	12
51	High performance waveguide uni-travelling carrier photodiode grown by solid source molecular beam epitaxy. Optics Express, 2019, 27, 37065.	3.4	12
52	Long-Wavelength InAs/GaAs Quantum-Dot Light Emitting Sources Monolithically Grown on Si Substrate. Photonics, 2015, 2, 646-658.	2.0	10
53	Silicon-Based Single Quantum Dot Emission in the Telecoms C-Band. ACS Photonics, 2017, 4, 1740-1746.	6.6	10
54	Degradation of IIIâ€"V Quantum Dot Lasers Grown Directly on Silicon Substrates. IEEE Journal of Selected Topics in Quantum Electronics, 2019, 25, 1-6.	2.9	10

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55	Al0.2Ga0.8As Solar Cells Monolithically Grown on Si and GaAs by MBE for III-V/Si Tandem Dual-junction Applications. Energy Procedia, 2016, 92, 661-668.	1.8	9
56	InAs/GaAs quantum dot solar cells with quantum dots in the base region. IET Optoelectronics, 2019, 13, 215-217.	3.3	9
57	Multi-wavelength 128 Gbit s^{âˆ’1} Î» ^{âˆ’1} PAM4 optical transmission enabled by a 100 GHz quantum dot mode-locked optical frequency comb. Journal Physics D: Applied Physics, 2022, 55, 144001.	2.8	8
58	Roadmap of 1300-nm InAs/GaAs quantum dot laser grown on silicon for silicon photonics. , 2019, , .		7
59	Hybrid IIIâ€"V/IV Nanowires: High-Quality Ge Shell Epitaxy on GaAs Cores. Nano Letters, 2018, 18, 6397-6403.	9.1	6
60	Co-Package Technology Platform for Low-Power and Low-Cost Data Centers. Applied Sciences (Switzerland), 2021, 11, 6098.	2.5	6
61	The role of different types of dopants in 1.3 Î¼m InAs/GaAs quantum-dot lasers. Journal Physics D: Applied Physics, 2022, 55, 215105.	2.8	6
62	1.7eV Al0.2Ga0.8As solar cells epitaxially grown on silicon by SSMBE using a superlattice and dislocation filters. , 2016, , .		5
63	Influence of built-in charge on photogeneration and recombination processes in InAs/GaAs quantum dot solar cells. Journal Physics D: Applied Physics, 2017, 50, 165101.	2.8	5
64	Optimization of 1.3 <i>Âµ</i>m InAs/GaAs quantum dot lasers epitaxially grown on silicon: taking the optical loss of metamorphic epilayers into account. Laser Physics, 2018, 28, 126206.	1.2	5
65	The effect of post-growth rapid thermal annealing on InAs/InGaAs dot-in-a-well structure monolithically grown on Si. Journal of Applied Physics, 2019, 125, 135301.	2.5	5
66	Selective area intermixing of IIIâ€"V quantum-dot lasers grown on silicon with two wavelength lasing emissions. Semiconductor Science and Technology, 2019, 34, 085004.	2.0	4
67	Impact of ex-situ annealing on strain and composition of MBE grown GeSn. Journal Physics D: Applied Physics, 2020, 53, 485104.	2.8	4
68	Electrically pumped continuous-wave O-band quantum-dot superluminescent diode on silicon. Optics Letters, 2020, 45, 5468.	3.3	4
69	Single-Mode Photonic Crystal Nanobeam Lasers Monolithically Grown on Si for Dense Integration. IEEE Journal of Selected Topics in Quantum Electronics, 2022, 28, 1-6.	2.9	4
70	IIIâ€"V quantum dot lasers epitaxially grown on Si substrates. , 2019, , 17-39.		3
71	III-V Quantum Dot Lasers Monolithically Grown on Silicon. , 2019, , .		3
72	Monolithic IIIâ€"V quantum dot lasers on silicon. Frontiers of Nanoscience, 2021, 20, 353-388.	0.6	3

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73	Silicon-based long-wavelength III–V quantum-dot lasers. , 2012, , .		2
74	1.3µm InAs/GaAs Quantum-Dot Laser Monolithically Grown on Si Substrates Using InAlAs/GaAs Dislocation Filter Layers. , 2014, , .		2
75	Impact of the growth temperature on the performance of 1.70-eV Al0.22Ga0.78As solar cells grown by MBE. Journal of Crystal Growth, 2017, 475, 322-327.	1.5	2
76	Si-Doped InAs/GaAs Quantum Dot Solar Cell with Alas Cap Layers. E3S Web of Conferences, 2017, 16, 16001.	0.5	2
77	Long-wavelength III-V quantum-dot lasers monolithically grown on Si substrates. , 2013, , .		1
78	InAs/GaAs quantum-dot lasers and detectors on silicon substrates for silicon photonics. , 2013, , .		1
79	Optimisation of 1.3-Î¼m InAs/GaAs Quantum-Dot Lasers Monolithically Grown on Si Substrates. Journal of Physics: Conference Series, 2015, 619, 012011.	0.4	1
80	Long lifetime quantum-dot laser monolithically grown on silicon. , 2016, , .		1
81	III-IV quantum dot lasers epitaxially grown on Si. , 2017, , .		1
82	InAs/GaAs Quantum Dot Lasers Monolithically Integrated on Group IV Platform. , 2018, , .		1
83	Degradation Studies of InAs / GaAs QD Lasers Grown on Si. , 2018, , .		1
84	The influence of direct, delta, and modulation QD Si doping on InAs/GaAs quantum dot solar cells. , 2018, , .		1
85	GaAs Compounds Heteroepitaxy on Silicon for Opto and Nano Electronic Applications. , 0, , .		1
86	Optically-pumped InAs/GaAs quantum-dot microdisk lasers monolithically grown on on-axis Si (001) substrate. , 2019, , .		1
87	Electrically Pumped 1.3-Âµm InAs/GaAs Quantum Dot Laser Monolithically Grown on Si Substrate Lasing up to 111Â°C. , 2015, , .		1
88	Monolithically Grown Superluminescent Diodes on Germanium and Silicon substrates. , 2015, , .		0
89	Continuous-wave emission of IIIâ€“V quantum dot lasers grown directly on Si substrates. , 2015, , .		0
90	Deep-etched III-V lasers grown directly on silicon substrates. , 2016, , .		0

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91	Silicon-based III-V quantum dot devices for silicon photonics. , 2016, , .		0
92	InAs/GaAs quantum-dot light emitters monolithically grown on Si substrate. , 2016, , .		0
93	Integrating III-V quantum dot lasers on silicon substrates for silicon photonics. , 2017, , .		0
94	Influence of Si doping on InAs/GaAs quantum dot solar cells with AlAs cap layers. , 2017, , .		0
95	High-performance InAs/GaAs quantum-dot laser didoes monolithically grown on silicon for silicon photonics. , 2017, , .		0
96	MBE growth of 1.7eV Al0.2Ga0.8As and 1.42eV GaAs solar cells on Si using dislocations filters: an alternative pathway toward III-V/ Si solar cells architectures. , 2017, , .		0
97	Increasing Maximum Gain in InAs Quantum Dot Lasers on GaAs and Si. , 2018, , .		0
98	Investigation into the current loss in InAs/GaAs quantum dot solar cells with Si-doped quantum dots. Journal Physics D: Applied Physics, 2019, 52, 505108.	2.8	0
99	Microcavity lasers directly grown on silicon. , 2021, , .		0
100	IIIâ€“V quantum-dot laser growth on silicon and germanium. , 2013, , .		0
101	Quantum Dot Lasers on Silicon by Direct Epitaxial Growth. , 2015, , .		0
102	InAs/GaAs quantum dot lasers monolithically grown on silicon for silicon photonics. , 2016, , .		0
103	Silicon-based III-V quantum-dot lasers for silicon photonics. , 2016, , .		0
104	O-band InAs Quantum Dot Light Sources Monolithically Grown on Si. , 2018, , .		0
105	Photonic crystal lasers grown on CMOS-compatible on-axis Si(001). , 2020, , .		0
106	Various microcavity lasers monolithically grown on planar on-axis Si (001) substrates. , 2021, , .		0
107	The limits to peak modal gain in p-modulation doped indium arsenide quantum dot laser diodes. , 2021, , .		0