Tatsuya Usuki

List of Publications by Year
in descending order

92 papers	2,182 citations	218677 26 h-index	233421 45 g-index
93 all docs	93 docs citations	93 times ranked	1735 citing authors

#	Article	IF	Citations
1	50-Gb/s ring-resonator-based silicon modulator. Optics Express, 2013, 21, 11869.	3.4	165
2	Numerical analysis of ballistic-electron transport in magnetic fields by using a quantum point contact and a quantum wire. Physical Review B, 1995, 52, 8244-8255.	3.2	157
3	Single-Photon Generation in the 1.55-Âµm Optical-Fiber Band from an InAs/InP Quantum Dot. Japanese Journal of Applied Physics, 2005, 44, L620-L622.	1.5	120
4	First Demonstration of Athermal Silicon Optical Interposers With Quantum Dot Lasers Operating up to 125 Â°C. Journal of Lightwave Technology, 2015, 33, 1223-1229.	4.6	106
5	An optical horn structure for single-photon source using quantum dots at telecommunication wavelength. Journal of Applied Physics, 2007, 101, 081720.	2.5	93
6	First demonstration of high density optical interconnects integrated with lasers, optical modulators, and photodetectors on single silicon substrate. Optics Express, 2011, 19, B159.	3.4	90
7	Microstructure and electrical properties of Sn nanocrystals in thin, thermally grown SiO2 layers formed via low energy ion implantation. Journal of Applied Physics, 1998, 84, 1316-1320.	2.5	72
8	Non-classical Photon Emission from a Single InAs/InP Quantum Dot in the 1.3-Âµm Optical-Fiber Band. Japanese Journal of Applied Physics, 2004, 43, L993-L995.	1.5	71
9	Charge susceptibility of the one-dimensional Hubbard model. Physics Letters, Section A: General, Atomic and Solid State Physics, 1989, 135, 476-480.	2.1	67
10	125-Gb/s operation with 029-VÂ·cm V_Ï€L using silicon Mach-Zehnder modulator based-on forward-biased pin diode. Optics Express, 2012, 20, 2911.	3.4	62
11	Transmission Experiment of Quantum Keys over 50 km Using High-Performance Quantum-Dot Single-Photon Source at 1.5 Âµm Wavelength. Applied Physics Express, 2010, 3, 092802.	2.4	58
12	Thermodynamic Quantities of the One-Dimensional Hubbard Model at Finite Temperatures. Journal of the Physical Society of Japan, 1990, 59, 1357-1365.	1.6	57
13	Thermodynamic properties of the one-dimensional Hubbard model. Physics Letters, Section A: General, Atomic and Solid State Physics, 1989, 137, 287-290.	2.1	54
14	Site-controlled photoluminescence at telecommunication wavelength from InAsâˆ•InP quantum dots. Applied Physics Letters, 2005, 86, 113118.	3.3	54
15	Demonstration of 125-Gbps optical interconnects integrated with lasers, optical splitters, optical modulators and photodetectors on a single silicon substrate. Optics Express, 2012, 20, B256.	3.4	53
16	Observation of Exciton Transition in 1.3-1.55 Âµm Band from Single InAs/InP Quantum Dots in Mesa Structure. Japanese Journal of Applied Physics, 2004, 43, L349-L351.	1.5	47
17	Observation of electrostatically released DNA from gold electrodes with controlled threshold voltages. Journal of Chemical Physics, 2004, 120, 5501-5504.	3.0	44
18	Compact PIN-Diode-Based Silicon Modulator Using Side-Wall-Grating Waveguide. IEEE Journal of Selected Topics in Quantum Electronics, 2013, 19, 74-84.	2.9	43

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19	Ultralow-Power (1.59 mW/Gbps), 56-Gbps PAM4 Operation of Si Photonic Transmitter Integrating Segmented PIN Machâ€"Zehnder Modulator and 28-nm CMOS Driver. Journal of Lightwave Technology, 2018, 36, 1275-1280.	4.6	41
20	Polarization-dependent shift in excitonic Zeeman splitting of self-assembledIn0.75Al0.25Asâˆ•Al0.3Ga0.7Asquantum dots. Physical Review B, 2005, 71, .	3.2	40
21	High-density and wide-bandwidth optical interconnects with silicon optical interposers [Invited]. Photonics Research, 2014, 2, A1.	7.0	40
22	Theoretical study of Landau-Zener tunneling at theM+Nlevel crossing. Physical Review B, 1997, 56, 13360-13366.	3.2	39
23	Laterally coupled self-assembled InAs quantum dots embedded in resonant tunnel diode with multigate electrodes. Applied Physics Letters, 2008, 92, .	3.3	35
24	Time-Resolved Study of Carrier Transfer among InAs/GaAs Multi-Coupled Quantum Dots. Japanese Journal of Applied Physics, 1995, 34, L1439.	1.5	34
25	Time-Resolved Study of Carrier Transfer among InAs/GaAs Multi-Coupled Quantum Dots. Japanese Journal of Applied Physics, 1995, 34, L1439-L1441.	1.5	34
26	Numerical analysis of electron-wave detection by a wedge-shaped point contact. Physical Review B, 1994, 50, 7615-7625.	3.2	29
27	A 1 V Peak-to-Peak Driven 10-Gbps Slow-Light Silicon Machâ€"Zehnder Modulator Using Cascaded Ring Resonators. Applied Physics Express, 2010, 3, 072202.	2.4	28
28	Few-Electron Molecular States and Their Transitions in a Single InAs Quantum Dot Molecule. Physical Review Letters, 2005, 95, 236801.	7.8	25
29	First Demonstration of Electrically Driven 1.55 Âµm Single-Photon Generator. Japanese Journal of Applied Physics, 2008, 47, 2880-2883.	1.5	25
30	Photon Antibunching Observed from an InAlAs Single Quantum Dot. Japanese Journal of Applied Physics, 2005, 44, L793-L796.	1.5	24
31	Spin Depolarization via Tunneling Effects in Asymmetric Double Quantum Dot Structure. Japanese Journal of Applied Physics, 2004, 43, 2110-2113.	1.5	23
32	High-speed and efficient silicon modulator based on forward-biased pin diodes. Frontiers in Physics, 2014, 2, .	2.1	20
33	V/sub th/ fluctuation induced by statistical variation of pocket dopant profile. , 0, , .		19
34	Controlling emission wavelength from InAs self-assembled quantum dots on InP (001) during MOCVD. Physica E: Low-Dimensional Systems and Nanostructures, 2005, 26, 81-85.	2.7	19
35	Site-controlled quantum dots fabricated using an atomic-force microscope assisted technique. Nanoscale Research Letters, 2006, 1, 160-166.	5.7	19
36	Thermoelectric Power of the Anderson Model at Low Temperatures. Journal of the Physical Society of Japan, 1987, 56, 1539-1545.	1.6	18

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37	A proposal of new floating-dot memory storing a small number of electrons with relatively long retention time at low voltage operations. Microelectronic Engineering, 1999, 47, 281-283.	2.4	17
38	Exciton dynamics in current-injected single quantum dot at 1.55Î¼m. Applied Physics Letters, 2008, 92, 161104.	3.3	17
39	Cascaded-ring-resonator-loaded Machâ€“Zehnder modulator for enhanced modulation efficiency in wide optical bandwidth. Optics Express, 2012, 20, 16321.	3.4	15
40	Radiative recombination of excitons in disk-shaped<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mi mathvariant="normal">In</mml:mi><mml:mi mathvariant="normal">As</mml:mi><mml:mo>âˆ•</mml:mo><mml:mi mathvariant="normal">In</mml:mi><mml:mi mathvariant="normal">P</mml:mi></mml:mrow></mml:math>quantum dots. Physical Review B, 2007, 76, .	3.2	14
41	Development of Electrically Driven Single-Quantum-Dot Device at Optical Fiber Bands. Japanese Journal of Applied Physics, 2006, 45, 3621-3624.	1.5	13
42	25-Gb/s broadband silicon modulator with 031-VÂ·cm VÏ€L based on forward-biased PIN diodes embedded with passive equalizer. Optics Express, 2015, 23, 32950.	3.4	13
43	Accurate SPICE Model of Forward-Biased Silicon PIN Machâ€“Zehnder Modulator for an Energy-Efficient Multilevel Transmitter. Journal of Lightwave Technology, 2018, 36, 1959-1969.	4.6	13
44	Single InAs/InP quantum dot spectroscopy in 1.3â€“1.55Î¼m telecommunication band. Physica E: Low-Dimensional Systems and Nanostructures, 2005, 26, 185-189.	2.7	11
45	Single-photon interferography in InAsâˆ•InP quantum dots emitting at 1300nm wavelength. Applied Physics Letters, 2007, 91, 223113.	3.3	10
46	Robust Optical Data Transfer on Silicon Photonic Chip. Journal of Lightwave Technology, 2012, 30, 2933-2940.	4.6	10
47	Coupling between oneâ€dimensional states in a quantum point contact and an electron waveguide. Applied Physics Letters, 1994, 65, 3087-3089.	3.3	9
48	Triggered single-photon emission and cross-correlation properties in InAlAs quantum dot. Physica E: Low-Dimensional Systems and Nanostructures, 2006, 32, 144-147.	2.7	9
49	High-density optical interconnects by using silicon photonics. Proceedings of SPIE, 2014, , .	0.8	8
50	Observation of Overhauser shift in a self-assembled InAlAs quantum dot. Physica E: Low-Dimensional Systems and Nanostructures, 2005, 29, 510-514.	2.7	7
51	Magnetization curve for the heavy fermion compounds CeAl3 and CeCu2Si2. Journal of Magnetism and Magnetic Materials, 1988, 76-77, 121-122.	2.3	6
52	Analysis of Landau-Zener tunneling with an Ohmic reservoir and a noise source. Physical Review B, 1998, 57, 7124-7131.	3.2	6
53	Single-photon generation from InAlAs single quantum dot. Physica Status Solidi C: Current Topics in Solid State Physics, 2005, 2, 3833-3837.	0.8	6
54	Electric field modulation of exciton recombination in InAs/GaAs quantum dots emitting at 1.3Î¼m. Journal of Applied Physics, 2008, 104, 013504.	2.5	6

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55	Coulomb interaction in asymmetric triple-coupled quantum dots. Semiconductor Science and Technology, 2004, 19, S409-S411.	2.0	5
56	Metal Oxide Semiconductor Field Effect Transistor (MOSFET) Model Based on a Physical High-Field Carrier-Velocity Model. Japanese Journal of Applied Physics, 2004, 43, 77-81.	1.5	5
57	Magnetization Curve for Ce Compounds in the Crystalline Field. Journal of the Physical Society of Japan, 1989, 58, 1427-1432.	1.6	4
58	Scanning tunneling microscope study of capped quantum dots. Applied Physics Letters, 2004, 85, 2355-2357.	3.3	4
59	Decoherence of single photons from an InAs/InP quantum dot emitting at a 1.3 Î¼m wavelength. Physica Status Solidi C: Current Topics in Solid State Physics, 2009, 6, 944-947.	0.8	4
60	Differential signal transmission in silicon-photonics integrated circuit for high density optical interconnects. , 2011, , .		4
61	First Demonstration of High Density Optical Interconnects Integrated with Lasers, Optical Modulators and Photodetectors on a Single Silicon Substrate. , 2011, , .		4
62	Demonstration of 12.5-Gbps Optical Interconnects Integrated with Lasers, Optical Splitters, Optical Modulators and Photodetectors on a Single Silicon Substrate. , 2012, , .		4
63	Demonstration of 25-Gbps optical data links on silicon optical interposer using FPGA transceiver. , 2014, , .		4
64	Wavelength-routing interconnect "Optical Hub" for parallel computing systems. , 2020, , .		4
65	Theoretical Analysis of Write Errors and Number of Stored Electrons for Ten-Nanoscale Si Floating-Dot Memory. Japanese Journal of Applied Physics, 1998, 37, L709-L711.	1.5	3
66	Slow-Light Silicon Mach-Zehnder Modulator Based-on Cascaded Ring Resonators. , 2010, , .		3
67	High-performance silicon modulator for integrated transceivers fabricated on 300-mm wafer. , 2014, , .		3
68	Silicon-Wire Waveguide Based External Cavity Laser for Milliwatt-Order Output Power and Temperature Control Free Operation with Silicon Ring Modulator. Japanese Journal of Applied Physics, 2012, 51, 082101.	1.5	3
69	Sub-GHz operation of single-photon emitting diode at 1.55 Î¼m. Proceedings of SPIE, 2009, , .	0.8	2
70	Hybrid laser with Si ring resonator and SOA for temperature control free operation with ring resonator-based modulator. , 2011, , .		2
71	Ultra-Low-Power (1.59 mW/Gbps), 56-Gbps PAM4 Operation of Si Photonic Transmitter Integrating Segmented PIN Mach-Zehnder Modulator and 28-nm CMOS Driver. , 2017, , .		2
72	High-density Silicon Optical Interposer for Inter-chip Interconnects based on Compact and High Speed Components. , 2013, , .		2

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73	Trade-off between operational speed and error occurrence for single electron circuits on the quantum scale. Microelectronic Engineering, 1999, 47, 269-271.	2.4	1
74	Mechanism of Quantum Dot Formation by Postgrowth Annealing of Wetting Layer. Japanese Journal of Applied Physics, 2006, 45, 3564-3567.	1.5	1
75	Silicon-Wire Waveguide Based External Cavity Laser for Milliwatt-Order Output Power and Temperature Control Free Operation with Silicon Ring Modulator. Japanese Journal of Applied Physics, 2012, 51, 082101.	1.5	1
76	Bit error rate analysis of a silicon optical interposer using its equivalent circuit. IEICE Electronics Express, 2015, 12, 20141084-20141084.	0.8	1
77	Advances in High-Density Inter-Chip Interconnects with Photonic Wiring. IEICE Transactions on Electronics, 2013, E96.C, 958-965.	0.6	1
78	A direct tunneling memory using ultra-thin oxide and deca-nano floating gate structure. Superlattices and Microstructures, 2000, 28, 401-406.	3.1	0
79	Sharp Interfacial Structure of InAs/InP Quantum Dots Grown by a Double-Cap Method: A Cross-Sectional Scanning Tunneling Microscopy Study. AIP Conference Proceedings, 2007, , .	0.4	0
80	Tunneling-Injection Single-Photon Emitter Using Charged Exciton State. Japanese Journal of Applied Physics, 2009, 48, 06FF01.	1.5	0
81	Athermal silicon optical interposers with quantum dot lasers operating from 25 to 125Â°C. Electronics Letters, 2014, 50, 1377-1378.	1.0	0
82	Athermal silicon optical interposers operating up to 125Â° C. Proceedings of SPIE, 2015, , .	0.8	0
83	Numerical simulation of waveguide light scattering for Si photonics. , 2017, , .		0
84	Numerical Designing of Optical Waveguide by Curvilinear Coordinates. , 2019, , .		0
85	Advantage of a Quasi-Nonvolatile Memory with Ultra Thin Oxide. , 2001, , .		0
86	Development of Electrically Driven Single-Photon Emitter at Optical Fiber Bands. , 2005, , .		0
87	Single-photon generator for telecom applications. , 2006, , .		0
88	First Demonstration of Electrically Driven 1.55 Î¼m Single-Photon Generator. , 2007, , .		0
89	Fully Integrated Silicon Optical Interposers with High Bandwidth Density. , 2014, , .		0
90	InAs/GaAs Multi-Coupled Quantum Dots Structure Enabling High-Intensity, Near-1.3-Î¼m Emission due to Cascade Carrier Tunneling. , 1995, , .		0

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91	Studies of Semiconductor Quantum Dots for Quantum Information Processing. , 2008, , 267-296.		0
92	Error-Free Operation for Fully Connected Wavelength-Routing Interconnect among 8 FPGAs with 2.8-Tbit/s Total Bandwidth. , 2021, , .		0