

Shinichi Saito

List of Publications by Year in descending order

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127
papers

1,139
citations

471509

17
h-index

477307

29
g-index

128
all docs

128
docs citations

128
times ranked

921
citing authors

#	ARTICLE	IF	CITATIONS
1	Analytical quantum mechanical model for accumulation capacitance of MOS structures. IEEE Electron Device Letters, 2002, 23, 348-350.	3.9	83
2	Remote-charge-scattering limited mobility in field-effect transistors with SiO ₂ and Al ₂ O ₃ •SiO ₂ gate stacks. Journal of Applied Physics, 2005, 98, 113706.	2.5	64
3	Electro-Luminescence from Ultra-Thin Silicon. Japanese Journal of Applied Physics, 2006, 45, L679-L682.	1.5	56
4	Effective Electron Mobility Reduced by Remote Charge Scattering in High- κ Gate Stacks. Japanese Journal of Applied Physics, 2002, 41, 4521-4522.	1.5	52
5	Towards monolithic integration of germanium light sources on silicon chips. Semiconductor Science and Technology, 2016, 31, 043002.	2.0	47
6	All-silicon carrier accumulation modulator based on a lateral metal-oxide-semiconductor capacitor. Photonics Research, 2018, 6, 373.	7.0	44
7	Improved theory for remote-charge-scattering-limited mobility in metal-oxide-semiconductor transistors. Applied Physics Letters, 2002, 81, 2391-2393.	3.3	43
8	Effects of remote-surface-roughness scattering on carrier mobility in field-effect-transistors with ultrathin gate dielectrics. Applied Physics Letters, 2004, 84, 1395-1397.	3.3	39
9	Silicon light-emitting transistor for on-chip optical interconnection. Applied Physics Letters, 2006, 89, 163504.	3.3	35
10	Group IV Light Sources to Enable the Convergence of Photonics and Electronics. Frontiers in Materials, 2014, 1, .	2.4	33
11	Stimulated emission of near-infrared radiation by current injection into silicon (100) quantum well. Applied Physics Letters, 2009, 95, 241101.	3.3	31
12	Ge-on-Si photonic devices for photonic-electronic integration on a Si platform. IEICE Electronics Express, 2014, 11, 20142008-20142008.	0.8	28
13	Germanium fin light-emitting diode. Applied Physics Letters, 2011, 99, .	3.3	24
14	Whispering Gallery Mode Resonances from Ge Micro-Disks on Suspended Beams. Frontiers in Materials, 2015, 2, .	2.4	23
15	Effect of interfacial oxide on electron mobility in metal insulator semiconductor field effect transistors with Al ₂ O ₃ gate dielectrics. Microelectronic Engineering, 2003, 65, 447-453.	2.4	21
16	Real-time monitoring and gradient feedback enable accurate trimming of ion-implanted silicon photonic devices. Optics Express, 2018, 26, 24953.	3.4	21
17	Fabrication of Arbitrarily Narrow Vertical Dielectric Slots in Silicon Waveguides. IEEE Photonics Technology Letters, 2017, 29, 1269-1272.	2.5	20
18	Intrinsic optical gain of ultrathin silicon quantum wells from first-principles calculations. Physical Review B, 2009, 79, .	3.2	19

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19	Built-in interface in high- Γ gate stacks. Applied Surface Science, 2003, 216, 208-214.	6.1	18
20	Three-Dimensional Numerical Analysis of Switching Properties of High-Speed and Nonvolatile Nanoelectromechanical Memory. IEEE Transactions on Electron Devices, 2007, 54, 1132-1139.	3.0	17
21	Spin-Orbit Coupling of Light in Photonic Crystal Waveguides. Physical Review A, 2019, 99, .	2.5	17
22	High Bandwidth Capacitance Efficient Silicon MOS Modulator. Journal of Lightwave Technology, 2021, 39, 201-207.	4.6	17
23	Improvement of crystallinity by post-annealing and regrowth of Ge layers on Si substrates. Thin Solid Films, 2014, 550, 509-514.	1.8	16
24	Photonic crystal waveguides on silicon rich nitride platform. Optics Express, 2017, 25, 3214.	3.4	16
25	Stimulated emission of near-infrared radiation in silicon fin light-emitting diode. Applied Physics Letters, 2011, 98, 261104.	3.3	15
26	Random telegraph noise from resonant tunnelling at low temperatures. Scientific Reports, 2018, 8, 250.	3.3	15
27	Tensile strain engineering of germanium micro-disks on free-standing SiO ₂ beams. Japanese Journal of Applied Physics, 2016, 55, 04EH02.	1.5	14
28	Polarization Rotation and Mode Splitting in Photonic Crystal Line-Defect Waveguides. Frontiers in Physics, 2018, 6, .	2.1	14
29	Anomalous zero-group-velocity photonic bonding states with local chirality. Journal of the Optical Society of America B: Optical Physics, 2018, 35, 2356.	2.1	12
30	Single carrier trapping and de-trapping in scaled silicon complementary metal-oxide-semiconductor field-effect transistors at low temperatures. Semiconductor Science and Technology, 2017, 32, 075001.	2.0	11
31	Cavity-enhanced harmonic generation in silicon rich nitride photonic crystal microresonators. Applied Physics Letters, 2019, 114, 131103.	3.3	11
32	Improvement of photoluminescence from Ge layer with patterned Si ₃ N ₄ stressors. Thin Solid Films, 2014, 557, 355-362.	1.8	10
33	Enhanced light emission from improved homogeneity in biaxially suspended Germanium membranes from curvature optimization. Optics Express, 2017, 25, 22911.	3.4	10
34	Ultra-high-Q photonic crystal cavities in silicon rich nitride. Optics Express, 2017, 25, 27334.	3.4	10
35	Poincaré Rotator for Vortexed Photons. Frontiers in Physics, 2021, 9, .	2.1	10
36	Germanium vertically light-emitting micro-gears generating orbital angular momentum. Optics Express, 2018, 26, 34675.	3.4	10

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37	Inversion Electron Mobility Affected by Phase Separation in High-Permittivity Gate Dielectrics. Japanese Journal of Applied Physics, 2003, 42, L1425-L1428.	1.5	9
38	Synthesis of Assembled Nanocrystalline Si Dots Film by the Langmuir-Blodgett Technique. Japanese Journal of Applied Physics, 2008, 47, 3731-3734.	1.5	9
39	Temperature Dependence of Electron Tunneling between Two Dimensional Electron Gas and Si Quantum Dots. Japanese Journal of Applied Physics, 2010, 49, 014001.	1.5	9
40	Low-Loss Slot Waveguides with Silicon (111) Surfaces Realized Using Anisotropic Wet Etching. Frontiers in Materials, 2016, 3, .	2.4	9
41	Ion Implantation of Germanium Into Silicon for Critical Coupling Control of Racetrack Resonators. Journal of Lightwave Technology, 2020, 38, 1865-1873.	4.6	9
42	Integration of low loss vertical slot waveguides on SOI photonic platforms for high efficiency carrier accumulation modulators. Optics Express, 2020, 28, 23143.	3.4	9
43	Spin-on doping of germanium-on-insulator wafers for monolithic light sources on silicon. Japanese Journal of Applied Physics, 2015, 54, 052101.	1.5	8
44	Analysis of subthreshold slope of fully depleted amorphous In-Ga-Zn-O thin-film transistors. Applied Physics Letters, 2015, 106, 013504.	3.3	8
45	Silicon erasable waveguides and directional couplers by germanium ion implantation for configurable photonic circuits. Optics Express, 2020, 28, 17630.	3.4	8
46	Gutzwiller-Type Projected BCS Ground States for Attractive Hubbard Model in Infinite Dimensions. Progress of Theoretical Physics, 1999, 102, 953-963.	2.0	7
47	Single Electron Memory Effect Using Random Telegraph Signals at Room Temperature. Frontiers in Physics, 2019, 7, .	2.1	7
48	Si photonic waveguides with broken symmetries: applications from modulators to quantum simulations. Japanese Journal of Applied Physics, 2020, 59, SO0801.	1.5	7
49	Silicon slot fin waveguide on bonded double-SOI for a low-power accumulation modulator fabricated by an anisotropic wet etching technique. Optics Express, 2018, 26, 33180.	3.4	7
50	16 x 8 quantum dot array operation at cryogenic temperatures. Japanese Journal of Applied Physics, 2022, 61, SC1040.	1.5	7
51	Synthesis, Monolayer Formation, and Control of Electrical Characteristics of 3-nm-Diameter Gold Nanoparticles. Japanese Journal of Applied Physics, 2005, 44, 5667-5669.	1.5	6
52	Manipulation of random telegraph signals in a silicon nanowire transistor with a triple gate. Nanotechnology, 2018, 29, 475201.	2.6	6
53	Electromechanical Simulation of Switching Characteristics for Nanoelectromechanical Memory. Japanese Journal of Applied Physics, 2009, 48, 114502.	1.5	5
54	Low-Loss Silicon Waveguides and Grating Couplers Fabricated Using Anisotropic Wet Etching Technique. Frontiers in Materials, 2016, 3, .	2.4	5

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55	Topological carbon allotropes: knotted molecules, carbon-nano-chain, chainmails, and Hopfene. Materials Research Express, 2020, 7, 056301.	1.6	5
56	Comparison of uniaxial and polyaxial suspended germanium bridges in terms of mechanical stress and thermal management towards a CMOS compatible light source. Optics Express, 2019, 27, 37846.	3.4	5
57	First-principles study of light emission from silicon and germanium due to direct transitions. , 2011, , .		4
58	Lattice deformation on flat-band modulation in 3D Hopf-linked carbon allotrope: Hopfene. Applied Physics Letters, 2019, 115, .	3.3	4
59	Silicon and germanium quantum well light-emitting diode. , 2011, , .		3
60	Theoretical designs for novel photonic crystal nanocavities with Si (111) interfaces. Photonics and Nanostructures - Fundamentals and Applications, 2017, 26, 1-7.	2.0	3
61	BCS-BEC crossover and superconductor-insulator transition in Hopf-linked Graphene layers: Hopfene. Materials Research Express, 2019, 6, 106004.	1.6	3
62	Electrically Erasable Optical I/O for Wafer Scale Testing of Silicon Photonic Integrated Circuits. IEEE Photonics Journal, 2020, 12, 1-8.	2.0	3
63	Random telegraph signals caused by a single dopant in a metal-oxide-semiconductor field effect transistor at low temperature. AIP Advances, 2020, 10, 055025.	1.3	3
64	Lateral carrier injection to germanium for monolithic light sources. , 2012, , .		2
65	Time-resolved photoluminescence study of highly n-doped germanium grown on silicon. , 2012, , .		2
66	Germanium waveguides on lateral silicon-on-insulator diodes for monolithic light emitters and photo detectors. , 2013, , .		2
67	(Invited) Ge Optical Emitters Fabricated by Ge Condensation and Epitaxial Growth. ECS Transactions, 2013, 50, 277-286.	0.5	2
68	Low-loss silicon rectangular waveguides fabricated by anisotropic wet etching for roughness reduction. , 2015, , .		2
69	Room-temperature direct band-gap electroluminescence from germanium (111)-fin light-emitting diodes. Japanese Journal of Applied Physics, 2017, 56, 032102.	1.5	2
70	Random-telegraph-noise by resonant tunnelling at low temperatures. , 2017, , .		2
71	Towards High Speed and Low Power Silicon Photonic Data Links. , 2018, , .		2
72	Direct observation of surface charge redistribution in active nanoscale conducting channels by Kelvin Probe Force Microscopy. Nanotechnology, 2021, 32, 325206.	2.6	2

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73	Probing hole spin transport of disorder quantum dots via Pauli spin-blockade in standard silicon transistors. <i>Nanotechnology</i> , 2021, 32, 260001.	2.6	2
74	Is Evolution from Weak to Strong Coupling Superconductivity Always Continuous?. <i>Journal of the Physical Society of Japan</i> , 2001, 70, 1186-1189.	1.6	2
75	Germanium ion implantation for trimming the coupling efficiency of silicon racetrack resonators. , 2019, , .		2
76	Investigating stability and tunability of quantum dot transport in silicon MOSFETs via the application of electrical stress. <i>Journal Physics D: Applied Physics</i> , 0, , .	2.8	2
77	Ge Ion Implanted Photonic Devices and Annealing for Emerging Applications. <i>Micromachines</i> , 2022, 13, 291.	2.9	2
78	Chiral germanium micro-gears for tuning orbital angular momentum. <i>Scientific Reports</i> , 2022, 12, 7465.	3.3	2
79	Accurate Evaluation of Mobility in High Gate-Leakage-Current MOSFETs by Using a Transmission-Line Model. <i>IEEE Transactions on Electron Devices</i> , 2004, 51, 1653-1658.	3.0	1
80	(Invited) Si/Ge Quantum Well Light-Emitting Diode for Monolithic Integration in Si Photonics Chips. <i>ECS Transactions</i> , 2012, 45, 103-112.	0.5	1
81	Realization of Al tri-gate single electron turnstile co-integrated with a close proximity electrometer SET. <i>Microelectronic Engineering</i> , 2013, 111, 64-67.	2.4	1
82	Fabrication of Ge micro-disks on free-standing SiO ₂ beams for monolithic light emission. , 2015, , .		1
83	Group IV compounds for integrated photonic applications. , 2016, , .		1
84	Strain-engineering in Germanium membranes towards light sources on Silicon. , 2017, , .		1
85	Fabrication of silicon slot waveguides with 10nm wide oxide slot. , 2017, , .		1
86	LiNbO ₃ /Si-Hybrid Slot-Waveguide Electro-Optic Modulators. , 2018, , .		1
87	Low-Temperature NH ₃ -Free Silicon Nitride Platforms for Integrated Photonics. , 2018, , .		1
88	Photonic Bonding Modes with Circular Polarization at Zero-Group-Velocity Points. , 2018, , .		1
89	20Gbps silicon lateral MOS-Capacitor electro-optic modulator. , 2018, , .		1
90	Ion Implantation and Electrical Annealing for Trimming Silicon MZIs and Facilitating One-Time Programmable Photonic Circuits. , 2019, , .		1

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91	Improving Optical Properties of Ge Layers Fabricated by Epitaxial Growth Combined with Ge Condensation. Japanese Journal of Applied Physics, 2012, 51, 04DG10.	1.5	1
92	Germanium implanted photonic devices for post-fabrication trimming and programmable circuits. , 2018, , .		1
93	Electrical annealing for Ge ion-implanted directional couplers. , 2020, , .		1
94	Silicon quantum well light-emitting diode. , 2011, , .		0
95	Light Detection and Emission in Germanium-on-Insulator Diodes. Japanese Journal of Applied Physics, 2012, 51, 04DG09.	1.5	0
96	Improving Optical Properties of Ge Layers Fabricated by Epitaxial Growth Combined with Ge Condensation. Japanese Journal of Applied Physics, 2012, 51, 04DG10.	1.5	0
97	Improvement of photoluminescence from Ge Layers with Si ₃ N ₄ /SiO ₂ Stressors. , 2012, , .		0
98	(Invited) Monolithic Ge Optical Emitters for Photonic-Electronic Integration. ECS Transactions, 2013, 54, 283-289.	0.5	0
99	Germanium light-emitting diodes on silicon for very-short-reach interconnect. , 2014, , .		0
100	Impacts of atomically flat Si (111) surfaces on novel photonic crystal designs. , 2015, , .		0
101	Low-loss silicon slot waveguide realized by surface roughness reduction. , 2016, , .		0
102	Transport properties in silicon nanowire transistors with atomically flat interfaces. , 2017, , .		0
103	Tunable index back end of line platform for enhanced integrated photonics. , 2017, , .		0
104	3D Fin Waveguide on 10nm Gate Oxide Bonded Double-SOI for Low V _L Accumulation Modulator. , 2018, , .		0
105	Real-Time Phase Trimming of Mach-Zehnder Interferometers by Femtosecond Laser Annealing of Germanium Implanted Waveguides. , 2018, , .		0
106	Stimulated Raman Amplification in GaAs / AlAs Intermixed Superlattices. Physical Review Applied, 2018, 10, .	3.8	0
107	Quantum Dipole Effects in a Silicon Transistor under High Electric Fields. Journal of the Physical Society of Japan, 2018, 87, 094801.	1.6	0
108	High Speed Silicon Capacitor Modulators for TM Polarisation. , 2019, , .		0

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109	Multi Composition GeSi Tuneable Concentration Silicon-Germanium Wire Structures for CMOS Photonics. , 2019, , .		0
110	Ion Implantation and Electrical Annealing for Trimming Silicon MZIs and Facilitating One-Time Programmable Photonic Circuits. , 2019, , .		0
111	High Speed Silicon Capacitor Modulators for TM Polarisation. , 2019, , .		0
112	Multi Composition GeSi Tuneable Concentration Silicon-Germanium Wire Structures for CMOS Photonics. , 2019, , .		0
113	High Performance Silicon Optical Modulators. , 2020, , .		0
114	10 nm SiO ₂ TM Slot Mode in Laterally Mismatched Asymmetric Fin-Waveguides. <i>Frontiers in Physics</i> , 2021, 9, .	2.1	0
115	Theoretical calculation and simulation of surface-modified scalable silicon heat sink for electronics cooling. <i>Thermal Science</i> , 2021, 25, 4181-4187.	1.1	0
116	Quantum Confined Ultra-Thin Silicon Light-Emitting Transistor for On-Chip Optical Interconnection. , 2007, , .		0
117	Improving Optical Properties of Ge Layers Fabricated by Epitaxial Growth Combined with Ge Condensation. , 2011, , .		0
118	Light Detection and Emission in Germanium-On-Insulator Diodes. , 2011, , .		0
119	2D Photonic Crystal Structures in Silicon Rich Nitride Platform. , 2017, , .		0
120	Quantum Dipole in a Silicon Transistor: Quantum Simulation for Strongly Correlated System. , 2017, , .		0
121	Transversal Symmetry Breaking in Novel Photonic Crystal Waveguide: Innovative Manner to Master Defect Band Dispersion Relation. , 2017, , .		0
122	Random-Telegraph-Noise and Wave-Particle Duality Found in a Silicon Nano-Wire. , 2018, , .		0
123	Novel Si Photonic Waveguides and Applications to Optical Modulators. , 2019, , .		0
124	Silicon photonics for high data rate applications -INVITED. <i>EPJ Web of Conferences</i> , 2020, 238, 01005.	0.3	0
125	Silicon single-electron random number generator based on random telegraph signals at room temperature. <i>AIP Advances</i> , 2020, 10, 115101.	1.3	0
126	Conservation Law of Spin & Orbital Angular Momentum for a Vortex Generated by a Silicon Photonic Gear. , 2021, , .		0

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127	Editorial: Integrated Quantum Photonics. <i>Frontiers in Physics</i> , 2021, 9, .	2.1	0