Takanobu Watanabe

List of Publications by Year
in descending order

Source: https://exaly.com/author-pdf/6903568/publications.pdf

Version: 2024-02-01

108	1,252	394286	414303
papers	citations	19 h-index	32 g-index

108	108	108	1092
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Effect of metal heat guide structure on the performance of planar Si thermoelectric generator embedded in SiO₂ inter-layer dielectric. Japanese Journal of Applied Physics, 2022, 61, SC1017.	0.8	2
2	Modification and Characterization of Interfacial Bonding for Thermal Management of Ruthenium Interconnects in Next-Generation Very-Large-Scale Integration Circuits. ACS Applied Materials & Interfaces, 2022, 14, 7392-7404.	4.0	8
3	Performance demonstration of cavity-free planar multi-stage bileg and unileg silicon-nanowire thermoelectric generators. Japanese Journal of Applied Physics, 2022, 61, SC1062.	0.8	2
4	Sn-incorporation effect on thermoelectric properties of Sb-doped Ge-rich Ge_{1â^'xâ^'y}Si_xSn_y epitaxial layers grown on GaAs(001). Japanese Journal of Applied Physics, 2022, 61, 085502.	0.8	3
5	Designing a bileg silicon-nanowire thermoelectric generator with cavity-free structure. Japanese Journal of Applied Physics, 2021, 60, SBBF07.	0.8	11
6	Dependency of a localized phonon mode intensity on compositional cluster size in SiGe alloys. AIP Advances, 2021, 11, 075017.	0.6	3
7	Microthermoelectric devices using Si nanowires. , 2021, , 503-520.		0
8	Atomic mass dependency of a localized phonon mode in SiGe alloys. AIP Advances, 2021, 11, .	0.6	8
9	Substrate Bias Effect on SOI-based Thermoelectric Power Generator. , 2021, , .		0
10	Effect of phonon-boundary scattering on phonon-drag factor in Seebeck coefficient of Si wire. AIP Advances, 2020, 10, 075015.	0.6	9
11	Anomalous low energy phonon dispersion in bulk silicon-germanium observed by inelastic x-ray scattering. Applied Physics Letters, 2020, 116, .	1.5	10
12	Effect of the Thermal Boundary Resistance in Metal/Dielectric Thermally Conductive Layers on Power Generation of Silicon Nanowire Microthermoelectric Generators. ACS Applied Materials & Interfaces, 2020, 12, 34441-34450.	4.0	9
13	Effect of Thermal Boundary Resistance between the Interconnect Metal and Dielectric Interlayer on Temperature Increase of Interconnects in Deeply Scaled VLSI. ACS Applied Materials & Interfaces, 2020, 12, 22347-22356.	4.0	10
14	Observation of an Unidentified Phonon Peak in SiGe Alloys and Superlattices Using Molecular Dynamics Simulation. ECS Transactions, 2020, 98, 533-546.	0.3	5
15	Estimation of Phonon Mean Free Path in Small-Scaled Si Wire by Monte Carlo Simulation. , 2020, , .		0
16	Direct Bonding of GaAs and Diamond for High Power Device Applications. ECS Meeting Abstracts, 2020, MA2020-02, 1634-1634.	0.0	0
17	Observation of an Unidentified Phonon Peak in SiGe Alloys and Superlattices Using Molecular Dynamics Simulation. ECS Meeting Abstracts, 2020, MA2020-02, 3606-3606.	0.0	0
18	Evaluation of thermal conductivity characteristics in Si nanowire covered with oxide by UV Raman spectroscopy. Japanese Journal of Applied Physics, 2019, 58, SDDF04.	0.8	1

#	Article	IF	Citations
19	(Invited) Cavity-Free Micro Thermoelectric Energy Harvester with Si Nanowires. ECS Transactions, 2019, 89, 95-110.	0.3	4
20	Effect of Phonon-Drag Contributed Seebeck Coefficient on Si-Wire Thermopile Voltage Output. IEICE Transactions on Electronics, 2019, E102.C, 475-478.	0.3	2
21	(Invited) Cavity-Free Micro Thermoelectric Energy Harvester with Si Nanowires. ECS Meeting Abstracts, 2019, , .	0.0	0
22	Temperature Measurement for Si Nanowire Thermoelectric Generators By Operand Raman Spectroscopy. ECS Meeting Abstracts, 2019, , .	0.0	0
23	Control of the Anisotropic Conductivity of Carbon Nanotube Sheet and Their Thermoelectric Properties. ECS Meeting Abstracts, 2019, , .	0.0	0
24	Development of interatomic potential of Ge_{(1â^'}_x_{â^'}_y₎Si_xSn_y alloy semiconductors for classical lattice dynamics simulation. Japanese Journal of Applied Physics, 2018, 57, 04FB04.	0.8	17
25	Modeling, Simulation, Fabrication, and Characterization of a 10-<inline-formula> <tex-math notation="LaTeX">mu </tex-math> </inline-formula>W/cm² Class Si-Nanowire Thermoelectric Generator for IoT Applications. IEEE Transactions on Electron Devices, 2018, 65, 5180-5188.	1.6	54
26	Evaluation of Laterally Graded Silicon Germanium Wires for Thermoelectric Devices Fabricated by Rapid Melting Growth. ECS Transactions, 2018, 86, 87-93.	0.3	8
27	The Possibility of mW/cm²-Class On-Chip Power Generation Using Ultrasmall Si Nanowire-Based Thermoelectric Generators. IEEE Transactions on Electron Devices, 2018, 65, 2016-2023.	1.6	26
28	Miniaturized planar Si-nanowire micro-thermoelectric generator using exuded thermal field for power generation. Science and Technology of Advanced Materials, 2018, 19, 443-453.	2.8	43
29	Driving force of oxygen-ion migration across high-k/SiO₂ interface. Applied Physics Express, 2017, 10, 031501.	1.1	5
30	A scalable Si-based micro thermoelectric generator. , 2017, , .		15
31	Anomalous flatband voltage shift of AlFxOy/Al2O3 MOS capacitors: A consideration on dipole layer formation at dielectric interfaces with different anions. Applied Physics Letters, 2017, 110, 162907.	1.5	7
32	Enhanced nickelidation rate in silicon nanowires with interfacial lattice disorder. Journal of Applied Physics, 2017, 122, .	1.1	6
33	Silicon-based micro thermoelectric generator fabricated by CMOS compatible process. , 2017, , .		0
34	Anomalous Seebeck coefficient observed in silicon nanowire micro thermoelectric generator. Applied Physics Letters, 2017, 111, .	1.5	19
35	Evaluation of controlled strain in silicon nanowire by UV Raman spectroscopy. Japanese Journal of Applied Physics, 2017, 56, 06GG10.	0.8	4
36	Fundamental Study on Application of the Nanocomposite to an Electrical Rotating Machine. IEEJ Transactions on Fundamentals and Materials, 2017, 137, 645-651.	0.2	0

#	Article	IF	Citations
37	Positive and negative dipole layer formation at high-k/SiO₂ interfaces simulated by classical molecular dynamics. Japanese Journal of Applied Physics, 2016, 55, 04EB03.	0.8	25
38	Development of Interatomic Potential of Group IV Alloy Semiconductors for Lattice Dynamics Simulation. ECS Transactions, 2016, 75, 785-794.	0.3	2
39	ON current enhancement of nanowire Schottky barrier tunnel field effect transistors. Japanese Journal of Applied Physics, 2016, 55, 04ED07.	0.8	3
40	Particle-based Semiconductor Device Simulation Accelerated by GPU computing. Journal of Advanced Simulation in Science and Engineering, 2015, 2, 211-224.	0.1	1
41	Effects of a <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi>SiO</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:math> on the thermal transport properties of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mo>â€©</mml:mo><mml:mn>100</mml:mn><mml:mo>â€© width="0.16em" /><mml:mi>Si</mml:mi></mml:mrow></mml:math> nanowires: A molecular dynamics study. Physical Review B, 2015, 91, .	1.1	29
42	(Invited) Molecular Dynamics Simulation of Dipole Layer Formation at High-k/SiO2 Interfaces. ECS Transactions, 2014, 64, 3-15.	0.3	4
43	Source-induced RDF overwhelms RTN in nanowire transistor: Statistical analysis with full device EMC/MD simulation accelerated by GPU computing. , 2014, , .		11
44	Full-scale whole device EMC/MD simulation of Si nanowire transistor including source and drain regions by utilizing graphic processing units. , 2014, , .		4
45	Molecular dynamics study on the formation of dipole layer at high-k/SiO2interfaces. Japanese Journal of Applied Physics, 2014, 53, 08LB02.	0.8	7
46	Phonon Dispersion in ã€ˆ100ã€‰ Si Nanowire Covered with SiO2Film Calculated by Molecular Dynamics Simulation. ECS Journal of Solid State Science and Technology, 2014, 3, P149-P154.	0.9	5
47	Impact of thermal history of Si nanowire fabrication process on Ni silicidation rate. Japanese Journal of Applied Physics, 2014, 53, 085201.	0.8	4
48	A novel hetero-junction Tunnel-FET using Semiconducting silicideâ€“Silicon contact and its scalability. Microelectronics Reliability, 2014, 54, 899-904.	0.9	24
49	Impact of image force effect on gate-all-around Schottky barrier tunnel FET. , 2014, , .		0
50	Nano-device simulation from an atomistic view. , 2013, , .		11
51	Effects of atomic disorder on impact ionization rate in silicon nanodots. , 2013, , .		0
52	Phonon Dispersion in <100> Si Nanowire Covered with SiO2 Film Calculated by Molecular Dynamics Simulation. ECS Transactions, 2013, 50, 673-680.	0.3	2
53	Influence of Structural Parameters on Electrical Characteristics of Schottky Tunneling Field-Effect Transistor and Its Scalability. Japanese Journal of Applied Physics, 2013, 52, 04CC28.	0.8	5
54	Disorder-Induced Enhancement of Avalanche Multiplication in a Silicon Nanodot Array. Japanese Journal of Applied Physics, 2013, 52, 04CJ04.	0.8	0

#	Article	IF	Citations
55	Current fluctuation in sub-nano second regime in gate-all-around nanowire channels studied with ensemble Monte Carlo/molecular dynamics simulation. , 2012, , .		5
56	Challenge for STM observation of dopant activation process on Si(001): in-situ ion irradiation and hydrogenation. Physica Status Solidi C: Current Topics in Solid State Physics, 2012, 9, 1418-1422.	0.8	0
57	Real-Time Scanning Tunneling Microscopy of Au Ion Irradiation Effects on Si(111) Surface. Hyomen Kagaku, 2012, 33, 153-158.	0.0	0
58	Effects of atomic disorder on carrier transport in Si nanowire transistors. , 2011, , .		0
59	Dynamic bond-order force field. Journal of Computational Electronics, 2011, 10, 2-20.	1.3	7
60	Molecular Dynamics Simulation on Longitudinal Optical Phonon Mode Decay and Heat Transport in a Silicon Nano-Structure Covered with Oxide Films. Japanese Journal of Applied Physics, 2011, 50, 010102.	0.8	4
61	Impact of Self-Heating Effect on the Electrical Characteristics of Nanoscale Devices. Key Engineering Materials, 2011, 470, 14-19.	0.4	0
62	Impact of channel shape on carrier transport investigated by ensemble monte carlo/molecular dynamics simulation. , 2011, , .		0
63	Molecular Dynamics Simulation on Longitudinal Optical Phonon Mode Decay and Heat Transport in a Silicon Nano-Structure Covered with Oxide Films. Japanese Journal of Applied Physics, 2011, 50, 010102.	0.8	3
64	Molecular Dynamics Simulation of Heat Transport in Silicon Nano-structures Covered with Oxide Films. Japanese Journal of Applied Physics, 2010, 49, 04DN08.	0.8	7
65	Numerical simulation of transient heat conduction in nanoscale Si devices. , 2010, , .		0
66	Misfit Stress Relaxation Mechanism in GeO2/Ge Systems: A Classical Molecular Simulation Study. ECS Transactions, 2010, 33, 901-912.	0.3	7
67	Real-Time Scanning Tunneling Microscopy Observation of Si(111) Surface Modified by Au+Ion Irradiation. Japanese Journal of Applied Physics, 2010, 49, 015702.	0.8	2
68	Adsorption Mechanism of Ribosomal Protein L2 onto a Silica Surface: A Molecular Dynamics Simulation Study. Langmuir, 2010, 26, 9950-9955.	1.6	40
69	Molecular dynamics simulation on LO phonon mode decay in Si nano-structure covered with oxide films. , 2010, , .		0
70	Coupled Monte Carlo simulation of transient electron-phonon transport in nanoscale devices. , 2010, , .		4
71	Electron-phonon Scattering Effect on Strained Si Nanowire FETs at Low Temperature. ECS Transactions, 2009, 25, 439-443.	0.3	0
72	Demonstration of Transconductance Enhancement on (110) and (001) Strained-Nanowire FETs. ECS Transactions, 2009, 25, 427-430.	0.3	0

#	Article	IF	Citations
73	The main factor of the decrease in activity of luciferase on the Si surface. Chemical Physics Letters, 2008, 453, 279-282.	1.2	5
74	Transconductance enhancement of Si nanowire transistors by oxide-induced strain. , 2008, , .		0
75	Ensemble Monte Carlo/molecular dynamics simulation of electron mobility in silicon with ordered dopant arrays. , 2008, , .		0
76	Transconductance Enhancement by Utilizing Pattern Dependent Oxidation in Silicon Nanowire Field-Effect Transistors. ECS Transactions, 2008, 13, 351-358.	0.3	2
77	A molecular simulation study of an organosilane self-assembled monolayer/SiO2 substrate interface. Journal of Chemical Physics, 2008, 128, 164710.	1.2	16
78	Potential energy landscape of an interstitial<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mtext>O</mml:mtext><mml:mn>2</mml:mn></mml:msub></mml:mrow></mml:math in a<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mtext>SiO</mml:mtext></mml:mrow><mml:mn>2</mml:mn></mml:msu near the<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:m. Physi	1.1	10
79	Development of an ion beam alignment system for real-time scanning tunneling microscope observation of dopant-ion irradiation. Review of Scientific Instruments, 2008, 79, 073707.	0.6	1
80	In-plane X-ray Diffraction Profiles from Organosilane Monolayer/SiO2Models. Applied Physics Express, 2008, 1, 105002.	1.1	1
81	A New Kinetic Equation for Thermal Oxidation of Silicon Replacing the Deal-Grove Equation. ECS Transactions, 2007, 6, 465-481.	0.3	1
82	Strain Distribution around SiO2/Si Interface in Si Nanowires: A Molecular Dynamics Study. Japanese Journal of Applied Physics, 2007, 46, 3277-3282.	0.8	47
83	Strain-induced transconductance enhancement by pattern dependent oxidation in silicon nanowire field-effect transistors. Applied Physics Letters, 2007, 91, 202117.	1.5	29
84	A Kinetic Equation for Thermal Oxidation of Silicon Replacing the Dealâ€“Grove Equation. Journal of the Electrochemical Society, 2007, 154, G270.	1.3	12
85	Analysis of binding energies between luciferin and luciferase adsorbed on Si surface by docking simulations. Chemical Physics Letters, 2007, 439, 148-150.	1.2	0
86	Structural investigation of organosilane self-assembled monolayers by atomic scale simulation. European Physical Journal Special Topics, 2006, 132, 189-193.	0.2	2
87	Analysis of Interactions between Luciferase and Si Substrates Using Molecular Dynamics Simulations. Japanese Journal of Applied Physics, 2006, 45, 1021-1025.	0.8	7
88	New Linear-Parabolic Rate Equation for Thermal Oxidation of Silicon. Physical Review Letters, 2006, 96, 196102.	2.9	85
89	Analysis of Interactions between Green Fluorescent Protein and Silicon Substrates Using Molecular Dynamics Simulations. Japanese Journal of Applied Physics, 2005, 44, 8210-8215.	0.8	15
90	Si Island Formation on Domain Boundaries Induced by Ar Ion Irradiation on High-Temperature Si(111)-7 Ã— 7 Dimer-Adatom-Stacking Fault Surfaces. Japanese Journal of Applied Physics, 2005, 44, L313-L314.	0.8	6

#	Article	IF	Citations
91	Reactions and diffusion of atomic and molecular oxygen in theSiO2network. Physical Review B, 2005, 72, .	1.1	23
92	Large-Scale Atomistic Modeling of Thermally Grown SiO2on Si(111) Substrate. Japanese Journal of Applied Physics, 2004, 43, 492-497.	0.8	19
93	Residual order within thermally grown amorphousSiO2on crystalline silicon. Physical Review B, 2004, 69, .	1.1	38
94	Improved interatomic potential for stressed Si, O mixed systems. Applied Surface Science, 2004, 234, 207-213.	3.1	51
95	SiO2/Si interface structure and its formation studied by large-scale molecular dynamics simulation. Applied Surface Science, 2004, 237, 125-133.	3.1	45
96	SiO2/Si interface structure and its formation studied by large-scale molecular dynamics simulation. Applied Surface Science, 2004, 237, 125-133.	3.1	33
97	Diffusion of Molecular and Atomic Oxygen in Silicon Oxide. Japanese Journal of Applied Physics, 2003, 42, 3560-3565.	0.8	31
98	Effects of Thermal History on Residual Order of Thermally Grown Silicon Dioxide. Japanese Journal of Applied Physics, 2003, 42, 7250-7255.	0.8	17
99	Probability of Atomic or Molecular Oxygen Species in Silicon and Silicon Dioxide. Japanese Journal of Applied Physics, 2003, 42, 6535-6542.	0.8	2
100	An estimate of the Hausdorff dimension of a weak self-similar set. Chaos, Solitons and Fractals, 2002, 13, 363-366.	2.5	4
101	Recent Progress in Theoretical Study of Formation of Semiconductor Surfaces and Interfaces Based on Microscopic Processes. Large-scale Modeling of Silicon-dioxide Films by Means of Molecular Dynamics.. Hyomen Kagaku, 2002, 23, 74-80.	0.0	0
102	Nucleation site of Cu on the H-terminated Si(111) surface. Physical Review B, 2001, 64, .	1.1	13
103	Modeling of a SiO2/Si(001) structure including step and terrace configurations. Applied Surface Science, 2000, 162-163, 116-121.	3.1	16
104	Impact of Structural Strained Layer near SiO2/Si Interface on Activation Energy of Time-Dependent Dielectric Breakdown. Japanese Journal of Applied Physics, 2000, 39, 4687-4691.	0.8	23
105	Modeling of SiO2/Si(100) interface structure by using extended -Stillinger-Weber potential. Thin Solid Films, 1999, 343-344, 370-373.	0.8	37
106	Novel Interatomic Potential Energy Function for Si, O Mixed Systems. Japanese Journal of Applied Physics, 1999, 38, L366-L369.	0.8	137
107	Mechanism of H2 desorption from H-terminated Si(001) surfaces. Applied Surface Science, 1997, 117-118, 67-71.	3.1	8
108	SURFACE STRUCTURES AND GROWTH MODES FOR Cu ON Si(100), (110) AND (111) SURFACES DEPENDING ON Cu SEGREGATION BY HEAT TREATMENT. Surface Review and Letters, 1996, 03, 1377-1385.	0.5	9