

# Akira Sakai

## List of Publications by Year in descending order

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72  
papers

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citations

516215

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197535

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74  
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74  
docs citations

74  
times ranked

1533  
citing authors

#	ARTICLE	IF	CITATIONS
1	Versatile Functionality of Four-Terminal TiO <sub>2</sub> Memristive Devices as Artificial Synapses for Neuromorphic Computing. ACS Applied Electronic Materials, 2022, 4, 2326-2336.	2.0	4
2	Propagation of threading dislocations and effects of Burgers vectors in HVPE-grown GaN bulk crystals on Na-flux-grown GaN substrates. Journal of Applied Physics, 2021, 129, .	1.1	11
3	Analysis of inverse-piezoelectric-effect-induced lattice deformation in AlGaIn/GaN high-electron-mobility transistors by time-resolved synchrotron radiation nanobeam X-ray diffraction. Applied Physics Express, 2021, 14, 095502.	1.1	2
4	Thermal strain analysis considering in-plane anisotropy for sputtered AlN on c- and a-plane sapphire under high-temperature annealing. AIP Advances, 2021, 11, .	0.6	3
5	Local piezoelectric properties in Na-flux GaN bulk single crystals. Journal of Applied Physics, 2020, 128, 125110.	1.1	1
6	Fabrication of GaO <sub>x</sub> based crossbar array memristive devices and their resistive switching properties. Japanese Journal of Applied Physics, 2020, 59, SMMC03.	0.8	4
7	Gate Tuning of Synaptic Functions Based on Oxygen Vacancy Distribution Control in Four-Terminal TiO <sub>2</sub> Memristive Devices. Scientific Reports, 2019, 9, 10013.	1.6	10
8	Correlation between current leakage and structural properties of threading dislocations in GaN bulk single crystals grown using a Na-flux method. Japanese Journal of Applied Physics, 2019, 58, SCCB23.	0.8	13
9	Local current leakage at threading dislocations in GaN bulk single crystals grown by a modified Na-flux method. Japanese Journal of Applied Physics, 2019, 58, 050918.	0.8	4
10	Demonstrative operation of four-terminal memristive devices fabricated on reduced TiO <sub>2</sub> single crystals. Scientific Reports, 2019, 9, 2601.	1.6	6
11	Analysis of Ti valence states in resistive switching regions of a rutile TiO <sub>2</sub> four-terminal memristive device. Japanese Journal of Applied Physics, 2018, 57, 06KB02.	0.8	9
12	Resistive switching characteristics of isolated core-shell iron oxide/germanium nanocrystals epitaxially grown on Si substrates. Applied Physics Letters, 2018, 112, .	1.5	7
13	Microstructural analysis in the depth direction of a heteroepitaxial AlN thick film grown on a trench-patterned template by nanobeam X-ray diffraction. Journal of Applied Physics, 2018, 123, .	1.1	3
14	Leakage current analysis for dislocations in Na-flux GaN bulk single crystals by conductive atomic force microscopy. Journal of Applied Physics, 2018, 123, 161417.	1.1	14
15	Depth-resolved analysis of lattice distortions in high-Ge-content SiGe/compositionally graded SiGe films using nanobeam x-ray diffraction. Semiconductor Science and Technology, 2018, 33, 124005.	1.0	3
16	Tomographic Mapping Analysis in the Depth Direction of High-Ge-Content SiGe Layers with Compositionally Graded Buffers Using Nanobeam X-ray Diffraction. ACS Applied Materials & Interfaces, 2017, 9, 13726-13732.	4.0	6
17	Epitaxial multilayers of <sup>125</sup> I-FeSi <sub>2</sub> nanodots/Si for Si-based nanostructured electronic materials. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2017, 35, 041402.	0.9	11
18	Control of dislocation morphology and lattice distortion in Na-flux GaN crystals. Journal of Applied Physics, 2017, 122, 105303.	1.1	7

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19	Quantification of local strain distributions in nanoscale strained SiGe FinFET structures. Journal of Applied Physics, 2017, 122, .	1.1	9
20	Independent control of electrical and heat conduction by nanostructure designing for Si-based thermoelectric materials. Scientific Reports, 2016, 6, 22838.	1.6	45
21	Fabrication of Carrier-Doped Si Nanoarchitecture for Thermoelectric Material by Ultrathin SiO <sub>2</sub> Film Technique. Journal of Electronic Materials, 2016, 45, 1914-1920.	1.0	13
22	Positional dependence of defect distribution in semipolar hydride vapor phase epitaxy-GaN films grown on patterned sapphire substrates. Japanese Journal of Applied Physics, 2016, 55, 05FA07.	0.8	3
23	Microstructural analysis of an epitaxial AlN thick film/trench-patterned template by three-dimensional reciprocal lattice space mapping technique. Applied Physics Express, 2016, 9, 111001.	1.1	6
24	Epitaxial iron oxide nanocrystals with memory function grown on Si substrates. Applied Physics Express, 2016, 9, 055508.	1.1	10
25	Slit Length Dependence of rf-SQUID Resonant Frequency. Physics Procedia, 2015, 65, 181-184.	1.2	1
26	Dislocation confinement in the growth of Na flux GaN on metalorganic chemical vapor deposition-GaN. Journal of Applied Physics, 2015, 118, .	1.1	15
27	Phonon transport control by nanoarchitecture including epitaxial Ge nanodots for Si-based thermoelectric materials. Scientific Reports, 2015, 5, 14490.	1.6	71
28	Thickness and growth condition dependence of crystallinity in semipolar (20°±21) GaN films grown on (22°±43) patterned sapphire substrates. Physica Status Solidi (B): Basic Research, 2015, 252, 1142-1148.	0.7	5
29	Crystalline property analysis of semipolar (20°±21) GaN on (22°±43) patterned sapphire substrate by X-ray microdiffraction and transmission electron microscopy. Physica Status Solidi (B): Basic Research, 2015, 252, 1149-1154.	0.7	6
30	Anomalous reduction of thermal conductivity in coherent nanocrystal architecture for silicon thermoelectric material. Nano Energy, 2015, 12, 845-851.	8.2	150
31	Fabrication of Si Thermoelectric Nanomaterials Containing Ultrasmall Epitaxial Ge Nanodots with an Ultrahigh Density. Journal of Electronic Materials, 2015, 44, 2015-2020.	1.0	13
32	Myoglobin-based non-precious metal carbon catalysts for an oxygen reduction reaction. Journal of Porphyrins and Phthalocyanines, 2015, 19, 510-516.	0.4	7
33	Microscopic crystalline structure of a thick AlN film grown on a trench-patterned AlN/Al <sub>2</sub> O <sub>3</sub> template. Journal of Crystal Growth, 2015, 411, 38-44.	0.7	8
34	Formation and optical properties of Ge films grown on Si(111) substrates using nanocontact epitaxy. Applied Surface Science, 2015, 325, 170-174.	3.1	3
35	Anisotropic crystalline morphology of epitaxial thick AlN films grown on triangular-striped AlN/sapphire template. Physica Status Solidi (A) Applications and Materials Science, 2014, 211, 731-735.	0.8	3
36	Improvement of current drive of Ge-nMISFETs by epitaxially grown n <sup>+</sup> -Ge:P source and drain. , 2014, , .		0

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37	Improvement effect of electrical properties in post-annealed wafer-bonded Ge(001)-OI substrate. Physica Status Solidi (A) Applications and Materials Science, 2014, 211, 601-605.	0.8	1
38	Control of epitaxial growth of Fe-based nanocrystals on Si substrates using well-controlled nanometer-sized interface. Journal of Applied Physics, 2014, 115, 044301.	1.1	9
39	Cross-sectional X-ray microdiffraction study of a thick AlN film grown on a trench-patterned AlN/Al <sub>2</sub> O <sub>3</sub> template. Journal of Crystal Growth, 2013, 381, 37-42.	0.7	10
40	Influence of nanometer-sized interface on reaction of iron nanocrystals epitaxially grown on silicon substrates with oxygen gas. Journal of Applied Physics, 2013, 114, .	1.1	8
41	First demonstration of threshold voltage control by sub-1V back-gate biasing for thin body and buried-oxide (TBB) Ge-on-insulator (GOI) MOSFETs for low-power operation. , 2012, , .		4
42	Fabrication of Bonded GeOI Substrates with Thin Al <sub>2</sub> O <sub>3</sub> /SiO <sub>2</sub> Buried Oxide Layers. , 2012, , .		0
43	Characterization of Ge Films on Si(001) Substrates Grown by Nanocontact Epitaxy. , 2012, , .		0
44	Improvement Effect of Electrical Properties in Post-Annealed Wafer-Bonded Ge(001)-OI Substrate. , 2012, , .		0
45	X-ray microdiffraction investigation of crystallinity and strain relaxation in Ge thin lines selectively grown on Si(001) substrates. Solid-State Electronics, 2011, 60, 26-30.	0.8	4
46	Ge <sup>113</sup> Sn stressors for strained-Ge CMOS. Solid-State Electronics, 2011, 60, 53-57.	0.8	33
47	Self-organization of two-dimensional SiGe nanodot arrays using selective etching of pure-edge dislocation network. Journal of Applied Physics, 2011, 109, 044301-044301-4.	1.1	2
48	Nanometer-Scale Characterization Technique for Si Nanoelectric Materials Using Synchrotron Radiation Microdiffraction. Key Engineering Materials, 2011, 470, 104-109.	0.4	6
49	Structural Change during the Formation of Directly Bonded Silicon Substrates. Key Engineering Materials, 2011, 470, 158-163.	0.4	0
50	Silicon-germanium (SiGe) crystal growth using molecular beam epitaxy. , 2011, , 83-116.		0
51	Structural change of direct silicon bonding substrates by interfacial oxide out-diffusion annealing. Thin Solid Films, 2010, 518, S147-S150.	0.8	7
52	Metal-organic chemical vapor deposition of high-dielectric-constant praseodymium oxide films using a cyclopentadienyl precursor. Applied Physics Letters, 2010, 96, 012105.	1.5	16
53	Characterization of wafer-bonded substrates for advanced channels in Si-based MOSFET. , 2010, , .		1
54	High-resolution X-ray microdiffraction analysis of local strain in semiconductor materials. , 2010, , .		1

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55	(Invited) Assessment of Ge <sub>1-x</sub> Sn <sub>x</sub> Alloys for Strained Ge CMOS Devices. ECS Transactions, 2010, 33, 529-535.	0.3	13
56	Mechanical Properties and Chemical Reactions at the Directly Bonded Si-Si Interface. Japanese Journal of Applied Physics, 2009, 48, 011202.	0.8	11
57	Control of Sn Precipitation and Strain Relaxation in Compositionally Step-Graded Ge <sub>1-x</sub> Sn <sub>x</sub> Buffer Layers for Tensile-Strained Ge Layers. Japanese Journal of Applied Physics, 2009, 48, 04C130.	0.8	23
58	Microstructures in directly bonded Si substrates. Solid-State Electronics, 2009, 53, 837-840.	0.8	7
59	Control of Dislocations and Sn Precipitations for Fabrication of Tensile-strained Ge on Ge <sub>1-x</sub> Sn <sub>x</sub> Buffer Layer. Transactions of the Materials Research Society of Japan, 2009, 34, 301-304.	0.2	0
60	Tensile strained Ge layers on strain-relaxed Ge <sub>1-x</sub> Sn <sub>x</sub> virtual Ge substrates. Thin Solid Films, 2008, 517, 159-162.	0.8	41
61	Growth of highly strain-relaxed Ge <sub>1-x</sub> Sn <sub>x</sub> virtual Ge by a Sn precipitation controlled compositionally step-graded method. Applied Physics Letters, 2008, 92, .	1.5	112
62	Characterization of deposited materials formed by focused ion beam-induced chemical vapor deposition using an AuSi alloyed metal source. , 2007, , .		0
63	Growth and structure evaluation of strain-relaxed Ge <sub>1-x</sub> Sn <sub>x</sub> buffer layers grown on various types of substrates. Semiconductor Science and Technology, 2007, 22, S231-S235.	1.0	70
64	Local strain in SiGe/Si heterostructures analyzed by X-ray microdiffraction. Thin Solid Films, 2006, 508, 128-131.	0.8	27
65	Development of High-Angular-Resolution Microdiffraction System for Reciprocal Space Map Measurements. Japanese Journal of Applied Physics, 2006, 45, L1054-L1056.	0.8	29
66	Pure-edge dislocation network for strain-relaxed SiGe/Si(001) systems. Applied Physics Letters, 2005, 86, 221916.	1.5	58
67	Defect structure in selectively grown GaN films with low threading dislocation density. Applied Physics Letters, 1997, 71, 2259-2261.	1.5	407
68	Thick GaN Epitaxial Growth with Low Dislocation Density by Hydride Vapor Phase Epitaxy. Japanese Journal of Applied Physics, 1997, 36, L899-L902.	0.8	885
69	Ultrathin Tantalum Oxide Capacitor Process Using Oxygen Plasma Annealing. Journal of the Electrochemical Society, 1994, 141, 1246-1251.	1.3	69
70	Ultrathin Tantalum Oxide Capacitor Dielectric Layers Fabricated Using Rapid Thermal Nitridation prior to Low Pressure Chemical Vapor Deposition. Journal of the Electrochemical Society, 1993, 140, 1617-1625.	1.3	86
71	Microscopic Structure of Directly Bonded Silicon Substrates. Key Engineering Materials, 0, 470, 164-170.	0.4	1
72	Local Strain Distribution in AlN Thick Films Analyzed by X-Ray Microdiffraction. Materials Science Forum, 0, 783-786, 2016-2021.	0.3	0