

Toshikazu Nishida

List of Publications by Year in descending order

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155
papers

5,623
citations

101543

36
h-index

88630

70
g-index

156
all docs

156
docs citations

156
times ranked

4826
citing authors

#	ARTICLE	IF	CITATIONS
1	Thermal retention of atomic layer deposited Hf _{0.5} Zr _{0.5} films using H ₂ O and O ₂ plasma oxidation methods. Applied Physics Letters, 2021, 118, .	3.3	6
2	Fabrication and non-destructive characterization of through-plastic-via (TPV) in flexible hybrid electronics. Flexible and Printed Electronics, 2021, 6, 025001.	2.7	1
3	High-resolution stereolithography using a static liquid constrained interface. Communications Materials, 2021, 2, .	6.9	21
4	Preisach modeling of imprint on hafnium zirconium oxide ferroelectric capacitors. Journal of Applied Physics, 2021, 130, .	2.5	2
5	Characterization of Bending, Crease, Aging, and Immersion Effects on Flexible Screen-Printed Silver Traces. IEEE Transactions on Components, Packaging and Manufacturing Technology, 2020, 10, 444-456.	2.5	3
6	Effect of a Backing Material on the Bendability of Flexible Substrates with Passive SMD components. , 2020, , .		0
7	Screen-printable and stretchable hard magnetic ink formulated from barium hexaferrite nanoparticles. Journal of Materials Chemistry C, 2020, 8, 12133-12139.	5.5	1
8	Screen-Printed Inductive Silver Ink Strain Sensor on Stretchable TPU Substrate. , 2020, , .		2
9	A High-Q 30nm-Thick MFM Resonator Using Ferroelectric Hafnium Zirconium Oxide. , 2020, , .		1
10	Data retention and low voltage operation of Al ₂ O ₃ /Hf _{0.5} Zr _{0.5} O ₂ based ferroelectric tunnel junctions. Nanotechnology, 2020, 31, 39LT01.	2.6	31
11	A 30-nm thick integrated hafnium zirconium oxide nano-electro-mechanical membrane resonator. Applied Physics Letters, 2020, 116, .	3.3	17
12	Microfluidic Paper-Based Analytical Device for Histidine Determination. Applied Biochemistry and Biotechnology, 2020, 192, 812-821.	2.9	9
13	Effect of Forming Gas Furnace Annealing on the Ferroelectricity and Wake-Up Effect of Hf _{0.5} Zr _{0.5} O ₂ Thin Films. ECS Journal of Solid State Science and Technology, 2020, 9, 024011.	1.8	14
14	Effect of in situ hydrogen plasma on the ferroelectricity of hafnium zirconium oxide films. Applied Physics Letters, 2020, 116, 032901.	3.3	15
15	10.1063/1.5134856.1. , 2020, , .		0
16	An ultrathin integrated nanoelectromechanical transducer based on hafnium zirconium oxide. Nature Electronics, 2019, 2, 506-512.	26.0	42
17	A 10nm-Thick Hafnium Zirconium Oxide Piezoelectric Transducer for Extreme Miniaturization of Integrated Sensors and Actuators. , 2019, , .		0
18	High-Q UHF and SHF Bulk Acoustic Wave Resonators with Ten-Nanometer Hf _{0.5} Zr _{0.5} O ₂ Ferroelectric Transducer. , 2019, , .		6

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19	A Non-Reciprocal Filter Using Asymmetrically Transduced Micro-Acoustic Resonators. IEEE Electron Device Letters, 2019, 40, 800-803.	3.9	10
20	Flexible screen-printed coils for wireless power transfer using low-frequency magnetic fields. Journal of Micromechanics and Microengineering, 2019, 29, 084006.	2.6	15
21	Effect of furnace annealing on the ferroelectricity of Hf _{0.5} Zr _{0.5} O ₂ thin films. Thin Solid Films, 2019, 677, 142-149.	1.8	12
22	Effect of Mechanical Cycling on the Magnetic Properties of Permalloy Films Electroplated on Stretchable Substrates. , 2019, , .		2
23	Estimation of through-Plastic Via (TPV) Filling through Computed Tomography for Dielectrics and Conductive Inks in Flexible Printed Electronics. ECS Meeting Abstracts, 2019, , .	0.0	0
24	Airbrushed Dipole RF Strain Sensor Antenna on a Stretchable Polyurethane Substrate. , 2018, , .		7
25	Reliability of Passive Printed Dipole Antennas Under Extreme Environments. , 2018, , .		5
26	A Nano-Mechanical Resonator with 10nm Hafnium-Zirconium Oxide Ferroelectric Transducer. , 2018, , .		9
27	High-temperature and high-field cycling reliability of PZT films embedded within 130 nm CMOS. , 2018, , .		1
28	Airbrushing and surface modification for fabricating flexible electronics on polydimethylsiloxane. Journal of Micromechanics and Microengineering, 2018, 28, 125014.	2.6	14
29	Tiered deposition of sub-50nm ferroelectric Hf _{1-x} Zr _x O ₂ films on metal and semiconductor substrates. Applied Physics Letters, 2018, 112, .	3.3	30
30	Doped Hf _{0.5} Zr _{0.5} O ₂ for high efficiency integrated supercapacitors. Applied Physics Letters, 2017, 110, .	3.3	87
31	Phononic detection of morphological phase transition in atomic-layered Hafnium-Zirconium-Oxide. , 2017, , .		1
32	Annealing behavior of ferroelectric Si-doped HfO ₂ thin films. Thin Solid Films, 2016, 615, 139-144.	1.8	68
33	Mixed Al and Si doping in ferroelectric HfO ₂ thin films. Applied Physics Letters, 2015, 107, .	3.3	34
34	Ferroelectric Si-Doped HfO ₂ Device Properties on Highly Doped Germanium. IEEE Electron Device Letters, 2015, 36, 766-768.	3.9	57
35	TaN interface properties and electric field cycling effects on ferroelectric Si-doped HfO ₂ thin films. Journal of Applied Physics, 2015, 117, .	2.5	165
36	Low-power electrically controlled thermoelastic microvalves integrated in thermoplastic microfluidic devices. Microfluidics and Nanofluidics, 2015, 19, 1385-1394.	2.2	9

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37	Structure of 3Åat.% and 9Åat.% Si-doped HfO ₂ from combined refinement of X-ray and neutron diffraction patterns. Journal of Alloys and Compounds, 2015, 646, 655-661.	5.5	8
38	Abiotic-biotic characterization of Pt/Ir microelectrode arrays in chronic implants. Frontiers in Neuroengineering, 2014, 7, 2.	4.8	159
39	Electrode impedance analysis of chronic tungsten microwire neural implants: understanding abiotic vs. biotic contributions. Frontiers in Neuroengineering, 2014, 7, 13.	4.8	67
40	Crystal structure of Si-doped HfO ₂ . Journal of Applied Physics, 2014, 115, .	2.5	18
41	Mechanical stress effects on Pb(Zr,Ti)O ₃ thin-film ferroelectric capacitors embedded in a standard complementary metal-oxide-semiconductor process. Applied Physics Letters, 2014, 104, 222908.	3.3	3
42	Ferroelectric phenomena in Si-doped HfO ₂ thin films with TiN and Ir electrodes. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2014, 32, .	1.2	110
43	The use of polyurethane as an elastomer in thermoplastic microfluidic devices and the study of its creep properties. Electrophoresis, 2014, 35, 289-297.	2.4	23
44	The effects of layering in ferroelectric Si-doped HfO ₂ thin films. Applied Physics Letters, 2014, 105, .	3.3	54
45	Development of All-Plastic Microvalve Array for Multiplexed Immunoassay. , 2014, , .		0
46	Strain Effects in AlGaIn/GaN HEMTs. , 2013, , 381-429.		5
47	A Highly Compliant Serpentine Shaped Polyimide Interconnect for Front-End Strain Relief in Chronic Neural Implants. Frontiers in Neurology, 2013, 4, 124.	2.4	16
48	Process dependence of 1/f noise and defects in ion implanted p-type piezoresistors. Journal of Applied Physics, 2012, 112, 033702.	2.5	0
49	Physical insights on comparable electron transport in (100) and (110) double-gate fin field-effect transistors. Applied Physics Letters, 2012, 100, .	3.3	5
50	Microfluidic Valve Arrays in Thermoplastic Devices. , 2012, , .		1
51	Electrode Failure: Tissue, Electrical, and Material Responses. IEEE Pulse, 2012, 3, 30-33.	0.3	23
52	System Modeling of Piezoelectric Energy Harvesters. IEEE Transactions on Power Electronics, 2012, 27, 790-802.	7.9	16
53	Size- and Orientation-Dependent Strain Effects on Ballistic Si p-Type Nanowire Field-Effect Transistors. IEEE Nanotechnology Magazine, 2012, 11, 1231-1238.	2.0	1
54	Comprehensive characterization of tungsten microwires in chronic neurocortical implants. , 2012, 2012, 755-8.		4

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55	Comprehensive characterization and failure modes of tungsten microwire arrays in chronic neural implants. <i>Journal of Neural Engineering</i> , 2012, 9, 056015.	3.5	254
56	Chemical-Assisted Bonding of Thermoplastics/Elastomer for Fabricating Microfluidic Valves. <i>Analytical Chemistry</i> , 2011, 83, 446-452.	6.5	56
57	Strain induced changes in the gate leakage current of n-channel metal-oxide-semiconductor field-effect transistors. <i>Journal of Applied Physics</i> , 2011, 110, 014511.	2.5	2
58	Corrosion of tungsten microelectrodes used in neural recording applications. <i>Journal of Neuroscience Methods</i> , 2011, 198, 158-171.	2.5	142
59	Coupling biotic and abiotic metrics to create a testbed for predicting neural electrode performance. , 2011, 2011, 3020-3.		9
60	Thermally Actuated Plastic Microfluidic Valves. , 2010, , .		0
61	Simulation of AlGaIn/GaN high-electron-mobility transistor gauge factor based on two-dimensional electron gas density and electron mobility. <i>Journal of Applied Physics</i> , 2010, 108, .	2.5	84
62	Extraction of AlGaIn/GaN HEMT Gauge Factor in the Presence of Traps. <i>IEEE Electron Device Letters</i> , 2010, 31, 665-667.	3.9	21
63	Strain effects on three-dimensional, two-dimensional, and one-dimensional silicon logic devices: Predicting the future of strained silicon. <i>Journal of Applied Physics</i> , 2010, 108, 093716.	2.5	52
64	An implantable integrated low-power amplifier-microelectrode array for Brain-Machine Interfaces. , 2010, 2010, 1816-9.		4
65	Overview: The Age of Strained Devices. , 2010, , 1-6.		1
66	Effect of mechanical strain on 1/f noise in metal-oxide semiconductor field-effect transistors. <i>Journal of Applied Physics</i> , 2009, 105, 054504.	2.5	3
67	Reliability of HfSiON gate dielectric silicon MOS devices under [110] mechanical stress: Time dependent dielectric breakdown. <i>Journal of Applied Physics</i> , 2009, 105, 044503.	2.5	4
68	Laser-Induced Current Transients in Strained-Si Diodes. <i>IEEE Transactions on Nuclear Science</i> , 2009, 56, 3203-3209.	2.0	10
69	Demonstration of a wireless, self-powered, electroacoustic liner system. <i>Journal of the Acoustical Society of America</i> , 2009, 125, 873-881.	1.1	21
70	Design of an implantable intracortical microelectrode system for brain-machine interfaces. , 2009, , .		1
71	Manufacturable plastic microfluidic valves using thermal actuation. <i>Lab on A Chip</i> , 2009, 9, 3082.	6.0	38
72	Nonlinear model and system identification of a capacitive dual-backplate MEMS microphone. <i>Journal of Sound and Vibration</i> , 2008, 309, 276-292.	3.9	39

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73	Acoustic energy harvesting using an electromechanical Helmholtz resonator. Journal of the Acoustical Society of America, 2008, 123, 1983-1990.	1.1	136
74	Strain additivity in III-V channels for CMOSFETs beyond 22nm technology node. , 2008, , .		21
75	An Instrumentation Grade MEMS Condenser Microphone for Aeroacoustic Measurements. , 2008, , .		1
76	A MEMS Shear Stress Sensor for Turbulence Measurements. , 2008, , .		7
77	Harmonic Balance Nonlinear Identification of a Capacitive Dual-Backplate MEMS Microphone. Journal of Microelectromechanical Systems, 2008, 17, 698-708.	2.5	16
78	Temperature dependence of enhanced hole mobility in uniaxial strained p-channel metal-oxide-semiconductor field-effect transistors and insight into the physical mechanisms. Applied Physics Letters, 2008, 93, 243503.	3.3	6
79	Technology and Signal Processing for Brain-Machine Interfaces. IEEE Signal Processing Magazine, 2008, 25, 29-40.	5.6	37
80	Total Ionizing Dose Effects on Strained HfO_2 -Based nMOSFETs. IEEE Transactions on Nuclear Science, 2008, 55, 2981-2985.	2.0	11
81	Flexible polymer substrate and tungsten microelectrode array for an implantable neural recording system. , 2008, 2008, 3158-61.		7
82	Strain induced changes in gate leakage current and dielectric constant of nitrided Hf-silicate metal oxide semiconductor capacitors. Applied Physics Letters, 2008, 93, 153505.	3.3	11
83	Comparison between high-field piezoresistance coefficients of Si metal-oxide-semiconductor field-effect transistors and bulk Si under uniaxial and biaxial stress. Journal of Applied Physics, 2008, 103, 113704.	2.5	36
84	Impact of mechanical stress on direct and trap-assisted gate leakage currents in p-type silicon metal-oxide-semiconductor capacitors. Applied Physics Letters, 2008, 92, 173507.	3.3	29
85	Impact of mechanical stress on gate tunneling currents of germanium and silicon p-type metal-oxide-semiconductor field-effect transistors and metal gate work function. Journal of Applied Physics, 2008, 103, .	2.5	28
86	An Endoscopic Nonlinear Optical Imaging Probe Based on 2-D Micromirror. , 2007, , .		2
87	Mechanical stress altered electron gate tunneling current and extraction of conduction band deformation potentials for germanium. Journal of Applied Physics, 2007, 102, 104507.	2.5	13
88	Microfabrication of a wall shear stress sensor using side-implanted piezoresistive tethers. , 2007, , .		3
89	LVD micromirror for rapid reference scanning in optical coherence tomography. , 2007, , .		0
90	Low Frequency Pulsed Resonant Converter for Energy Harvesting. IEEE Transactions on Power Electronics, 2007, 22, 63-68.	7.9	59

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91	A multiple degree of freedom electromechanical Helmholtz resonator. Journal of the Acoustical Society of America, 2007, 122, 291-301.	1.1	55
92	A Micromachined Dual-Backplate Capacitive Microphone for Aeroacoustic Measurements. Journal of Microelectromechanical Systems, 2007, 16, 1289-1302.	2.5	72
93	Hole mobility in silicon inversion layers: Stress and surface orientation. Journal of Applied Physics, 2007, 102, .	2.5	87
94	Development of a micromachined piezoelectric microphone for aeroacoustics applications. Journal of the Acoustical Society of America, 2007, 122, 3428-3436.	1.1	88
95	Gate Direct Tunneling Currents in Uniaxial Stressed MOSFETs. , 2007, , .		4
96	Piezoresistance Coefficients of (100) Silicon nMOSFETs Measured at Low and High (~ 1.5 GPa) Channel Stress. IEEE Electron Device Letters, 2007, 28, 58-61.	3.9	78
97	Design, Modeling and Simulation of a Closed-Loop Controller for a Dual Backplate MEMS Capacitive Microphone. , 2007, , .		1
98	Florida Wireless Implantable Recording Electrodes (FWIRE) for Brain Machine Interfaces. , 2007, , .		19
99	Physics of strain effects in semiconductors and metal-oxide-semiconductor field-effect transistors. Journal of Applied Physics, 2007, 101, 104503.	2.5	431
100	A hydrogen leakage detection system using self-powered wireless hydrogen sensor nodes. Solid-State Electronics, 2007, 51, 1018-1022.	1.4	16
101	Development of a MEMS Dual Backplate Capacitive Microphone for Aeroacoustic Measurements. , 2006, , .		3
102	A Self-Powered Wireless Active Acoustic Liner. , 2006, , .		3
103	Measurement of conduction band deformation potential constants using gate direct tunneling current in n-type metal oxide semiconductor field effect transistors under mechanical stress. Applied Physics Letters, 2006, 89, 073509.	3.3	38
104	Piezoresistive Microphone Design Pareto Optimization: Tradeoff Between Sensitivity and Noise Floor. Journal of Microelectromechanical Systems, 2006, 15, 1632-1643.	2.5	41
105	Future of Strained Si/Semiconductors in Nanoscale MOSFETs. , 2006, , .		58
106	A MEMS acoustic energy harvester. Journal of Micromechanics and Microengineering, 2006, 16, S174-S181.	2.6	199
107	Modeling and optimization of a side-implanted piezoresistive shear stress sensor. , 2006, , .		9
108	Uniaxial-process-induced strained-Si: extending the CMOS roadmap. IEEE Transactions on Electron Devices, 2006, 53, 1010-1020.	3.0	516

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109	Structural modifications in chronic microwire electrodes for cortical neuroprosthetics: a case study. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2006, 14, 217-221.	4.9	37
110	Power Converters for Piezoelectric Energy Extraction. , 2006, , 597.		8
111	Sources of excess noise in silicon piezoresistive microphones. Journal of the Acoustical Society of America, 2006, 119, 2710-2720.	1.1	35
112	Strain-induced changes in the gate tunneling currents in p-channel metal-oxide-semiconductor field-effect transistors. Applied Physics Letters, 2006, 88, 052108.	3.3	35
113	Design and Fabrication of a Flexible Substrate Microelectrode Array for Brain Machine Interfaces. , 2006, 2006, 2966-9.		21
114	Noise Modeling and Characterization of Piezoresistive Transducers. , 2006, , .		0
115	Design and Fabrication of a Flexible Substrate Microelectrode Array for Brain Machine Interfaces. Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2006, , .	0.5	0
116	Nonlinear System Identification of a MEMS Dual-Backplate Capacitance Microphone by Harmonic Balance Method. , 2005, , 269.		2
117	Dynamic calibration technique for thermal shear-stress sensors with mean flow. Experiments in Fluids, 2005, 39, 56-65.	2.4	35
118	AlGaIn/GaN high electron mobility transistor structures for pressure and pH sensing. Physica Status Solidi C: Current Topics in Solid State Physics, 2005, 2, 2684-2687.	0.8	8
119	Nonlinear Identification of a Capacitive Dual-Backplate MEMS Microphone. , 2005, , 441.		6
120	Design and Characterization of a Micromachined Piezoelectric Microphone. , 2005, , .		7
121	Wideband RELAX and wideband CLEAN for aeroacoustic imaging. Journal of the Acoustical Society of America, 2004, 115, 757-767.	1.1	49
122	Constant-beamwidth and constant-powerwidth wideband robust Capon beamformers for acoustic imaging. Journal of the Acoustical Society of America, 2004, 116, 1621-1631.	1.1	69
123	A Micromachined Geometric Moiré Interferometric Floating-Element Shear Stress Sensor. , 2004, , .		20
124	MEMS Shear Stress Sensors: Promise and Progress. , 2004, , .		48
125	A directional acoustic array using silicon micromachined piezoresistive microphones. Journal of the Acoustical Society of America, 2003, 113, 289-298.	1.1	37
126	Effect of external strain on the conductivity of AlGaIn/GaN high-electron-mobility transistors. Applied Physics Letters, 2003, 83, 4845-4847.	3.3	97

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127	Piezoresistive Microphone Design Pareto Optimization: Tradeoff Between Sensitivity and Noise Floor. , 2003, , .		1
128	A MEMS-Based Sound Intensity Probe. , 2003, , .		0
129	Lumped Element Modeling of Piezoelectric-Driven Synthetic Jet Actuators. AIAA Journal, 2003, 41, 240-247.	2.6	274
130	Characterization of a Silicon-Micromachined Thermal Shear-Stress Sensor. AIAA Journal, 2002, 40, 1099-1104.	2.6	55
131	Characterization of a Compliant-Backplate Helmholtz Resonator for An Electromechanical Acoustic Liner. International Journal of Aeroacoustics, 2002, 1, 183-205.	1.3	37
132	Process compatible polysilicon-based electrical through-wafer interconnects in silicon substrates. Journal of Microelectromechanical Systems, 2002, 11, 631-640.	2.5	81
133	Characterization of a silicon-micromachined thermal shear-stress sensor. AIAA Journal, 2002, 40, 1099-1104.	2.6	2
134	Dynamic calibration technique for thermal shear stress sensors with variable mean flow. , 2000, , .		9
135	Development of a Wafer-Bonded, Silicon-Nitride Membrane Thermal Shear-Stress Sensor with Platinum Sensing Element. , 2000, , .		2
136	A method for screening potential antioxidant activity. Journal of Biotechnology, 1996, 51, 149-155.	3.8	7
137	Direct-current measurements of oxide and interface traps on oxidized silicon. IEEE Transactions on Electron Devices, 1995, 42, 1657-1662.	3.0	171
138	Sequential substrate and channel hot electron injection to separate oxide and interface traps in n-MOSTs. Solid-State Electronics, 1995, 38, 105-113.	1.4	4
139	Hydrogenation of boron in silicon during low temperature gas and liquid phase processing. Journal of Applied Physics, 1994, 76, 332-335.	2.5	2
140	Depth profile of thermal donor in boron-doped Czochralski-grown silicon. Journal of Applied Physics, 1994, 75, 7931-7934.	2.5	3
141	AlN Powder Synthesis via Nitriding Reaction of Aluminum Sub-Chloride. Materials Transactions, JIM, 1993, 34, 541-547.	0.9	4
142	Positive charge generation in SiO ₂ by electron-impact emission of trapped electrons. Journal of Applied Physics, 1992, 72, 4683-4695.	2.5	36
143	BiMOS and SMOSC structures for MOS parameter measurement. Solid-State Electronics, 1992, 35, 357-369.	1.4	6
144	Oxide field and thickness dependence of trap generation in 9-30 nm dry and dry/wet/dry oxides. Journal of Applied Physics, 1991, 69, 3986-3994.	2.5	33

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145	Characterization of Failure Mechanisms and Failure Rate of Oxide Wearout by Hot Electron Using D.C. and A.C. Substrate Electron Injection. Materials Research Society Symposia Proceedings, 1991, 225, 271.	0.1	0
146	Tunneling and thermal emission of electrons from a distribution of shallow traps in SiO ₂ . Applied Physics Letters, 1991, 58, 1262-1264.	3.3	36
147	A new measurement method for trap properties in insulators and semiconductors: Using electric field stimulated trap-to-band tunneling transitions in SiO ₂ . Journal of Applied Physics, 1991, 70, 6864-6876.	2.5	25
148	Observation of threshold oxide electric field for trap generation in oxide films on silicon. Journal of Applied Physics, 1988, 63, 5882-5884.	2.5	29
149	Thermal emission and capture rates of holes at the gold donor level in silicon. Journal of Applied Physics, 1987, 62, 4773-4780.	2.5	7
150	A physically based mobility model for MOSFET numerical simulation. IEEE Transactions on Electron Devices, 1987, 34, 310-320.	3.0	63
151	An analytical model for the thermoelastic actuation of composite diaphragms. , 0, , .		2
152	Optical Flow Sensor Using Geometric Moiré Interferometry. , 0, , .		0
153	Key differences for process-induced uniaxial vs. substrate-induced biaxial stressed Si and Ge channel MOSFETs. , 0, , .		109
154	Converter and controller for micro-power energy harvesting. , 0, , .		8
155	Surface and bulk micromachined dual back-plate condenser microphone. , 0, , .		11