

Tetsuzo Ueda

List of Publications by Year in descending order

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145
papers

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186265

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63
g-index

145
all docs

145
docs citations

145
times ranked

3047
citing authors

#	ARTICLE	IF	CITATIONS
1	GaN-on-Si Power Technology: Devices and Applications. IEEE Transactions on Electron Devices, 2017, 64, 779-795.	3.0	1,017
2	Gate Injection Transistor (GIT) – A Normally-Off AlGaIn/GaN Power Transistor Using Conductivity Modulation. IEEE Transactions on Electron Devices, 2007, 54, 3393-3399.	3.0	833
3	GaN on Si Technologies for Power Switching Devices. IEEE Transactions on Electron Devices, 2013, 60, 3053-3059.	3.0	341
4	Current-collapse-free operations up to 850 V by GaN-GIT utilizing hole injection from drain. , 2015, , .		112
5	99.3% Efficiency of three-phase inverter for motor drive using GaN-based Gate Injection Transistors. , 2011, , .		111
6	Suppression of current collapse by hole injection from drain in a normally-off GaN-based hybrid-drain-embedded gate injection transistor. Applied Physics Letters, 2015, 107, .	3.3	104
7	Crystal growth of SiC by step-controlled epitaxy. Journal of Crystal Growth, 1990, 104, 695-700.	1.5	100
8	GaN transistors on Si for switching and high-frequency applications. Japanese Journal of Applied Physics, 2014, 53, 100214.	1.5	94
9	Time- and Field-Dependent Trapping in GaN-Based Enhancement-Mode Transistors With p-Gate. IEEE Electron Device Letters, 2012, 33, 375-377.	3.9	93
10	Recent advances in GaN transistors for future emerging applications. Physica Status Solidi (A) Applications and Materials Science, 2009, 206, 1221-1227.	1.8	86
11	AlGaIn/GaN Power HFET on Silicon Substrate With Source-Via Grounding (SVG) Structure. IEEE Transactions on Electron Devices, 2005, 52, 1963-1968.	3.0	77
12	High-Extraction-Efficiency Blue Light-Emitting Diode Using Extended-Pitch Photonic Crystal. Japanese Journal of Applied Physics, 2004, 43, 5809-5813.	1.5	70
13	Nonpolar (11-20) plane AlGaIn-GaN heterojunction field effect transistors on (1-102) plane sapphire. Journal of Applied Physics, 2007, 102, .	2.5	67
14	GaN power devices: current status and future challenges. Japanese Journal of Applied Physics, 2019, 58, SC0804.	1.5	67
15	1.7 kV/1.0 m ² cm ² normally-off vertical GaN transistor on GaN substrate with regrown p-GaN/AlGaIn/GaN semipolar gate structure. , 2016, , .		65
16	Comprehensive study on initial thermal oxidation of GaN(0001) surface and subsequent oxide growth in dry oxygen ambient. Journal of Applied Physics, 2017, 121, .	2.5	63
17	A compact GaN-based DC-DC converter IC with high-speed gate drivers enabling high efficiencies. , 2014, , .		61
18	Unlimited High Breakdown Voltage by Natural Super Junction of Polarized Semiconductor. IEEE Electron Device Letters, 2008, 29, 1087-1089.	3.9	57

#	ARTICLE	IF	CITATIONS
19	AlN Passivation Over AlGaIn/GaN HFETs for Surface Heat Spreading. IEEE Transactions on Electron Devices, 2010, 57, 980-985.	3.0	57
20	GaN monolithic inverter IC using normally-off gate injection transistors with planar isolation on Si substrate. , 2009, , .		55
21	GaN power switching devices. , 2010, , .		49
22	Effects of Deep Trapping States at High Temperatures on Transient Performance of AlGaIn/GaN Heterostructure Field-Effect Transistors. Japanese Journal of Applied Physics, 2013, 52, 04CF07.	1.5	49
23	Reliability of hybrid-drain-embedded gate injection transistor. , 2017, , .		48
24	Effect of nitrogen incorporation into Al-based gate insulators in AlON/AlGaIn/GaN metalâ€oxideâ€semiconductor structures. Applied Physics Express, 2016, 9, 101002.	2.4	45
25	Separation of Thin GaN from Sapphire by Laser Lift-Off Technique. Japanese Journal of Applied Physics, 2011, 50, 041001.	1.5	40
26	AlGaIn/GaN MIS-HEMTs with HfO ₂ gate insulator. Physica Status Solidi C: Current Topics in Solid State Physics, 2007, 4, 2700-2703.	0.8	38
27	8300V Blocking Voltage AlGaIn/GaN Power HFET with Thick Poly-AlN Passivation. , 2007, , .		37
28	Blocking-voltage boosting technology for GaN transistors by widening depletion layer in Si substrates. , 2010, , .		36
29	650 V 3.1 m&#x003A9;cm<sup>2</sup> GaN-based monolithic bidirectional switch using normally-off gate injection transistor. , 2007, , .		34
30	Normallyâ€off AlGaIn/GaN MOSHFETs with HfO ₂ gate oxide. Physica Status Solidi C: Current Topics in Solid State Physics, 2008, 5, 1923-1925.	0.8	34
31	A DC-isolated gate drive IC with drive-by-microwave technology for power switching devices. , 2012, , .		34
32	Fabrication of normally-off mode GaN and AlGaIn/GaN MOSFETs with HfO ₂ gate insulator. Solid-State Electronics, 2010, 54, 79-83.	1.4	32
33	GaAs MMIC Chip-sets for mobile communication systems with on-chip ferroelectric capacitors. Integrated Ferroelectrics, 1995, 7, 45-60.	0.7	31
34	Reliability issues in GaN and SiC power devices. , 2014, , .		31
35	Separation of Thin GaN from Sapphire by Laser Lift-Off Technique. Japanese Journal of Applied Physics, 2011, 50, 041001.	1.5	31
36	Electron and hole-related luminescence processes in gate injection transistors. Applied Physics Letters, 2010, 97, .	3.3	30

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37	Nonpolar AlGaIn/GaN Metal-Insulator-Semiconductor Heterojunction Field-Effect Transistors With a Normally Off Operation. IEEE Transactions on Electron Devices, 2010, 57, 368-372.	3.0	30
38	High power 3-phase to 3-phase matrix converter using dual-gate GaN bidirectional switches. , 2018, , .		30
39	GaN TRANSISTORS FOR POWER SWITCHING AND MILLIMETER-WAVE APPLICATIONS. International Journal of High Speed Electronics and Systems, 2009, 19, 145-152.	0.7	29
40	Effects of hole traps on the temperature dependence of current collapse in a normally-OFF gate-injection transistor. Japanese Journal of Applied Physics, 2016, 55, 054101.	1.5	29
41	GaN-based natural super junction diodes with multi-channel structures. , 2008, , .		28
42	A Novel Thin Concentrator Photovoltaic With Microsolar Cells Directly Attached to a Lens Array. IEEE Journal of Photovoltaics, 2014, 4, 709-712.	2.5	28
43	Recent advances and future prospects on GaN-based power devices. , 2014, , .		28
44	GaN Gate Injection Transistor with integrated Si Schottky barrier diode for highly efficient DC-DC converters. , 2012, , .		26
45	High-Voltage Isolation Technique Using Fe Ion Implantation for Monolithic Integration of AlGaIn/GaN Transistors. IEEE Transactions on Electron Devices, 2013, 60, 771-775.	3.0	26
46	A Normally-off AlGaIn/GaN Transistor with $R_{on,A}=2.6\text{m}\Omega$ and $BV_{ds}=640\text{V}$ Using Conductivity Modulation. , 2006, , .		25
47	Chemical and Potential Bending Characteristics of SiN _x /AlGaIn Interfaces Prepared by In situ Metal-Organic Chemical Vapor Deposition. Japanese Journal of Applied Physics, 2007, 46, L590-L592.	1.5	24
48	Recent Advances in GaN Power Switching Devices. , 2010, , .		24
49	Crystalline SiN _x Ultrathin Films Grown on AlGaIn/GaN Using In Situ Metalorganic Chemical Vapor Deposition. Journal of Electronic Materials, 2008, 37, 628-634.	2.2	23
50	Vertical InGaIn-based blue light emitting diode with plated metal base fabricated using laser lift-off technique. Physica Status Solidi C: Current Topics in Solid State Physics, 2003, 0, 2219-2222.	0.8	22
51	Hot-Electron Trapping and Hole-Induced Detrapping in GaN-Based GITs and HD-GITs. IEEE Transactions on Electron Devices, 2019, 66, 337-342.	3.0	22
52	Vapor phase epitaxy growth of GaN on pulsed laser deposited ZnO buffer layer. Journal of Crystal Growth, 1998, 187, 340-346.	1.5	20
53	Lifetime evaluation for Hybrid-Drain-embedded Gate Injection Transistor (HD-GIT) under practical switching operations. , 2018, , .		20
54	A fully integrated GaN-based power IC including gate drivers for high-efficiency DC-DC Converters. , 2016, , .		19

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55	Reliability of Diode-Integrated SiC Power MOSFET(DioMOS). Microelectronics Reliability, 2016, 58, 158-163.	1.7	18
56	High-speed switching and current-collapse-free operation by GaN gate injection transistors with thick GaN buffer on bulk GaN substrates. , 2016, , .		17
57	Design and control of interface reaction between Al-based dielectrics and AlGaN layer in AlGaN/GaN metal-oxide-semiconductor structures. Applied Physics Letters, 2017, 111, .	3.3	16
58	Implementation of atomic layer deposition-based AlON gate dielectrics in AlGaN/GaN MOS structure and its physical and electrical properties. Japanese Journal of Applied Physics, 2018, 57, 06KA02.	1.5	16
59	Characteristics of Isolated DC-DC Converter With Class Phi-2 Inverter Under Various Load Conditions. IEEE Transactions on Power Electronics, 2019, 34, 10887-10897.	7.9	16
60	Laser lift-off of very thin AlGaN film from sapphire using selective decomposition of GaN interlayer. Applied Surface Science, 2003, 216, 512-518.	6.1	15
61	Recessed-Gate AlGaN/GaN HFETs With Lattice-Matched InAlGaN Quaternary Alloy Capping Layers. IEEE Transactions on Electron Devices, 2005, 52, 2124-2128.	3.0	15
62	Enhancement-mode n-channel GaN MOSFETs fabricated on p-GaN using HfO ₂ as gate oxide. Electronics Letters, 2007, 43, 952.	1.0	15
63	Depth profiles of strain in AlGaN/GaN heterostructures grown on Si characterized by electron backscatter diffraction technique. IEICE Electronics Express, 2007, 4, 775-781.	0.8	15
64	Present and future prospects of gan-based power electronics. , 2008, , .		15
65	12.5-Gbps Operation of 850-nm Vertical-Cavity Surface-Emitting Lasers With Reduced Parasitic Capacitance by BCB Planarization Technique. IEEE Journal of Quantum Electronics, 2006, 42, 785-790.	1.9	14
66	Low-voltage operation GaAs spike-gate power FET with high power-added efficiency. IEEE Transactions on Electron Devices, 1997, 44, 354-359.	3.0	13
67	Recent advances of high voltage AlGaN/GaN power HFETs. Proceedings of SPIE, 2009, , .	0.8	13
68	40mW / 1700V DioMOS (Diode in SiC MOSFET) for High Power Switching Applications. Materials Science Forum, 0, 778-780, 911-914.	0.3	13
69	Polarization Control of Vertical-Cavity Surface-Emitting Lasers by Utilizing Surface Plasmon Resonance. IEEE Journal of Quantum Electronics, 2007, 43, 1123-1128.	1.9	12
70	A one-chip isolated gate driver with an electromagnetic resonant coupler using a SPDT switch. , 2012, , .		12
71	High-efficiency thin and compact concentrator photovoltaics using micro-solar cells with via-holes sandwiched between thin lens-array and circuit board. Japanese Journal of Applied Physics, 2014, 53, 04ER01.	1.5	12
72	Novel high-current density GaN-based normally off transistor with tensile-strained quaternary InAlGaN barrier. Japanese Journal of Applied Physics, 2015, 54, 04DF09.	1.5	12

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73	Growth of thick gan films on rf sputtered ain buffer layer by hydride vapor phase epitaxy. Journal of Electronic Materials, 1997, 26, 898-902.	2.2	11
74	Improved hysteresis in a normally-off AlGaIn/GaN MOS heterojunction field-effect transistor with a recessed gate structure formed by selective regrowth. Japanese Journal of Applied Physics, 2017, 56, 091003.	1.5	11
75	Photoluminescence of Ti Doped 6H-SiC Grown by Vapor Phase Epitaxy. Japanese Journal of Applied Physics, 1991, 30, L289-L291.	1.5	10
76	Nonpolar AlGaIn/GaN HFETs with a normally off operation. Semiconductor Science and Technology, 2012, 27, 024019.	2.0	10
77	GaN-based Gate Injection Transistors for power switching applications. , 2014, , .		10
78	Integration of Photonic Crystals on GaN-Based Blue LEDs Using Silicon Mold Substrates. IEEE Journal of Quantum Electronics, 2008, 44, 984-989.	1.9	9
79	GaN-based multi-junction diode with low reverse leakage current using P-type barrier controlling layer. , 2011, , .		9
80	Equivalent Circuit Model for a GaN Gate Injection Transistor Bidirectional Switch. IEEE Transactions on Electron Devices, 2012, 59, 2643-2649.	3.0	9
81	Single to two-phase matrix converter using GaN-based monolithic bidirectional switch for driving symmetrical two-phase motor. , 2014, , .		9
82	GaN-based semiconductor devices for future power switching systems. , 2016, , .		9
83	A high-efficient driving isolated Drive-by-Microwave half-bridge gate driver for a GaN inverter. , 2016, , .		8
84	Effects of post-deposition annealing in O ₂ on threshold voltage of Al ₂ O ₃ /AlGaIn/GaN MOS heterojunction field-effect transistors. Japanese Journal of Applied Physics, 2019, 58, 030902.	1.5	8
85	Current status on GaN-based RF-power devices. , 2011, , .		7
86	(Invited) GaN Power Electron Devices. ECS Transactions, 2011, 41, 51-70.	0.5	7
87	Effects of Growth Temperatures on Crystal Quality of GaN by Vapor Phase Epitaxy Using GaCl ₃ and NH ₃ . Japanese Journal of Applied Physics, 2011, 50, 085501.	1.5	6
88	Drive-by-Microwave technologies for isolated direct gate drivers. , 2012, , .		6
89	A one-chip isolated gate driver with Drive-by-Microwave technologies. , 2012, , .		6
90	Synchrotron radiation X-ray photoelectron spectroscopy of Ti/Al ohmic contacts to n-type GaN: Key role of Al capping layers in interface scavenging reactions. Applied Physics Express, 2016, 9, 105801.	2.4	6

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91	Fast switching performance by 20 A / 730 V AlGaIn/GaN MIS-HFET using AlON gate insulator. , 2017, , .		6
92	K-Band AlGaIn/GaN MIS-HFET on Si with High Output Power over 10W. IEICE Transactions on Electronics, 2012, E95.C, 1327-1331.	0.6	6
93	Solid-phase epitaxial growth of Ge on H-terminated and oxidized Si(100) surfaces. Surface Science, 1995, 327, 225-232.	1.9	5
94	High f _{max} with High Breakdown Voltage in AlGaIn/GaN MIS-HFETs using In-Situ SiN as Gate Insulators. Compound Semiconductor Integrated Circuit Symposium (CSICS), IEEE, 2008, , .	0.0	5
95	Polarization engineering in GaN power transistors. Physica Status Solidi (B): Basic Research, 2010, 247, 1735-1739.	1.5	5
96	Highly efficient GaN power transistors and integrated circuits with high breakdown voltages. , 2010, , .		5
97	Physical and electrical characterizations of AlGaIn/GaN MOS gate stacks with AlGaIn surface oxidation treatment. Japanese Journal of Applied Physics, 2018, 57, 06KA07.	1.5	5
98	Hot-Electron Effects in GaN GITs and HD-GITs: A Comprehensive Analysis. , 2019, , .		5
99	Influence of Donor-Type Hole Traps Under P-GaN Gate in GaN-Based Gate Injection Transistor (GIT). , 2019, , .		5
100	Thermodynamic Analysis and Growth Characterization of thick GaN films grown by Chloride VPE using GaCl ₃ /N ₂ and NH ₃ /N ₂ . Materials Research Society Symposia Proceedings, 1996, 423, 233.	0.1	4
101	High power-added efficiency and low distortion GaAs power FET employing spike-gate structure. Solid-State Electronics, 1997, 41, 1599-1604.	1.4	4
102	Calculation of Unstable Mixing Region In Wurtzite InGaIn. Materials Research Society Symposia Proceedings, 1998, 512, 291.	0.1	4
103	Integrated power design platform based on modeling dynamic behavior of GaN devices. , 2011, , .		4
104	200 W Output Power at S-Band in AlGaIn/GaN Heterojunction Field Effect Transistors with Field Plates on Si Substrates. Japanese Journal of Applied Physics, 2012, 51, 081801.	1.5	4
105	Mechanism of Current-Collapse-Free Operation in E-Mode GaN Gate Injection Transistors Employed for Efficient Power Conversion. , 2016, , .		4
106	SiO ₂ /AlON stacked gate dielectrics for AlGaIn/GaN MOS heterojunction field-effect transistors. Japanese Journal of Applied Physics, 2018, 57, 06KA03.	1.5	4
107	Reduction of RonA retaining high threshold voltage in SiC DiodeMOS by improved channel design. , 2018, , .		4
108	Localised impurity induced layer disordering for lithographic control of the lateral oxidation of AlAs. Electronics Letters, 1997, 33, 1087.	1.0	3

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109	High-Brightness 350 nm Ultraviolet InAlGa _N Light Emitting Diodes on Si(111) Substrate with Transparent AlN/AlGa _N Buffer Structure. Japanese Journal of Applied Physics, 2010, 49, 032101.	1.5	3
110	Gate frequency sweep: An effective method to evaluate the dynamic performance of AlGa _N /Ga _N power heterojunction field effect transistors. Applied Physics Letters, 2014, 105, 073507.	3.3	3
111	A Study on Load Fluctuation of Isolated DC-DC Converter with Class Phi-2 Inverter using GaN-HFET. , 2018, , .		3
112	200 W Output Power at S-Band in AlGa _N /Ga _N Heterojunction Field Effect Transistors with Field Plates on Si Substrates. Japanese Journal of Applied Physics, 2012, 51, 081801.	1.5	3
113	Conducted noise of GaN Schottky barrier diode in a DC-DC converter. IEICE Electronics Express, 2015, 12, 20150912-20150912.	0.8	2
114	High accuracy equivalent circuit model for GaN GIT bi-directional switch. Physica Status Solidi C: Current Topics in Solid State Physics, 2016, 13, 378-381.	0.8	2
115	Fundamental Investigation of Isolated DC-DC Converter with Class-2 Inverter. Journal of the Japan Institute of Power Electronics, 2017, 43, 73-80.	0.0	2
116	Photoluminescence Study of Chloride Vpe-Grown Gan. Materials Research Society Symposia Proceedings, 1996, 421, 189.	0.1	1
117	Temperature-independent transconductance in 0.05 μm-gate MODFET. Solid-State Electronics, 1996, 39, 21-26.	1.4	1
118	Surface Plasmon VCSEL with Metal Nanohole Arrays. Conference Proceedings - Lasers and Electro-Optics Society Annual Meeting-LEOS, 2007, , .	0.0	1
119	GaN Transistors for Power Switching and High Frequency Applications. Compound Semiconductor Integrated Circuit Symposium (CSICS), IEEE, 2008, , .	0.0	1
120	A K-band AlGa _N /Ga _N -based MMIC amplifier with microstrip lines on sapphire. , 2008, , .		1
121	A 26 GHz Transceiver Chipset for Short Range Radar Using Post-Passivation Interconnection. Japanese Journal of Applied Physics, 2011, 50, 04DE04.	1.5	1
122	Equivalent-circuit-model for GaN-GIT bi-directional switch including influence of gate resistance. Physica Status Solidi C: Current Topics in Solid State Physics, 2012, 9, 887-890.	0.8	1
123	Evaluation of radiated emission of GaN-HEMT switching circuit. Physica Status Solidi C: Current Topics in Solid State Physics, 2014, 11, 936-939.	0.8	1
124	Gate Injection Transistors: E-mode Operation and Conductivity Modulation. Power Electronics and Power Systems, 2017, , 255-272.	0.6	1
125	Investigation of Peak Voltage Suppression Method at Startup in Isolated DC-DC Converter with Class Phi-2 Inverter. , 2018, , .		1
126	Validating GaN Robustness. Integrated Circuits and Systems, 2018, , 101-122.	0.2	1

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127	Enhancement-Mode n-Channel GaN MOSFETs Using HfO ₂ as a Gate Oxide. IEICE Transactions on Electronics, 2008, E91-C, 1001-1003.	0.6	1
128	Polarization Engineering in GaN Power Devices. Journal of the Vacuum Society of Japan, 2011, 54, 393-397.	0.3	1
129	A 26 GHz Transceiver Chipset for Short Range Radar Using Post-Passivation Interconnection. Japanese Journal of Applied Physics, 2011, 50, 04DE04.	1.5	1
130	Effects of Growth Temperatures on Crystal Quality of GaN by Vapor Phase Epitaxy Using GaCl ₃ and NH ₃ . Japanese Journal of Applied Physics, 2011, 50, 085501.	1.5	1
131	Vertical GaN-based power devices on bulk GaN substrates for future power switching systems. , 2018, , .		1
132	Growth and effects of single-crystalline ZnO buffer layer on GaN epitaxy. , 1997, , .		0
133	Low threshold current 850nm surface plasmon VCSEL with sub-micron metal hole arrays. , 2006, , .		0
134	Highly Efficient GaN-Based LEDs with Photonic Crystals Replicated from Patterned Si Substrates. , 2006, , .		0
135	Temperature-Stable Operating Current of Surface Plasmon VCSELs with Metal Nanohole Arrays. , 2007, , .		0
136	Temperature-stable operating current of surface plasmon VCSELs with metal nanohole arrays. , 2007, , .		0
137	Maskless Lateral Epitaxial Growth of Gallium Nitride Using Dimethylhydrazine as a Nitrogen Precursor. Journal of Electronic Materials, 2007, 36, 403-408.	2.2	0
138	Status of GaN-Based Power Switching Devices. Materials Science Forum, 0, 600-603, 1257-1262.	0.3	0
139	Current status on GaN-based RF-power devices. , 2011, , .		0
140	A compact isolated gate driver using GaN HFETs on sapphire substrate integrated with a 5.8GHz electro-magnetic resonant coupler. , 2013, , .		0
141	An Ultra Compact GaN 3x3 Matrix Converter. ECS Transactions, 2014, 64, 41-49.	0.5	0
142	Development of GaN-Based Gate-Injection Transistors and its Power Switching Application. Materials Science Forum, 2016, 858, 1165-1169.	0.3	0
143	Design and control of interface reaction between Al-based dielectrics and AlGaIn layer for hysteresis-free AlGaIn/GaN MOS-HFETs. , 2017, , .		0
144	Drain current enhancement induced by hole injection from gate of 600-V-class normally off gate injection transistor under high temperature conditions up to 200 Å°C. Japanese Journal of Applied Physics, 2018, 57, 06KC03.	1.5	0

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145	Development of GaN Power Devices for High Switching Frequency. Journal of the Institute of Electrical Engineers of Japan, 2019, 139, 80-83.	0.0	0