

Rongming Chu

List of Publications by Year in descending order

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88
papers

3,030
citations

218677

26
h-index

175258

52
g-index

89
all docs

89
docs citations

89
times ranked

2630
citing authors

#	ARTICLE	IF	CITATIONS
1	The 2018 GaN power electronics roadmap. Journal Physics D: Applied Physics, 2018, 51, 163001.	2.8	843
2	1200-V Normally Off GaN-on-Si Field-Effect Transistors With Low Dynamic on -Resistance. IEEE Electron Device Letters, 2011, 32, 632-634.	3.9	287
3	AlGaIn-GaN Double-Channel HEMTs. IEEE Transactions on Electron Devices, 2005, 52, 438-446.	3.0	114
4	High-voltage vertical GaN Schottky diode enabled by low-carbon metal-organic chemical vapor deposition growth. Applied Physics Letters, 2016, 108, .	3.3	114
5	An Experimental Demonstration of GaN CMOS Technology. IEEE Electron Device Letters, 2016, 37, 269-271.	3.9	113
6	600 V/ $1.7\text{-}\Omega$ Normally-Off GaN Vertical Trench Metal-oxide-semiconductor Field-Effect Transistor. IEEE Electron Device Letters, 2016, 37, 1466-1469.	3.9	108
7	Properties of N-polar AlGaIn/GaN heterostructures and field effect transistors grown by metalorganic chemical vapor deposition. Journal of Applied Physics, 2008, 103, .	2.5	85
8	High-temperature molecular beam epitaxial growth of AlGaIn/GaN on GaN templates with reduced interface impurity levels. Journal of Applied Physics, 2010, 107, .	2.5	70
9	V-Gate GaN HEMTs for X-Band Power Applications. IEEE Electron Device Letters, 2008, 29, 974-976.	3.9	62
10	Highly linear Al _{0.3} Ga _{0.7} N-Al _{0.05} Ga _{0.95} N-GaN composite-channel HEMTs. IEEE Electron Device Letters, 2005, 26, 145-147.	3.9	57
11	Influence of the substrate misorientation on the properties of N-polar InGaIn/GaN and AlGaIn/GaN heterostructures. Journal of Applied Physics, 2008, 104, .	2.5	54
12	Recessed Slant Gate AlGaIn/GaN High Electron Mobility Transistors with 20.9 W/mm at 10 GHz. Japanese Journal of Applied Physics, 2007, 46, L1087.	1.5	47
13	Temperature-dependence and microscopic origin of low frequency $1/f$ noise in GaN/AlGaIn high electron mobility transistors. Applied Physics Letters, 2011, 99, .	3.3	44
14	Influence of doping on the two-dimensional electron gas distribution in AlGaIn/GaN heterostructure transistors. Applied Physics Letters, 2001, 79, 2270-2272.	3.3	43
15	Improved performance in vertical GaN Schottky diode assisted by AlGaIn tunneling barrier. Applied Physics Letters, 2016, 108, .	3.3	43
16	GaN power switches on the rise: Demonstrated benefits and unrealized potentials. Applied Physics Letters, 2020, 116, .	3.3	43
17	Plasma Treatment for Leakage Reduction in AlGaIn/GaN and GaN Schottky Contacts. IEEE Electron Device Letters, 2008, 29, 297-299.	3.9	42
18	V-Gate GaN HEMTs With Engineered Buffer for Normally Off Operation. IEEE Electron Device Letters, 2008, 29, 1184-1186.	3.9	41

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19	A comparative study of effects of SiNx deposition method on AlGaIn/GaN heterostructure field-effect transistors. Applied Physics Letters, 2009, 94, .	3.3	40
20	Impact of CF_4 Plasma Treatment on GaN. IEEE Electron Device Letters, 2007, 28, 781-783.	3.9	39
21	N-Face Metal-Insulator-Semiconductor High-Electron-Mobility Transistors With AlN Back-Barrier. IEEE Electron Device Letters, 2008, 29, 1101-1104.	3.9	39
22	Growth of AlGaIn/GaN heterojunction field effect transistors on semi-insulating GaN using an AlGaIn interlayer. Applied Physics Letters, 2009, 94, 112108.	3.3	36
23	GaN power electronics for automotive application. , 2012, , .		34
24	Synthesis and optical properties of germanium nanorod array fabricated on porous anodic alumina and Si-based templates. Applied Physics Letters, 2005, 86, 021111.	3.3	30
25	Power Performance of AlGaIn/GaN HEMTs Grown on SiC by Ammonia-MBE at 4 and 10 GHz. IEEE Electron Device Letters, 2007, 28, 945-947.	3.9	29
26	Admittance characterization and analysis of trap states in AlGaIn/GaN heterostructures. Physica Status Solidi C: Current Topics in Solid State Physics, 2003, 0, 2400-2403.	0.8	28
27	Electrical properties of N-polar AlGaIn/GaN high electron mobility transistors grown on SiC by metalorganic chemical vapor deposition. Applied Physics Letters, 2009, 94, .	3.3	28
28	High-Speed, Enhancement-Mode GaN Power Switch With Regrown m -GaN Ohmic Contacts and Staircase Field Plates. IEEE Electron Device Letters, 2013, 34, 1118-1120.	3.9	28
29	Effects of Barrier Thinning on Small-Signal and 30-GHz Power Characteristics of AlGaIn/GaN Heterostructure Field-Effect Transistors. IEEE Transactions on Electron Devices, 2011, 58, 1681-1686.	3.0	25
30	N-face high electron mobility transistors with a GaN-spacer. Physica Status Solidi (A) Applications and Materials Science, 2007, 204, 2049-2053.	1.8	22
31	MOCVD-Grown AlGaIn Buffer GaN HEMTs With V-Gates for Microwave Power Applications. IEEE Electron Device Letters, 2009, 30, 910-912.	3.9	21
32	Normally-off GaN-on-Si multi-chip module boost converter with 96% efficiency and low gate and drain overshoot. , 2014, , .		21
33	AlGaIn/GaN HEMT With a Transparent Gate Electrode. IEEE Electron Device Letters, 2009, 30, 439-441.	3.9	20
34	Design of GaN/AlGaIn/GaN Super-Heterojunction Schottky Diode. IEEE Transactions on Electron Devices, 2020, 67, 69-74.	3.0	19
35	Effect of Al Composition and Gate Recess on Power Performance of AlGaIn/GaN High-Electron Mobility Transistors. IEEE Electron Device Letters, 2008, 29, 300-302.	3.9	18
36	High performance GaN-on-Si power switch: Role of substrate bias in device characteristics. , 2011, , .		18

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37	Study on the AlN/Si interface properties. <i>Optical Materials</i> , 2003, 23, 143-146.	3.6	17
38	Normally-off GaN switching 400V in 1.4ns using an ultra-low resistance and inductance gate drive. , 2013, , .		17
39	Experimental Demonstration of Charge- Balanced GaN Super-Heterojunction Schottky Barrier Diode Capable of 2.8 kV Switching. <i>IEEE Electron Device Letters</i> , 2020, 41, 1758-1761.	3.9	17
40	Correlation Between DC&RF Dispersion and Gate Leakage in Deeply Recessed GaN/AlGaN/GaN HEMTs. <i>IEEE Electron Device Letters</i> , 2008, 29, 303-305.	3.9	16
41	Normally-Off GaN-on-Si transistors enabling nanosecond power switching at one kilowatt. , 2013, , .		16
42	Strong quantum confinement and high carrier concentration in AlGaN/InGaN/GaN heterostructure field-effect transistors. <i>Applied Physics A: Materials Science and Processing</i> , 2003, 77, 669-671.	2.3	15
43	Recent advances in GaN power electronics. , 2013, , .		15
44	Designing two-dimensional electron gas in AlGaN/InGaN/GaN heterostructures through the incorporated InGaN layer. <i>Optical Materials</i> , 2003, 23, 207-210.	3.6	13
45	X- and Ka-band power performance of AlGaN/GaN HEMTs grown by ammonia-MBE. <i>Electronics Letters</i> , 2008, 44, 598.	1.0	13
46	Normally-off GaN-on-Si metal-insulator-semiconductor field-effect transistor with 600-V blocking capability at 200 °C. , 2012, , .		13
47	Modeling and Characterization of Vertical GaN Schottky Diodes With AlGaN Cap Layers. <i>IEEE Transactions on Electron Devices</i> , 2017, 64, 2172-2178.	3.0	12
48	Increasing the switching frequency of GaN HFET converters. , 2015, , .		10
49	Dislocation Reduction in AlGaN/GaN Heterostructures on 4H-SiC by Molecular Beam Epitaxy in the Thermal Decomposition Regime. <i>Applied Physics Express</i> , 0, 1, 061103.	2.4	9
50	Improvement of the dynamic on-resistance characteristics of GaN-on-Si power transistors with a sloped field-plate. , 2014, , .		9
51	TCAD modeling of a lateral GaN HEMT using empirical data. , 2018, , .		9
52	Al/sub 0.3/Ga/sub 0.7/N/GaN composite-channel HEMTs with enhanced linearity. , 0, , .		8
53	12.5 kV GaN Super-Heterojunction Schottky Barrier Diodes. <i>IEEE Transactions on Electron Devices</i> , 2021, 68, 5736-5741.	3.0	8
54	Gate leakage in AlGaN/GaN HEMTs and its suppression by optimization of MOCVD growth. <i>Physica Status Solidi C: Current Topics in Solid State Physics</i> , 2005, 2, 2663-2667.	0.8	7

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55	Analyzing losses using junction temperature of 300V 2.4kW 96% efficient, 1MHz GaN synchronous boost converter. , 2013, , .		6
56	Static and dynamic characterization of a GaN-on-GaN 600 V, 2 a vertical transistor. , 2017, , .		6
57	Study of interface trap density of AlO _x Ny/GaN MOS structures. Applied Physics Letters, 2021, 119, .	3.3	6
58	A low-cost horizontal current bipolar transistor (HCBT) technology for the BiCMOS integration with FinFETs. Solid-State Electronics, 2004, 48, 2047-2050.	1.4	5
59	Improved Performance of Plasma-Assisted Molecular Beam Epitaxy Grown AlGa _N /Ga _N High Electron Mobility Transistors with Gate-Recess and CF ₄ -Treatment. Applied Physics Express, 0, 1, 061101.	2.4	5
60	Growth and characterization of AlGa _N /Ga _N /AlGa _N field effect transistors. Physica Status Solidi C: Current Topics in Solid State Physics, 2010, 7, 2404-2407.	0.8	5
61	Normally-off gate-recessed AlGa _N /Ga _N -on-Si hybrid MOS-HFET with Al ₂ O ₃ /SiO ₂ /Al ₂ O ₃ gate dielectric. , 2011, , .		5
62	Impact of Charge Balance on Static and Dynamic Characteristics of GaN Super-Heterojunction Schottky Barrier Diodes. IEEE Electron Device Letters, 2022, 43, 701-704.	3.9	5
63	GaN-based radio-frequency planar inter-digitated metal-insulator-semiconductor varactors. , 0, , .		4
64	Function of quantum-confinement effect in the AlGa _N /AlN/GaN heterostructure with an AlN interfacial layer. Journal of Vacuum Science & Technology B, 2007, 25, 873.	1.3	4
65	Surface Treatment for Leakage Reduction in AlGa _N /Ga _N HEMTs. Device Research Conference, IEEE Annual, 2007, , .	0.0	4
66	Modeling and characterization of a 300 V GaN based boost converter with 96% efficiency at 1 MHz. , 2014, , .		4
67	Investigation of phase evolution within ZnO/Bi ₂ O ₃ varistors utilizing thin film prototypes. Journal of Materials Science, 2021, 56, 12740-12752.	3.7	4
68	High-Temperature Static and Dynamic Characteristics of 4.2-kV GaN Super-Heterojunction p-n Diodes. IEEE Transactions on Electron Devices, 2022, 69, 1912-1917.	3.0	4
69	Continuous in situ growth rate extraction using pyrometric interferometry and laser reflectance measurement during molecular beam epitaxy. Journal of Electronic Materials, 1997, 26, 1083-1089.	2.2	3
70	Impact of dopants in GaN on the formation of two-dimensional electron gas in AlGa _N /Ga _N heterostructure field-effect transistors. Applied Physics A: Materials Science and Processing, 2002, 75, 387-389.	2.3	3
71	Correlation of in-situ reflectance spectra and resistivity of GaN/Al ₂ O ₃ interfacial layer in metalorganic chemical vapor deposition. Journal of Electronic Materials, 2005, 34, 112-118.	2.2	3
72	Trap-related parametric shifts under DC bias and switched operation life stress in power AlGa _N /Ga _N HEMTs. , 2014, , .		3

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73	Non-polar GaN film growth on (0 1 0) gallium oxide substrate by metal organic chemical vapor deposition. Journal of Materials Research, 2017, 32, 1611-1617.	2.6	3
74	Effect of Substrate Choice on Transient Performance of Lateral GaN FETs. IEEE Journal of the Electron Devices Society, 2020, 8, 331-335.	2.1	3
75	Theoretical study of improved two-dimensional electron gas density in AlGaIn/GaN/AlGaIn double heterostructure. Physica Status Solidi (A) Applications and Materials Science, 2006, 203, 1018-1023.	1.8	2
76	A comparative study of SiN deposition methods for millimeter-wave AlGaIn/GaN HFETs. , 2008, , .		2
77	Critical gate module process enabling the implementation of a 50A/600V AlGaIn/GaN MOS-HEMT. , 2012, , .		2
78	Enhancement of the Electrical and Thermal Performance of AlGaIn/GaN HEMTs Using a Novel Resistive Field Plate Structure. , 2019, , .		2
79	High- Q GaN Varactors for mm-Wave Applications: A Physics-Based Simulation Study. IEEE Transactions on Electron Devices, 2019, 66, 4134-4139.	3.0	2
80	Evaluation of an Automated Modeling Tool Applied to New 600 V, 2 A Vertical GaN Transistors. , 2019, , .		2
81	GaN Super-Heterojunction Schottky Barrier Diode with Over 10 kV Blocking Voltage. , 2021, , .		2
82	V-Gate GaN HEMTs with 12.2 W/mm and 65% PAE at X-Band. , 2008, , .		1
83	8.85-kV/0.72-A Charge-Balanced GaN Super-Heterojunction Schottky Barrier Diode. , 2022, , .		1
84	AlGaIn/GaNHEMT with High PAE and Breakdown Voltage Grown by Ammonia MBE. Device Research Conference, IEEE Annual, 2007, , .	0.0	0
85	Power performance of MBE-grown N-face high electron mobility transistors with AlN back barrier. , 2008, , .		0
86	Small-signal and 30-GHz power performance of AlGaIn/GaN HFETs without back barriers. , 2009, , .		0
87	III-Nitride lateral transistor power switch. Semiconductors and Semimetals, 2019, 102, 185-218.	0.7	0
88	Exploring benefits of composition grading for forward-IV characteristics of In $_{1-x}$ Ga $_x$ As LEDs for cryogenic applications. Journal of Applied Physics, 2020, 128, 175701.	2.5	0