Sen Huang

List of Publications by Year
in descending order

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88 papers	2,900 citations	172457 29 h-index	175258 52 g-index
89 all docs	89 docs citations	89 times ranked	1846 citing authors

#	Article	IF	Citations
1	600-V Normally Off ${m SiN}_{x}$/AlGaN/GaN MIS-HEMT With Large Gate Swing and Low Current Collapse. IEEE Electron Device Letters, 2013, 34, 1373-1375.	3.9	223
2	Effective Passivation of AlGaN/GaN HEMTs by ALD-Grown AlN Thin Film. IEEE Electron Device Letters, 2012, 33, 516-518.	3.9	213
3	Vertical Leakage/Breakdown Mechanisms in AlGaN/GaN-on-Si Devices. IEEE Electron Device Letters, 2012, 33, 1132-1134.	3.9	170
4	High-Quality Interface in ${m Al}_{2}{m O}_{3}/{m GaN}/{m GaN}/{m AlGaN}/{m GaN}$ MIS Structures With In Situ Pre-Gate Plasma Nitridation. IEEE Electron Device Letters, 2013, 34, 1497-1499.	3.9	160
5	Mechanism of PEALD-Grown AlN Passivation for AlGaN/GaN HEMTs: Compensation of Interface Traps by Polarization Charges. IEEE Electron Device Letters, 2013, 34, 193-195.	3.9	110
6	High-Voltage (600-V) Low-Leakage Low-Current-Collapse AlGaN/GaN HEMTs with AlN/SiN_x Passivation. IEEE Electron Device Letters, 2013, 34, 366-368.	3.9	96
7	Normally OFF GaN-on-Si MIS-HEMTs Fabricated With LPCVD-SiN_x Passivation and High-Temperature Gate Recess. IEEE Transactions on Electron Devices, 2016, 63, 614-619.	3.0	87
8	Ultrathin-Barrier AlGaN/GaN Heterostructure: A Recess-Free Technology for Manufacturing High-Performance GaN-on-Si Power Devices. IEEE Transactions on Electron Devices, 2018, 65, 207-214.	3.0	87
9	High-Electron-Mobility InN Layers Grown by Boundary-Temperature-Controlled Epitaxy. Applied Physics Express, 2012, 5, 015502.	2.4	84
10	Threshold Voltage Instability in Al₂O₃/GaN/AlGaN/GaN Metalâ€“Insulatorâ€“Semiconductor High-Electron Mobility Transistors. Japanese Journal of Applied Physics, 2011, 50, 110202.	1.5	79
11	High-Performance Enhancement-Mode Al₂O₃/AlGaN/GaN-on-Si MISFETs With 626 MW/<inline-formula> <tex-math notation="LaTeX">$mathrm{cm}^{2}$ </tex-math></inline-formula> Figure of Merit. IEEE Transactions on Electron Devices, 2015, 62, 776-781.	3.0	73
12	High Uniformity Normally-OFF GaN MIS-HEMTs Fabricated on Ultra-Thin-Barrier AlGaN/GaN Heterostructure. IEEE Electron Device Letters, 2016, 37, 1617-1620.	3.9	72
13	Threshold Voltage Instability in Al₂O₃/GaN/AlGaN/GaN Metalâ€“Insulatorâ€“Semiconductor High-Electron Mobility Transistors. Japanese Journal of Applied Physics, 2011, 50, 110202.	1.5	71
14	A 5.8-GHz High-Power and High-Efficiency Rectifier Circuit With Lateral GaN Schottky Diode for Wireless Power Transfer. IEEE Transactions on Power Electronics, 2020, 35, 2247-2252.	7.9	60
15	Robust SiN_{<italic>x</italic>}/AlGaN Interface in GaN HEMTs Passivated by Thick LPCVD-Grown SiN_{<italic>x</italic>} Layer. IEEE Electron Device Letters, 2015, 36, 666-668.	3.9	58
16	O3-sourced atomic layer deposition of high quality Al2O3 gate dielectric for normally-off GaN metal-insulator-semiconductor high-electron-mobility transistors. Applied Physics Letters, 2015, 106, .	3.3	58
17	Effect of GaN Channel Layer Thickness on DC and RF Performance of GaN HEMTs With Composite AlGaN/GaN Buffer. IEEE Transactions on Electron Devices, 2014, 61, 1341-1346.	3.0	55
18	Influence of AlN Passivation on Dynamic ON-Resistance and Electric Field Distribution in High-Voltage AlGaN/GaN-on-Si HEMTs. IEEE Transactions on Electron Devices, 2014, 61, 2785-2792.	3.0	52

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19	Identification of Trap States in p-GaN Layer of a p-GaN/AlGaN/GaN Power HEMT Structure by Deep-Level Transient Spectroscopy. IEEE Electron Device Letters, 2020, 41, 685-688.	3.9	52
20	High-$f_{{m MAX}}$ High Johnson's Figure-of-Merit 0.2- $mu{m m}$ Gate AlGaN/GaN HEMTs on Silicon Substrate With ${m AlN}/{m SiN}_{{m x}}$ Passivation. IEEE Electron Device Letters, 2014, 35, 315-317.	3.9	50
21	Mechanism of Ti/Al/Ti/W Au-free ohmic contacts to AlGaN/GaN heterostructures via pre-ohmic recess etching and low temperature annealing. Applied Physics Letters, 2015, 107, .	3.3	50
22	High RF Performance Enhancement-Mode Al₂O₃/AlGaN/GaN MIS-HEMTs Fabricated With High-Temperature Gate-Recess Technique. IEEE Electron Device Letters, 2015, 36, 754-756.	3.9	49
23	Fabrication and Characterization of Enhancement-Mode High-$kappa~{m LaLuO}_{3}$-AlGaN/GaN MIS-HEMTs. IEEE Transactions on Electron Devices, 2013, 60, 3040-3046.	3.0	46
24	Ultralow-Contact-Resistance Au-Free Ohmic Contacts With Low Annealing Temperature on AlGaN/GaN Heterostructures. IEEE Electron Device Letters, 2018, 39, 847-850.	3.9	42
25	Surface nitridation for improved dielectric/IIIâ€nitride interfaces in GaN MISâ€HEMTs. Physica Status Solidi (A) Applications and Materials Science, 2015, 212, 1059-1065.	1.8	41
26	AlGaN/GaN MISHEMTs With High-$kappa hbox{LaLuO}_{3}$ Gate Dielectric. IEEE Electron Device Letters, 2012, 33, 979-981.	3.9	40
27	AlN passivation by plasma-enhanced atomic layer deposition for GaN-based power switches and power amplifiers. Semiconductor Science and Technology, 2013, 28, 074015.	2.0	34
28	Effects of the fluorine plasma treatment on the surface potential and Schottky barrier height of AlxGa1â^'xN/GaN heterostructures. Applied Physics Letters, 2010, 96, .	3.3	33
29	Mapping of interface traps in high-performance Al<inf>2</inf>O<inf>3</inf>/AlGaN/GaN MIS-heterostructures using frequency- and temperature-dependent C-V techniques. , 2013, , .		32
30	Millimeter-Wave AlGaN/GaN HEMTs With 43.6% Power-Added-Efficiency at 40 GHz Fabricated by Atomic Layer Etching Gate Recess. IEEE Electron Device Letters, 2020, 41, 701-704.	3.9	31
31	Characterization of V_{th}â€instability in Al₂O₃/GaN/AlGaN/GaN MISâ€HEMTs by quasiâ€static Câ€V measurement. Physica Status Solidi C: Current Topics in Solid State Physics, 2012, 9, 923-926.	0.8	29
32	Investigation of the interface between LPCVD-SiNx gate dielectric and III-nitride for AlGaN/GaN MIS-HEMTs. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2016, 34, .	1.2	29
33	Insight into the Near-Conduction Band States at the Crystallized Interface between GaN and SiN_x Grown by Low-Pressure Chemical Vapor Deposition. ACS Applied Materials & Interfaces, 2018, 10, 21721-21729.	8.0	24
34	Capture and emission mechanisms of defect states at interface between nitride semiconductor and gate oxides in GaN-based metal-oxide-semiconductor power transistors. Journal of Applied Physics, 2019, 126, .	2.5	24
35	Suppression of Gate Leakage Current in Ka-Band AlGaN/GaN HEMT With 5-nm SiN Gate Dielectric Grown by Plasma-Enhanced ALD. IEEE Transactions on Electron Devices, 2021, 68, 49-52.	3.0	22
36	Suppression of interface states between nitride-based gate dielectrics and ultrathin-barrier AlGaN/GaN heterostructure with in situ remote plasma pretreatments. Applied Physics Letters, 2021, 118, .	3.3	22

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37	High-Temperature-Recessed Millimeter-Wave AlGaN/GaN HEMTs With 42.8% Power-Added-Efficiency at 35 GHz. IEEE Electron Device Letters, 2018, 39, 727-730.	3.9	21
38	Monolithic integration of E/D-mode GaN MIS-HEMTs on ultrathin-barrier AlGaN/GaN heterostructure on Si substrates. Applied Physics Express, 2019, 12, 024001.	2.4	21
39	Interface charge engineering in down-scaled AlGaN (<6â€‰nm)/GaN heterostructure for fabrication of GaN-based power HEMTs and MIS-HEMTs. Applied Physics Letters, 2020, 116, .	3.3	20
40	High RF Performance GaN-on-Si HEMTs With Passivation Implanted Termination. IEEE Electron Device Letters, 2022, 43, 188-191.	3.9	20
41	ON-state critical gate overdrive voltage for fluorine-implanted enhancement-mode AlGaN/GaN high electron mobility transistors. Journal of Applied Physics, 2011, 110, .	2.5	19
42	Reduction of Current Collapse in GaN High-Electron Mobility Transistors Using a Repeated Ozone Oxidation and Wet Surface Treatment. IEEE Electron Device Letters, 2015, 36, 757-759.	3.9	19
43	Effect of interface and bulk traps on theCâ€“Vcharacterization of a LPCVD-SiN_x/AlGaN/GaN metal-insulator-semiconductor structure. Semiconductor Science and Technology, 2016, 31, 065014.	2.0	19
44	Recess-free AlGaN/GaN lateral Schottky barrier controlled Schottky rectifier with low turn-on voltage and high reverse blocking. , 2018, , .		19
45	Reduced reverse gate leakage current for GaN HEMTs with 3â€‰nm Al/40â€‰nm SiN passivation layer. Applied Physics Letters, 2019, 114, .	3.3	19
46	Effects of interface oxidation on the transport behavior of the two-dimensional-electron-gas in AlGaN/GaN heterostructures by plasma-enhanced-atomic-layer-deposited AlN passivation. Journal of Applied Physics, 2013, 114, .	2.5	16
47	Plasma-Enhanced Atomic Layer Deposition of AlN Epitaxial Thin Film for AlN/GaN Heterostructure TFTs. IEEE Electron Device Letters, 2013, 34, 1106-1108.	3.9	15
48	An Enhancement-Mode GaN p-FET With Improved Breakdown Voltage. IEEE Electron Device Letters, 2022, 43, 1191-1194.	3.9	14
49	Surface properties of Al_xGa_{1â€x}N/GaN heterostructures treated by fluorine plasma: an XPS study. Physica Status Solidi C: Current Topics in Solid State Physics, 2011, 8, 2200-2203.	0.8	13
50	Vertical leakage/breakdown mechanisms in AlGaN/GaN-on-Si structures. , 2012, , .		13
51	Suppression and characterization of interface states at low-pressure-chemical-vapor-deposited SiN /III-nitride heterostructures. Applied Surface Science, 2021, 542, 148530.	6.1	13
52	Study of the leakage current mechanism in Schottky contacts to Al_{0.25}Ga_{0.75}N/GaN heterostructures with AlN interlayers. Semiconductor Science and Technology, 2009, 24, 055005.	2.0	12
53	Characterization of high-Îº LaLuO3 thin film grown on AlGaN/GaN heterostructure by molecular beam deposition. Applied Physics Letters, 2011, 99, 182103.	3.3	12
54	Deformable Bowtie Antenna Realized by 4D Printing. Electronics (Switzerland), 2021, 10, 1792.	3.1	11

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55	Identification of Semi-ON-State Current Collapse in AlGaN/GaN HEMTs by Drain Current Deep Level Transient Spectroscopy. IEEE Electron Device Letters, 2022, 43, 200-203.	3.9	11
56	AlN/GaN heterostructure TFTs with plasma enhanced atomic layer deposition of epitaxial AlN thin film. Physica Status Solidi C: Current Topics in Solid State Physics, 2014, 11, 953-956.	0.8	9
57	Effects of Fluorine Plasma Treatment on Au-Free Ohmic Contacts to Ultrathin-Barrier AlGaN/GaN Heterostructure. IEEE Transactions on Electron Devices, 2019, 66, 2932-2936.	3.0	9
58	Interface Charge Effects on 2-D Electron Gas in Vertical-Scaled Ultrathin-Barrier AlGaN/GaN Heterostructure. IEEE Transactions on Electron Devices, 2021, 68, 36-41.	3.0	9
59	Effect of SiN:H _x passivation layer on the reverse gate leakage current in GaN HEMTs. Chinese Physics B, 2018, 27, 097309.	1.4	8
60	7.05 W/mm Power Density Millimeter-Wave GaN MIS-HEMT With Plasma Enhanced Atomic Layer Deposition SiN Dielectric Layer. IEEE Electron Device Letters, 2021, 42, 1436-1439.	3.9	8
61	Effect of alloying temperature on the capacitanceâ€“voltage and currentâ€“voltage characteristics of lowâ€pressure chemical vapor deposition SiN_x/nâ€GaN MIS structures. Physica Status Solidi (A) Applications and Materials Science, 2015, 212, 2928-2935.	1.8	7
62	Low-thermal-budget Au-free ohmic contact to an ultrathin barrier AlGaN/GaN heterostructure utilizing a micro-patterned ohmic recess. Journal of Semiconductors, 2021, 42, 092801.	3.7	7
63	Identification of bulk and interface state-induced threshold voltage instability in metal/SiNx(insulator)/AlGaN/GaN high-electron-mobility transistors using deep-level transient spectroscopy. Applied Physics Letters, 2021, 119, .	3.3	7
64	Reliability of enhancement-mode AlGaN/GaN HEMTs under ON-state gate overdrive. , 2010, , .		6
65	An ultrathin-barrier AlGaN/GaN heterostructure: a recess-free technology for the fabrication and integration of GaN-based power devices and power-driven circuits. Semiconductor Science and Technology, 2021, 36, 044002.	2.0	6
66	Instability of parasitic capacitance in T-shape-gate enhancement-mode AlGaN/GaN MIS-HEMTs. Journal of Semiconductors, 2022, 43, 032801.	3.7	6
67	Schottky source/drain Al<inf>2</inf>O<inf>3</inf>/InAlN/GaN MIS-HEMT with steep sub-threshold swing and high ON/OFF current ratio. , 2011, , .		5
68	Enhancement-Mode LaLuO3â€“AlGaN/GaN Metalâ€“Insulatorâ€“Semiconductor High-Electron-Mobility Transistors Using Fluorine Plasma Ion Implantation. Japanese Journal of Applied Physics, 2013, 52, 08JN02.	1.5	5
69	Fe-doped InN layers grown by molecular beam epitaxy. Applied Physics Letters, 2012, 101, 171905.	3.3	4
70	Normally-off GaN MIS-HEMT with improved thermal stability in DC and dynamic performance. , 2015, , .		4
71	A large-signal Pspice modeling of GaN-based MIS-HEMTs. Superlattices and Microstructures, 2019, 130, 499-511.	3.1	4
72	Impact of V _{th} Instability on Time-Resolved Characteristics of MIS-HEMT-Based GaN Power IC. IEEE Electron Device Letters, 2021, 42, 1440-1443.	3.9	4

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73	600V 1.3mμ·cm² low-leakage low-current-collapse AlGaN/GaN HEMTs with AlN/SiN<inf>x</inf> passivation. , 2013, , .		3
74	Evolution of traps in TiN/O3-sourced Al2O3/GaN gate structures with thermal annealing temperature. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2018, 36, 022202.	1.2	3
75	Revealing the Positive Bias Temperature Instability in Normally-OFF AlGaN/GaN MIS-HFETs by Constant-Capacitance DLTS. , 2019, , .		3
76	Partially Crystallized Ultrathin Interfaces between GaN and SiN_x Grown by Low-Pressure Chemical Vapor Deposition and Interface Editing. ACS Applied Materials & Interfaces, 2021, 13, 7725-7734.	8.0	3
77	Monolithic Integrated Normally OFF GaN Power Device With Antiparallel Lateral Schottky Barrier Controlled Schottky Rectifier. IEEE Transactions on Electron Devices, 2021, 68, 1778-1783.	3.0	3
78	Evolution of Deep Traps in GaNâ€Based RF High Electron Mobility Transistors under High Voltage OFFâ€State Stress. Physica Status Solidi - Rapid Research Letters, 2022, 16, .	2.4	3
79	Investigation of current collapse mechanism of LPCVD Si<inf>3</inf>N<inf>4</inf> passivated AlGaN/GaN HEMTs by fast soft-switched current-DLTS and CC-DLTFS. , 2017, , .		2
80	Monolithically integrated 600-V E/D-mode SiN<inf>x</inf>/AlGaN/GaN MIS-HEMTs and their applications in low-standby-power start-up circuit for switched-mode power supplies. , 2013, , .		1
81	Implementation of RTCVD-SiNâ„ Gate Dielectric Into Enhancement-Mode GaN MIS-HEMTs Fabricated on Ultrathin-Barrier AlGaN/GaN-on-Si Platform. IEEE Transactions on Electron Devices, 2021, 68, 4274-4277.	3.0	1
82	Direct Bonding Method for Completely Cured Polyimide by Surface Activation and Wetting. Materials, 2022, 15, 2529.	2.9	1
83	Investigation of ON-State Breakdown Mechanism in AlGaN/GaN HEMTs with AlGaN Back Barrier. Electronics (Switzerland), 2022, 11, 1331.	3.1	1
84	Investigation of Dynamic-Q_{GD} on Enhancement-Mode AlGaN/GaN MIS-HEMTs with SiN_x Passivation Dielectric. , 2022, , .		1
85	ON-state breakdown mechanism of GaN power HEMTs. , 2014, , .		0
86	Surface nitridation for improved dielectric/IIIâ€nitride interfaces in GaN MISâ€HEMTs (Phys. Status Solidi A) Tj ETQq0 0 0 rgBT /Overlock	1.8	0
87	AlGaN/GaN high electron mobility transistor with Al 2 O 3 +BCB passivation. Chinese Physics B, 2015, 24, 117307.	1.4	0
88	Ultrathin-barrier AlGaN/GaN heterostructure: An AlGaN-recess-free technology for fabrication of lateral GaN-based power devices. , 2022, , .		0