

Sen Huang

List of Publications by Year in descending order

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#	ARTICLE	IF	CITATIONS
1	Identification of Semi-ON-State Current Collapse in AlGaIn/GaN HEMTs by Drain Current Deep Level Transient Spectroscopy. IEEE Electron Device Letters, 2022, 43, 200-203.	3.9	11
2	Evolution of Deep Traps in GaN-Based RF High Electron Mobility Transistors under High Voltage OFF-State Stress. Physica Status Solidi - Rapid Research Letters, 2022, 16, .	2.4	3
3	High RF Performance GaN-on-Si HEMTs With Passivation Implanted Termination. IEEE Electron Device Letters, 2022, 43, 188-191.	3.9	20
4	Direct Bonding Method for Completely Cured Polyimide by Surface Activation and Wetting. Materials, 2022, 15, 2529.	2.9	1
5	Instability of parasitic capacitance in T-shape-gate enhancement-mode AlGaIn/GaN MIS-HEMTs. Journal of Semiconductors, 2022, 43, 032801.	3.7	6
6	Investigation of ON-State Breakdown Mechanism in AlGaIn/GaN HEMTs with AlGaIn Back Barrier. Electronics (Switzerland), 2022, 11, 1331.	3.1	1
7	Ultrathin-barrier AlGaIn/GaN heterostructure: An AlGaIn-recess-free technology for fabrication of lateral GaN-based power devices. , 2022, , .		0
8	An Enhancement-Mode GaN p-FET With Improved Breakdown Voltage. IEEE Electron Device Letters, 2022, 43, 1191-1194.	3.9	14
9	Investigation of Dynamic- Q_{GD} on Enhancement-Mode AlGaIn/GaN MIS-HEMTs with SiN_x Passivation Dielectric. , 2022, , .		1
10	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
11	Suppression of Gate Leakage Current in Ka -Band AlGaIn/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
12	Interface Charge Effects on 2-D Electron Gas in Vertical-Scaled Ultrathin-Barrier AlGaIn/GaN Heterostructure. IEEE Transactions on Electron Devices, 2021, 68, 36-41.	3.0	9
13	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
14	Suppression of interface states between nitride-based gate dielectrics and ultrathin-barrier AlGaIn/GaN heterostructure with <i>in situ</i> remote plasma pretreatments. Applied Physics Letters, 2021, 118, .	3.3	22
15	An ultrathin-barrier AlGaIn/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
16	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
17	Deformable Bowtie Antenna Realized by 4D Printing. Electronics (Switzerland), 2021, 10, 1792.	3.1	11
18	Implementation of RTCVD- SiN_x Gate Dielectric Into Enhancement-Mode GaN MIS-HEMTs Fabricated on Ultrathin-Barrier AlGaIn/GaN-on-Si Platform. IEEE Transactions on Electron Devices, 2021, 68, 4274-4277.	3.0	1

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19	Low-thermal-budget Au-free ohmic contact to an ultrathin barrier AlGaIn/GaN heterostructure utilizing a micro-patterned ohmic recess. Journal of Semiconductors, 2021, 42, 092801.	3.7	7
20	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
21	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
22	Identification of bulk and interface state-induced threshold voltage instability in metal/SiNx(insulator)/AlGaIn/GaN high-electron-mobility transistors using deep-level transient spectroscopy. Applied Physics Letters, 2021, 119, .	3.3	7
23	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
24	Identification of Trap States in p-GaN Layer of a p-GaN/AlGaIn/GaN Power HEMT Structure by Deep-Level Transient Spectroscopy. IEEE Electron Device Letters, 2020, 41, 685-688.	3.9	52
25	Interface charge engineering in down-scaled AlGaIn ($\leq 6\text{ nm}$)/GaN heterostructure for fabrication of GaN-based power HEMTs and MIS-HEMTs. Applied Physics Letters, 2020, 116, .	3.3	20
26	Millimeter-Wave AlGaIn/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
27	Revealing the Positive Bias Temperature Instability in Normally-OFF AlGaIn/GaN MIS-HFETs by Constant-Capacitance DLTS. , 2019, , .		3
28	Effects of Fluorine Plasma Treatment on Au-Free Ohmic Contacts to Ultrathin-Barrier AlGaIn/GaN Heterostructure. IEEE Transactions on Electron Devices, 2019, 66, 2932-2936.	3.0	9
29	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
30	A large-signal Pspice modeling of GaN-based MIS-HEMTs. Superlattices and Microstructures, 2019, 130, 499-511.	3.1	4
31	Reduced reverse gate leakage current for GaN HEMTs with $3\text{ nm Al}/40\text{ nm SiN}$ passivation layer. Applied Physics Letters, 2019, 114, .	3.3	19
32	Monolithic integration of E/D-mode GaN MIS-HEMTs on ultrathin-barrier AlGaIn/GaN heterostructure on Si substrates. Applied Physics Express, 2019, 12, 024001.	2.4	21
33	Evolution of traps in TiN/O ₃ -sourced Al ₂ O ₃ /GaN gate structures with thermal annealing temperature. Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics, 2018, 36, 022202.	1.2	3
34	High-Temperature-Recessed Millimeter-Wave AlGaIn/GaN HEMTs With 42.8% Power-Added-Efficiency at 35 GHz. IEEE Electron Device Letters, 2018, 39, 727-730.	3.9	21
35	Ultralow-Contact-Resistance Au-Free Ohmic Contacts With Low Annealing Temperature on AlGaIn/GaN Heterostructures. IEEE Electron Device Letters, 2018, 39, 847-850.	3.9	42
36	Ultrathin-Barrier AlGaIn/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

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37	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
38	Recess-free AlGaIn/GaN lateral Schottky barrier controlled Schottky rectifier with low turn-on voltage and high reverse blocking. , 2018, , .		19
39	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
40	Investigation of current collapse mechanism of LPCVD Si ₃ N ₄ passivated AlGaIn/GaN HEMTs by fast soft-switched current-DLTS and CC-DLTFs. , 2017, , .		2
41	Investigation of the interface between LPCVD-SiN _x gate dielectric and III-nitride for AlGaIn/GaN MIS-HEMTs. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2016, 34, .	1.2	29
42	High Uniformity Normally-OFF GaN MIS-HEMTs Fabricated on Ultra-Thin-Barrier AlGaIn/GaN Heterostructure. IEEE Electron Device Letters, 2016, 37, 1617-1620.	3.9	72
43	Effect of interface and bulk traps on the V_{th} characterization of a LPCVD-SiN _x /AlGaIn/GaN metal-insulator-semiconductor structure. Semiconductor Science and Technology, 2016, 31, 065014.	2.0	19
44	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
45	Surface nitridation for improved dielectric/III-nitride interfaces in GaN MIS-HEMTs (Phys. Status Solidi A) Tj ETQq _{1.1} 0.784314 rgB _{1.8}		
46	Mechanism of Ti/Al/Ti/W Au-free ohmic contacts to AlGaIn/GaN heterostructures via pre-ohmic recess etching and low temperature annealing. Applied Physics Letters, 2015, 107, .	3.3	50
47	AlGaIn/GaN high electron mobility transistor with Al ₂ O ₃ +BCB passivation. Chinese Physics B, 2015, 24, 117307.	1.4	0
48	High-Performance Enhancement-Mode Al _{0.2} O ₃ /AlGaIn/GaN-on-Si MISFETs With 626 MW/cm^2 Figure of Merit. IEEE Transactions on Electron Devices, 2015, 62, 776-781.	3.0	73
49	Surface nitridation for improved dielectric/III-nitride interfaces in GaN MIS-HEMTs. Physica Status Solidi (A) Applications and Materials Science, 2015, 212, 1059-1065.	1.8	41
50	Effect of alloying temperature on the capacitance-voltage and current-voltage characteristics of low-pressure chemical vapor deposition SiN _x /GaIn MIS structures. Physica Status Solidi (A) Applications and Materials Science, 2015, 212, 2928-2935.	1.8	7
51	Normally-off GaN MIS-HEMT with improved thermal stability in DC and dynamic performance. , 2015, , .		4
52	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
53	High RF Performance Enhancement-Mode Al _{0.2} O ₃ /AlGaIn/GaN MIS-HEMTs Fabricated With High-Temperature Gate-Recess Technique. IEEE Electron Device Letters, 2015, 36, 754-756.	3.9	49
54	Robust SiN _x /AlGaIn Interface in GaN HEMTs Passivated by Thick LPCVD-Grown SiN _x Layer. IEEE Electron Device Letters, 2015, 36, 666-668.	3.9	58

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55	O3-sourced atomic layer deposition of high quality Al ₂ O ₃ gate dielectric for normally-off GaN metal-insulator-semiconductor high-electron-mobility transistors. Applied Physics Letters, 2015, 106, .	3.3	58
56	Effect of GaN Channel Layer Thickness on DC and RF Performance of GaN HEMTs With Composite AlGaIn/GaN Buffer. IEEE Transactions on Electron Devices, 2014, 61, 1341-1346.	3.0	55
57	ON-state breakdown mechanism of GaN power HEMTs. , 2014, , .		0
58	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
59	High- f_{MAX} High Johnson's Figure-of-Merit $0.2 \mu m$ Gate AlGaIn/GaN HEMTs on Silicon Substrate With AlN/SiN_x Passivation. IEEE Electron Device Letters, 2014, 35, 315-317.	3.9	50
60	Influence of AlN Passivation on Dynamic ON-Resistance and Electric Field Distribution in High-Voltage AlGaIn/GaN-on-Si HEMTs. IEEE Transactions on Electron Devices, 2014, 61, 2785-2792.	3.0	52
61	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
62	Fabrication and Characterization of Enhancement-Mode High- κ -AlGaIn/GaN MIS-HEMTs. IEEE Transactions on Electron Devices, 2013, 60, 3040-3046.	3.0	46
63	Monolithically integrated 600-V E/D-mode SiN _x /AlGaIn/GaN MIS-HEMTs and their applications in low-standby-power start-up circuit for switched-mode power supplies. , 2013, , .		1
64	Mapping of interface traps in high-performance Al ₂ O ₃ /AlGaIn/GaN MIS-heterostructures using frequency- and temperature-dependent C-V techniques. , 2013, , .		32
65	600V 1.3m \times 0.3cm ² low-leakage low-current-collapse AlGaIn/GaN HEMTs with AlN/SiN _x passivation. , 2013, , .		3
66	Mechanism of PEALD-Grown AlN Passivation for AlGaIn/GaN HEMTs: Compensation of Interface Traps by Polarization Charges. IEEE Electron Device Letters, 2013, 34, 193-195.	3.9	110
67	High-Voltage (600-V) Low-Leakage Low-Current-Collapse AlGaIn/GaN HEMTs with AlN/SiN _x Passivation. IEEE Electron Device Letters, 2013, 34, 366-368.	3.9	96
68	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
69	600-V Normally Off SiN_x /AlGaIn/GaN MIS-HEMT With Large Gate Swing and Low Current Collapse. IEEE Electron Device Letters, 2013, 34, 1373-1375.	3.9	223
70	Enhancement-Mode LaLuO ₃ "AlGaIn/GaN Metal" Insulator "Semiconductor High-Electron-Mobility Transistors Using Fluorine Plasma Ion Implantation. Japanese Journal of Applied Physics, 2013, 52, 08JN02.	1.5	5
71	High-Quality Interface in $Al_2O_3/GaN/AlGaIn/GaN$ MIS Structures With In Situ Pre-Gate Plasma Nitridation. IEEE Electron Device Letters, 2013, 34, 1497-1499.	3.9	160
72	Effects of interface oxidation on the transport behavior of the two-dimensional-electron-gas in AlGaIn/GaN heterostructures by plasma-enhanced-atomic-layer-deposited AlN passivation. Journal of Applied Physics, 2013, 114, .	2.5	16

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73	High-Electron-Mobility InN Layers Grown by Boundary-Temperature-Controlled Epitaxy. Applied Physics Express, 2012, 5, 015502.	2.4	84
74	Vertical Leakage/Breakdown Mechanisms in AlGaIn/GaN-on-Si Devices. IEEE Electron Device Letters, 2012, 33, 1132-1134.	3.9	170
75	Vertical leakage/breakdown mechanisms in AlGaIn/GaN-on-Si structures. , 2012, , .		13
76	AlGaIn/GaN MISHEMTs With High- κ LaLuO_3 Gate Dielectric. IEEE Electron Device Letters, 2012, 33, 979-981.	3.9	40
77	Fe-doped InN layers grown by molecular beam epitaxy. Applied Physics Letters, 2012, 101, 171905.	3.3	4
78	Characterization of V_{th} instability in $\text{Al}_{0.2}\text{O}_{0.3}/\text{GaN}/\text{AlGaIn}/\text{GaN}$ MISHEMTs by quasi-static C_V measurement. Physica Status Solidi C: Current Topics in Solid State Physics, 2012, 9, 923-926.	0.8	29
79	Effective Passivation of AlGaIn/GaN HEMTs by ALD-Grown AlN Thin Film. IEEE Electron Device Letters, 2012, 33, 516-518.	3.9	213
80	Schottky source/drain $\text{Al}_{0.2}\text{O}_{0.3}/\text{InAlN}/\text{GaN}$ MIS-HEMT with steep sub-threshold swing and high ON/OFF current ratio. , 2011, , .		5
81	Characterization of high- κ LaLuO_3 thin film grown on AlGaIn/GaN heterostructure by molecular beam deposition. Applied Physics Letters, 2011, 99, 182103.	3.3	12
82	Surface properties of $\text{Al}_x\text{Ga}_{1-x}\text{N}/\text{GaN}$ 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
83	ON-state critical gate overdrive voltage for fluorine-implanted enhancement-mode AlGaIn/GaN high electron mobility transistors. Journal of Applied Physics, 2011, 110, .	2.5	19
84	Threshold Voltage Instability in $\text{Al}_{0.2}\text{O}_{0.3}/\text{GaN}/\text{AlGaIn}/\text{GaN}$ Metal-Insulator-Semiconductor High-Electron Mobility Transistors. Japanese Journal of Applied Physics, 2011, 50, 110202.	1.5	79
85	Threshold Voltage Instability in $\text{Al}_{0.2}\text{O}_{0.3}/\text{GaN}/\text{AlGaIn}/\text{GaN}$ Metal-Insulator-Semiconductor High-Electron Mobility Transistors. Japanese Journal of Applied Physics, 2011, 50, 110202.	1.5	71
86	Effects of the fluorine plasma treatment on the surface potential and Schottky barrier height of $\text{Al}_x\text{Ga}_{1-x}\text{N}/\text{GaN}$ heterostructures. Applied Physics Letters, 2010, 96, .	3.3	33
87	Reliability of enhancement-mode AlGaIn/GaN HEMTs under ON-state gate overdrive. , 2010, , .		6
88	Study of the leakage current mechanism in Schottky contacts to $\text{Al}_{0.25}\text{Ga}_{0.75}\text{N}/\text{GaN}$ heterostructures with AlN interlayers. Semiconductor Science and Technology, 2009, 24, 055005.	2.0	12