Benoit Bakeroot

List of Publications by Year
in descending order

Source: https://exaly.com/author-pdf/9284514/publications.pdf

Version: 2024-02-01

90 papers	1,948 citations	20 h-index	38 g-index

361296 315616

91 all docs	91 docs citations	91 times ranked	1237 citing authors

#	Article	IF	Citations
1	TCAD Modeling of the Dynamic <i>V</i> _{TH} Hysteresis Under Fast Sweeping Characterization in p-GaN Gate HEMTs. IEEE Transactions on Electron Devices, 2022, 69, 507-513.	1.6	7
2	Study and characterization of GaN MOS capacitors: Planar vs trench topographies. Applied Physics Letters, 2022, 120, .	1.5	3
3	Influence of Drain and Gate Potential on Gate Failure in Semi-Vertical GaN-on-Si Trench MOSFETs. , 2022, , .		1
4	Gate Reliability of p-GaN Power HEMTs Under Pulsed Stress Condition. , 2022, , .		6
5	Demonstration of Schottky barrier diode integrated in 200ÂV power p-GaN HEMTs technology with robust stability. Microelectronics Reliability, 2022, 134, 114568.	0.9	0
6	Compact Modeling of Nonideal Trapping/Detrapping Processes in GaN Power Devices. IEEE Transactions on Electron Devices, 2022, 69, 4432-4437.	1.6	2
7	Epitaxial buffer structures grown on 200â€‰mm engineering substrates for 1200 V E-mode HEMT application. Applied Physics Letters, 2022, 120, .	1.5	6
8	Investigating the Current Collapse Mechanisms of p-GaN Gate HEMTs by Different Passivation Dielectrics. IEEE Transactions on Power Electronics, 2021, 36, 4927-4930.	5.4	21
9	High-Temperature Time-Dependent Gate Breakdown of p-GaN HEMTs. IEEE Transactions on Electron Devices, 2021, 68, 5701-5706.	1.6	10
10	Surface-Potential-Based Compact Modeling of p-GaN Gate HEMTs. Micromachines, 2021, 12, 199.	1.4	0
11	Reliability of p-GaN Gate HEMTs in Reverse Conduction. IEEE Transactions on Electron Devices, 2021, 68, 645-652.	1.6	10
12	Impact of Structural and Process Variations on the Time-Dependent OFF-State Breakdown of p-GaN Power HEMTs. IEEE Transactions on Device and Materials Reliability, 2021, 21, 57-63.	1.5	5
13	ON-state reliability of GaN-on-Si Schottky Barrier Diodes: Si3N4 vs. Al2O3/SiO2 GET dielectric. , 2021, , .		1
14	Understanding the Leakage Mechanisms and Breakdown Limits of Vertical GaN-on-Si p+nâˆ’n Diodes: The Road to Reliable Vertical MOSFETs. Micromachines, 2021, 12, 445.	1.4	12
15	Challenges and Perspectives for Vertical GaN-on-Si Trench MOS Reliability: From Leakage Current Analysis to Gate Stack Optimization. Materials, 2021, 14, 2316.	1.3	15
16	Schottky Gate Induced Threshold Voltage Instabilities in p-GaN Gate AlGaN/GaN HEMTs. IEEE Transactions on Device and Materials Reliability, 2021, 21, 169-175.	1.5	25
17	Imaging confined and bulk p-type/n-type carriers in (Al,Ga)N heterostructures with multiple quantum wells. Applied Physics Letters, 2021, 118, 032104.	1.5	2
18	Stability of Schottky Barrier Diode Integrated in p-GaN Enhancement-mode GaN Power Technology. , 2021, , .		0

#	Article	IF	Citations
19	200 V GaN-on-SOI Smart Power Platform for Monolithic GaN Power ICs. , 2021, , .		8
20	Surface-Potential-Based Compact Model for the Gate Current of p-GaN Gate HEMTs. IEEE Transactions on Electron Devices, 2020, 67, 3564-3567.	1.6	4
21	Low Field Vertical Charge Transport in the Channel and Buffer Layers of GaN-on-Si High Electron Mobility Transistors. IEEE Electron Device Letters, 2020, 41, 1754-1757.	2.2	19
22	Integration of 650 V GaN Power ICs on 200 mm Engineered Substrates. IEEE Transactions on Semiconductor Manufacturing, 2020, 33, 534-538.	1.4	15
23	Use of Bilayer Gate Insulator in GaN-on-Si Vertical Trench MOSFETs: Impact on Performance and Reliability. Materials, 2020, 13, 4740.	1.3	12
24	Exploration of gate trench module for vertical GaN devices. Microelectronics Reliability, 2020, 114, 113828.	0.9	6
25	Role of the AlGaN barrier on the long-term gate reliability of power HEMTs with p-GaN gate. Microelectronics Reliability, 2020, 114, 113872.	0.9	9
26	Modeling of gate capacitance of GaN-based trench-gate vertical metal-oxide-semiconductor devices. Applied Physics Express, 2020, 13, 024006.	1.1	7
27	Demonstration of Bilayer Gate Insulator for Improved Reliability in GaN-on-Si Vertical Transistors. , 2020, , .		1
28	Observation of Dynamic <i>V</i> _{TH} of p-GaN Gate HEMTs by Fast Sweeping Characterization. IEEE Electron Device Letters, 2020, 41, 577-580.	2.2	50
29	Modeling of the Vertical Leakage Current in AlN/Si Heterojunctions for GaN Power Applications. IEEE Transactions on Electron Devices, 2020, 67, 595-599.	1.6	10
30	Using RESURF Technique for Edge Termination of Semi-Vertical GaN Devices. , 2020, , .		0
31	Threshold Voltage Instability Mechanisms in p-GaN Gate AlGaN/GaN HEMTs. , 2019, , .		36
32	Trading Off between Threshold Voltage and Subthreshold Slope in AlGaN/GaN HEMTs with a p-GaN Gate. , 2019, , .		21
33	Gate Reliability of p-GaN HEMT With Gate Metal Retraction. IEEE Transactions on Electron Devices, 2019, 66, 4829-4835.	1.6	35
34	Perimeter Driven Transport in the p-GaN Gate as a Limiting Factor for Gate Reliability. , 2019, , .		27
35	GaN-on-SOI: Monolithically Integrated All-GaN ICs for Power Conversion. , 2019, , .		50
36	Influence of GaN- and Si3N4-Passivation Layers on the Performance of AlGaN/GaN Diodes With a Gated Edge Termination. IEEE Transactions on Electron Devices, 2019, 66, 883-889.	1.6	4

#	Article	IF	Citations
37	Buffer Vertical Leakage Mechanism and Reliability of 200-mm GaN-on-SOI. IEEE Transactions on Electron Devices, 2019, 66, 553-560.	1.6	17
38	The Effect of Proton Irradiation in Suppressing Current Collapse in AlGaN/GaN High-Electron-Mobility Transistors. IEEE Transactions on Electron Devices, 2019, 66, 372-377.	1.6	19
39	Analytical Model for the Threshold Voltage of ${p}$ -(Al)GaN High-Electron-Mobility Transistors. IEEE Transactions on Electron Devices, 2018, 65, 79-86.	1.6	72
40	Investigation on Carrier Transport Through AlN Nucleation Layer From Differently Doped Si(111) Substrates. IEEE Transactions on Electron Devices, 2018, 65, 1721-1727.	1.6	33
41	The influence of carbon in the back-barrier layers on the surface electric field peaks in GaN Schottky diodes. , 2018, , .		0
42	Gate Conduction Mechanisms and Lifetime Modeling of p-Gate AlGaN/GaN High-Electron-Mobility Transistors. IEEE Transactions on Electron Devices, 2018, 65, 5365-5372.	1.6	65
43	Reliability in GaN-based devices for power applications. , 2018, , .		2
44	The Impact of Ti/Al Contacts on AlGaN/GaN HEMT Vertical Leakage and Breakdown. IEEE Electron Device Letters, 2018, 39, 1580-1583.	2.2	7
45	On the origin of the leakage current in p-gate AlGaN/GaN HEMTs. , 2018, , .		34
46	Dynamic-ron control via proton irradiation in AlGaN/GaN transistors. , 2018, , .		3
47	Reliability Improvements in AlGaN/GaN Schottky Barrier Diodes With a Gated Edge Termination. IEEE Transactions on Electron Devices, 2018, 65, 1765-1770.	1.6	24
48	Optimization of the source fieldâ€plate design for low dynamic <i>R</i>_{DSâ€ON} dispersion of AlGaN/GaN MISâ€HEMTs. Physica Status Solidi (A) Applications and Materials Science, 2017, 214, 1600601.	0.8	10
49	Time-Dependent Breakdown Mechanisms and Reliability Improvement in Edge Terminated AlGaN/GaN Schottky Diodes Under HTRB Tests. IEEE Electron Device Letters, 2017, 38, 371-374.	2.2	32
50	Failure mode for p-GaN gates under forward gate stress with varying Mg concentration. , 2017, , .		44
51	Analysis of the Gate Capacitanceâ€“Voltage Characteristics in p-GaN/AlGaN/GaN Heterostructures. IEEE Electron Device Letters, 2017, 38, 1696-1699.	2.2	80
52	Impact of AlGaN barrier recess on the DC and dynamic characteristics of AlGaN/GaN schottky barrier diodes with gated edge termination. , 2016, , .		0
53	Toward Understanding Positive Bias Temperature Instability in Fully Recessed-Gate GaN MISFETs. IEEE Transactions on Electron Devices, 2016, 63, 1853-1860.	1.6	63
54	Positive bias temperature instability evaluation in fully recessed gate GaN MIS-FETs. , 2016, , .		6

#	Article	IF	Citations
55	Statistical Analysis of the Impact of Anode Recess on the Electrical Characteristics of AlGaN/GaN Schottky Diodes With Gated Edge Termination. IEEE Transactions on Electron Devices, 2016, 63, 3451-3458.	1.6	41
56	Leakage and trapping characteristics in Auâ€free AlGaN/GaN Schottky barrier diodes fabricated on Câ€doped buffer layers. Physica Status Solidi (A) Applications and Materials Science, 2016, 213, 1229-1235.	0.8	4
57	Performance Optimization of Au-Free Lateral AlGaN/GaN Schottky Barrier Diode With Gated Edge Termination on 200-mm Silicon Substrate. IEEE Transactions on Electron Devices, 2016, 63, 997-1004.	1.6	132
58	Correlation of interface states/border traps and threshold voltage shift on AlGaN/GaN metal-insulator-semiconductor high-electron-mobility transistors. Applied Physics Letters, 2015, 107, .	1.5	56
59	A 16 Channel High-Voltage Driver with 14 Bit Resolution for Driving Piezoelectric Actuators. IEEE Transactions on Circuits and Systems I: Regular Papers, 2015, 62, 1726-1736.	3.5	11
60	Investigation of constant voltage off-state stress on Au-free AlGaN/GaN Schottky barrier diodes. Japanese Journal of Applied Physics, 2015, 54, 04DF07.	0.8	6
61	Current transient spectroscopy for trapping analysis on Au-free AlGaN/GaN Schottky barrier diode. Applied Physics Letters, 2015, 106, 083502.	1.5	31
62	Forward Bias Gate Breakdown Mechanism in Enhancement-Mode p-GaN Gate AlGaN/GaN High-Electron Mobility Transistors. IEEE Electron Device Letters, 2015, 36, 1001-1003.	2.2	158
63	Time dependent dielectric breakdown (TDDB) evaluation of PE-ALD SiN gate dielectrics on AlGaN/GaN recessed gate D-mode MIS-HEMTs and E-mode MIS-FETs. , 2015, , .		32
64	The impact of the gate dielectric quality in developing Au-free D-mode and E-mode recessed gate AlGaN/GaN transistors on a 200mm Si substrate. , 2015, , .		25
65	Analysis of slow de-trapping phenomena after a positive gate bias on AlGaN/GaN MIS-HEMTs with in-situ Si3N4/Al2O3 bilayer gate dielectrics. Solid-State Electronics, 2015, 103, 127-130.	0.8	16
66	On the origin of the two-dimensional electron gas at AlGaN/GaN heterojunctions and its influence on recessed-gate metal-insulator-semiconductor high electron mobility transistors. Journal of Applied Physics, 2014, 116, .	1.1	59
67	Physical origin of current collapse in Au-free AlGaN/GaN Schottky Barrier Diodes. Microelectronics Reliability, 2014, 54, 2196-2199.	0.9	19
68	TCAD methodology for simulation of GaN-HEMT power devices. , 2014, , .		29
69	Au-Free AlGaN/GaN Power Diode on 8-in Si Substrate With Gated Edge Termination. IEEE Electron Device Letters, 2013, 34, 1035-1037.	2.2	124
70	Si Trench Around Drain (STAD) technology of GaN-DHFETs on Si substrate for boosting power performance. , 2011, , .		12
71	Analysis of a Narrow-Base Lateral IGBT With Double Buried Layer for Junction-Isolated Smart-Power Technologies. IEEE Transactions on Electron Devices, 2008, 55, 435-445.	1.6	9
72	A new type of level-shifter for n-type high side switches used in high-voltage switching ADSL line-drivers. , 2008, , .		9

#	Article	IF	Citations
73	A New Charge based Compact Model for Lateral Asymmetric MOSFET and its application to High Voltage MOSFET Modeling. , 2007, , .		5
74	An Ultrafast and Latch-Up Free Lateral IGBT with Hole Diverter for Junction-Isolated Technologies. , 2007, , .		2
75	A New Lateral-IGBT Structure With a Wider Safe Operating Area. IEEE Electron Device Letters, 2007, 28, 416-418.	2.2	6
76	An EKV-based high voltage MOSFET model with improved mobility and drift model. Solid-State Electronics, 2007, 51, 1581-1588.	0.8	23
77	Compact Modeling of Lateral Nonuniform Doping in High-Voltage MOSFETs. IEEE Transactions on Electron Devices, 2007, 54, 1527-1539.	1.6	42
78	New method for threshold voltage extraction of high-voltage MOSFETs based on gate-to-drain capacitance measurement. IEEE Electron Device Letters, 2006, 27, 602-604.	2.2	12
79	Ultrafast floating 75-V lateral IGBT with a buried hole diverter and an effective junction isolation. IEEE Electron Device Letters, 2006, 27, 492-494.	2.2	6
80	Scalable general high voltage MOSFET model including quasi-saturation and self-heating effects. Solid-State Electronics, 2006, 50, 1801-1813.	0.8	40
81	Analysis and Modeling of Lateral Non-Uniform Doping in High-Voltage MOSFETs. , 2006, , .		21
82	A new LIGBT structure to suppress substrate currents in a junction isolated technology. Solid-State Electronics, 2005, 49, 363-367.	0.8	6
83	Investigations and Physical Modelling of Saturation Effects in Lateral DMOS Transistor Architectures Based on the Concept of Intrinsic Drain Voltage. , 2001, , .		21
84	An experimental approach for bias-dependent drain series resistances evaluation in asymmetric HV MOSFETs. , 2001, , .		4
85	Physical modelling strategy for (quasi-) saturation effects in lateral DMOS transistor based on the concept of intrinsic drain voltage. , 0, , .		5
86	Bias-dependent drift resistance modeling for accurate DC and AC simulation of asymmetric HV-MOSFET. , 0, , .		18
87	Electrical characterisation of high voltage MOSFETs using MESDRIFT. , 0, , .		0
88	A new substrate current free nLIGBT for junction isolated technologies. , 0, , .		4
89	A 75 V Lateral IGBT for Junction-Isolated Smart Power Technologies. , 0, , .		5
90	Defect Characterization in Highâ€Electronâ€Mobility Transistors with Regrown pâ€GaN Gate by Lowâ€Frequency Noise and Deepâ€Level Transient Spectroscopy. Physica Status Solidi (A) Applications and Materials Science, 0, , 2100227.	0.8	4