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## GaN-Based RF Power Devices and Amplifiers

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569	Time-dependent dielectric breakdown of recessed AlGaIn/GaN-on-Si MOS-HFETs with PECVD SiO2 gate oxide. <b>2018</b> , 155, 428-433	4
568	Avalanche Ruggedness of GaN p-i-n Diodes Grown on Sapphire Substrate. <b>2018</b> , 215, 1800069	6
567	Experimental characterization of impact ionization coefficients for electrons and holes in GaN grown on bulk GaN substrates. <b>2018</b> , 112, 262103	52

566	Elastic constants of the III-V nitride semiconductors MgSiN <sub>2</sub> , MgGeN <sub>2</sub> and MgSnN <sub>2</sub> . <b>2018</b> , 51, 375101	5
565	Monolithically integrated InGaN/GaN light-emitting diodes, photodetectors, and waveguides on Si substrate. <b>2018</b> , 5, 564	63
564	A GaN HEMT Global Large-Signal Model Including Charge Trapping for Multibias Operation. <b>2018</b> , 1-14	11
563	Characterization of Buffer-Related Current Collapse by Buffer Potential Simulation in AlGaIn/GaN HEMTs. <b>2018</b> , 65, 3169-3175	20
562	GaN Schottky barrier diodes for microwave power transmission. <b>2018</b> ,	
561	Refined isolation techniques for GaN-based high electron mobility transistors. <b>2018</b> , 87, 195-201	7
560	Anomalous emission from oxygen incorporated GaN nanowires. <b>2018</b> , 104, 187-191	2
559	A General Dimension Reduction Method for the Dispersion Modeling of Semiconductor Devices. <b>2018</b> , 6, 39422-39434	3
558	High Temperature AlGaIn/GaN Membrane Based Pressure Sensors. <b>2018</b> , 9,	11
557	A Universal Scalable Thermal Resistance Model for Compact Large-Signal Model of AlGaIn/GaN HEMTs. <b>2018</b> , 66, 4419-4429	13
556	. <b>2018</b> ,	20
555	Operational Improvement of AlGaIn/GaN High Electron Mobility Transistor by an Inner Field-Plate Structure. <b>2018</b> , 8, 974	12
554	High-Mobility Two-Dimensional Electron Gas at InGaIn/InN Heterointerface Grown by Molecular Beam Epitaxy. <b>2018</b> , 5, 1800844	14
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552	Holistic optimization technique for solving low thermal conductivity of sapphire substrates in high frequency devices. <b>2018</b> ,	3
551	Ab initio study of impact of nitridation at amorphous-SiN <sub>x</sub> /GaIn interface. <b>2018</b> , 11, 081003	4
550	An analytic current-voltage model for quasi-ballistic III-nitride high electron mobility transistors. <b>2018</b> , 123, 184501	4
549	. <b>2018</b> , 39, 995-998	10



548	Performance evaluation of normally ON/OFF junctionless vertical channel GaN FET. <b>2018</b> , 124, 1	3
547	Linearity enhancement of GaN Doherty amplifier by forward gate current blocking method. <b>2018</b> ,	
546	Enhancement of Breakdown Voltage in AlGa <sub>N</sub> /Ga <sub>N</sub> HEMTs: Field Plate Plus High- $\kappa$ Passivation Layer and High Acceptor Density in Buffer Layer. <b>2018</b> , 65, 3848-3854	46
545	Insight into the Near-Conduction Band States at the Crystallized Interface between GaN and Si <sub>N</sub> Grown by Low-Pressure Chemical Vapor Deposition. <b>2018</b> , 10, 21721-21729	17
544	Ti/Al/Ti/TiW Au-free low temperature ohmic contacts for un-doped AlGa <sub>N</sub> /Ga <sub>N</sub> HEMTs. <b>2018</b> , 147, 1-5	8
543	Modelling the threshold voltage of p-channel enhancement-mode GaN heterostructure field-effect transistors. <b>2018</b> , 11, 675-680	6
542	Photon emission and current-collapse suppression of AlGa <sub>N</sub> /Ga <sub>N</sub> field-effect transistors with photonic ohmic drain at high temperatures. <b>2018</b> , 11, 071003	5
541	Mechanism of Threshold Voltage Shift in $\{p\}$ -Ga <sub>N</sub> Gate AlGa <sub>N</sub> /Ga <sub>N</sub> Transistors. <b>2018</b> , 39, 1145-1148	61
540	. <b>2019</b> , 61, 564-571	11
539	Modeling and simulation of DC and microwave characteristics of AlInN(AlGa <sub>N</sub> )/AlN/Ga <sub>N</sub> MOSHEMTs with different gate lengths. <b>2019</b> , 32, e2456	7
538	. <b>2019</b> , 34, 3711-3728	20
537	Thermal atomic layer etching of crystalline GaN using sequential exposures of XeF <sub>2</sub> and BCl <sub>3</sub> . <b>2019</b> , 114, 243103	23
536	Effect of In composition on electrical performance of AlInGa <sub>N</sub> /Ga <sub>N</sub> -based metal-insulator-semiconductor high electron mobility transistors (MIS-HEMTs) on Si. <b>2019</b> , 125, 225707	2
535	Self-Heating and Equivalent Channel Temperature in Short Gate Length Ga <sub>N</sub> HEMTs. <b>2019</b> , 66, 3748-3755	17
534	Theoretical Study of InAlN/Ga <sub>N</sub> High Electron Mobility Transistor (HEMT) with a Polarization-Graded AlGa <sub>N</sub> Back-Barrier Layer. <b>2019</b> , 8, 885	5
533	Investigation of the nanochannel geometry modulation on self-heating in AlGa <sub>N</sub> /Ga <sub>N</sub> Fin-HEMTs on Si. <b>2019</b> , 115, 083505	3
532	Improvement in DC and pulse characteristics of AlGa <sub>N</sub> /Ga <sub>N</sub> HEMT by employing dual metal gate structure. <b>2019</b> , 34, 105013	10
531	Probing Alloy Formation Using Different Excitonic Species: The Particular Case of InGa <sub>N</sub> . <b>2019</b> , 9,	0

530	Optical characterization of InAlN/AlN/InGaN/GaN/sapphire high electron mobility transistor structures. <b>2019</b> ,	0
529	Thermal Characterization of Field Plated AlGaN/GaN HEMTs. <b>2019</b> ,	1
528	Effects of substrate self-bias and nitrogen flow rate on non-polar AlN film growth by reactive sputtering. <b>2019</b> , 58, SDDG07	4
527	The coupling effect of chlorine-based gate recess and fin width modulation on the threshold voltage of AlGaN/GaN fin-based high electron mobility transistors. <b>2019</b> , 58, SCCB25	0
526	Thermal analysis of GaN-on-SiC HEMTs with different backside via layouts. <b>2019</b> , 58, SCCD24	
525	GaN-based single-phase bridgeless PFC boost rectifier. <b>2019</b> , 2019, 3614-3617	1
524	Electrodeless photo-assisted electrochemical etching of GaN using a H3PO4-based solution containing S2O8 2- ions. <b>2019</b> , 12, 066504	10
523	Polarization Engineering to Manipulate the Breakdown Voltage for GaN-Based PIN Diodes. <b>2019</b> , 216, 1900210	2
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521	Theoretical Study of Electron Transport Properties in GaN-Based HEMTs Using a Deterministic Multi-Subband Boltzmann Transport Equation Solver. <b>2019</b> , 66, 3740-3747	1
520	Barrier Inhomogeneity of Schottky Diode on Nonpolar AlN Grown by Physical Vapor Transport. <b>2019</b> , 7, 662-667	16
519	Influence of Different Fin Configurations on Small-Signal Performance and Linearity for AlGaN/GaN Fin-HEMTs. <b>2019</b> , 66, 3302-3309	7
518	Direct Current Characteristics of AlGaN/GaN High-Electron-Mobility Transistors with Different Channel Widths. <b>2019</b> , 8, Q123-Q125	1
517	GaN Schottky Barrier Diodes with TiN Electrode for Microwave Power Transmission. <b>2019</b> , 954, 126-132	
516	Planar anisotropic Shubnikov-de-Haas oscillations of two-dimensional electron gas in AlN/GaN heterostructure. <b>2019</b> , 115, 152107	3
515	Investigation of the aging of power GaN HEMT under operational switching conditions, impact on the power converters efficiency. <b>2019</b> , 100-101, 113403	1
514	Thick, Adherent Diamond Films on AlN with Low Thermal Barrier Resistance. <b>2019</b> , 11, 40826-40834	31
513	Design and Fabrication of Micro LEDs for High Data Rate LiFi Communications. <b>2019</b> ,	0

512	Demonstration of CuI as a P <sub>N</sub> heterojunction to Ga <sub>2</sub> O <sub>3</sub> . <b>2019</b> , 12, 104005	4
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510	High-performance InAlN/GaN HEMTs on silicon substrate with high f <sub>T</sub> L <sub>g</sub> . <b>2019</b> , 12, 104001	14
509	Analysis of DC Characteristics in GaN-Based Metal-Insulator-Semiconductor High Electron Mobility Transistor with Variation of Gate Dielectric Layer Composition by Considering Self-Heating Effect. <b>2019</b> , 9, 3610	2
508	Reproducing GaN HEMT Kink Effect by Simulating Field-Enhanced Barrier Defect Ionization. <b>2019</b> , 66, 3777-3783	13
507	Stability and Reliability of Lateral GaN Power Field-Effect Transistors. <b>2019</b> , 66, 4578-4590	39
506	Nanotribological Properties of Ga- and N-Faced Bulk Gallium Nitride Surfaces Determined by Nanoscratch Experiments. <b>2019</b> , 12,	13
505	Mechanism of Buffer-Related Current Collapse in AlGa <sub>N</sub> /Ga <sub>N</sub> HEMT. <b>2019</b> ,	2
504	Liquid Phase Epitaxy of Gallium Nitride. <b>2019</b> , 19, 6577-6585	1
503	Demonstration of 1.27 kV Etch-Then-Regrow Ga <sub>N</sub> $p-n$ Junctions With Low Leakage for Ga <sub>N</sub> Power Electronics. <b>2019</b> , 40, 1728-1731	34
502	A polarization-induced 2D hole gas in undoped gallium nitride quantum wells. <b>2019</b> , 365, 1454-1457	57
501	Calculations of defect states in various sizes of InN nanowires. <b>2019</b> , 30, 205705	
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499	Monolithic Integration of GaN Nanowire Light-Emitting Diode With Field Effect Transistor. <b>2019</b> , 40, 427-430	21
498	AlGa <sub>N</sub> /Ga <sub>N</sub> HEMT with LPCVD deposited Si <sub>N</sub> and PECVD deposited SiCOH low-k passivation. <b>2019</b> , 12, 036501	2
497	Realization of p-type gallium nitride by magnesium ion implantation for vertical power devices. <b>2019</b> , 9, 8796	18
496	An Accurate Characterization of Capture Time Constants in GaN HEMTs. <b>2019</b> , 67, 2465-2474	20
495	Analytical modeling of 2DEG with 2DHG polarization charge density drain current and small-signal model of quaternary AlInGa <sub>N</sub> HEMTs for microwave frequency applications. <b>2019</b> , 32, e2609	3

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491	p-Channel GaN Transistor Based on p-GaN/AlGaN/GaN on Si. <b>2019</b> , 40, 1036-1039	56
490	Characterization of self-heating in GaN high electron mobility transistors using channel resistance measurement. <b>2019</b> , 58, SCCB11	3
489	Analysis of breakdown voltage of field-plate AlGaN/GaN HEMTs as affected by buffer layer acceptor density. <b>2019</b> , 58, 068003	5
488	Epitaxy of III-Nitrides on GaO and Its Vertical Structure LEDs. <b>2019</b> , 10,	14
487	Simulation of AlGaN/GaN HEMTs Breakdown Voltage Enhancement Using Gate Field-Plate, Source Field-Plate and Drain Field Plate. <b>2019</b> , 8, 406	17
486	Scanning internal photoemission microscopy measurements of n-GaN Schottky contacts under applying voltage. <b>2019</b> , 58, SCCD02	1
485	Deep Etched Gallium Nitride Waveguide for Raman Spectroscopic Applications. <b>2019</b> , 9, 176	1
484	. <b>2019</b> , 40, 1044-1047	14
483	Effect of reactant gas stoichiometry of in-situ SiNx passivation on structural properties of MOCVD AlGaN/GaN HEMTs. <b>2019</b> , 517, 28-34	5
482	Crystal growth of a MnS buffer layer for non-polar AlN on Si (100) deposited by radio frequency magnetron sputtering. <b>2019</b> , 58, SBBK03	2
481	High performance enhancement-mode HEMT with 3DEG to conduct current and 3DHG as back barrier. <b>2019</b> , 130, 437-445	4
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477	Comparative Survey of Techniques and Technologies Used in Transmit Path of Transmit Receive Module of AESA Radar. <b>2019</b> ,	1

476	. <b>2019</b> , 19, 298-303	10
475	Mechanism of Ti/Al/Ni/Au ohmic contacts to AlGa <sub>N</sub> /Ga <sub>N</sub> heterostructures via laser annealing. <b>2019</b> , 28, 037302	1
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469	Measurement of Internal Polarization by QCSE Induced Level Shift in AlGa <sub>N</sub> Quantum Cascade Emitters. <b>2019</b> , 31, 657-660	1
468	Band Anti-Crossing Model in Dilute-As Ga <sub>N</sub> As Alloys. <b>2019</b> , 9, 5128	5
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466	Effect of border traps on the threshold voltage instability of fluoride-doped AlGa <sub>N</sub> /Ga <sub>N</sub> metal-insulator-semiconductor high-electron-mobility transistors. <b>2019</b> , 52, 195102	3
465	Deep Sub-60 mV/decade Subthreshold Swing in AlGa <sub>N</sub> /Ga <sub>N</sub> FinMISHFETs with M-Plane Sidewall Channel. <b>2019</b> , 66, 1699-1703	8
464	Significant Degradation of AlGa <sub>N</sub> /Ga <sub>N</sub> High-Electron Mobility Transistors With Fast and Thermal Neutron Irradiation. <b>2019</b> , 66, 886-891	8
463	Ammonia Molecular Beam Epitaxy of III-Nitrides. <b>2019</b> , 73-90	1
462	MBE of III-Nitride Semiconductors for Electronic Devices. <b>2019</b> , 108-134	
461	Acoustoelectric amplification of Rayleigh waves in low sheet density AlGa <sub>N</sub> /Ga <sub>N</sub> heterostructures on sapphire. <b>2019</b> , 114, 063502	8
460	Efficiency improved by monolithic integration of HEMT with vertical-structure LEDs and Mg doping on dry etched Ga <sub>N</sub> . <b>2019</b> , 7, 2823-2828	4
459	A Highly Survivable C-band Ga <sub>N</sub> HEMT LNA with Resistive Feedback Technique. <b>2019</b> ,	0

458	Evaluation of Device Performance on AlGa <sub>N</sub> /InGa <sub>N</sub> /Ga <sub>N</sub> High Electron Mobility Transistors (HEMTs) using TCAD Software. <b>2019</b> ,	
457	AlGa <sub>N</sub> /Ga <sub>N</sub> MIS-HEMTs with In Situ Si <sub>N</sub> x as Gate Dielectric and Passivation Layer. <b>2019</b> ,	
456	Physics Based TCAD Simulation and Calibration of Ga <sub>N</sub> /AlGa <sub>N</sub> /Ga <sub>N</sub> HEMT Device. <b>2019</b> ,	0
455	3D heterogeneous integration of high performance high-K metal gate Ga <sub>N</sub> NMOS and Si PMOS transistors on 300mm high-resistivity Si substrate for energy-efficient and compact power delivery, RF (5G and beyond) and SoC applications. <b>2019</b> ,	5
454	Substrate Effects in Ga <sub>N</sub> -on-Silicon RF Device Technology. <b>2019</b> , 28, 1940001	9
453	An Improved Large-Signal Equivalent Circuit Model for Ga <sub>N</sub> HEMTs. <b>2019</b> ,	
452	Modeling dislocation-related leakage currents in Ga <sub>N</sub> p-n diodes. <b>2019</b> , 126, 245705	3
451	A 2-6 GHz Power Amplifier with 45% PAE in $0.25\mu\text{m}$ Ga <sub>N</sub> Technology. <b>2019</b> ,	0
450	High-K Gate Dielectric Ga <sub>N</sub> MOS-HEMTs with Regrown n <sup>+</sup> InGa <sub>N</sub> Source/Drain (Invited Paper). <b>2019</b> ,	2
449	Process and Packaging Innovations for Moore's Law Continuation and Beyond. <b>2019</b> ,	9
448	Reduction of Current Collapse in Ga <sub>N</sub> (MIS)-HEMTs Using Dual Material Gate. <b>2019</b> ,	1
447	BBr <sub>3</sub> as a boron source in plasma-assisted molecular beam epitaxy. <b>2019</b> , 37, 061502	1
446	A Threshold Voltage Model for Charge Trapping Effect of AlGa <sub>N</sub> /Ga <sub>N</sub> HEMTs. <b>2019</b> , 7, 120638-120647	3
445	Modeling and Simulation of Quasi-Ballistic III-Nitride Transistors for RF and Digital Applications. <b>2019</b> , 28, 1940011	
444	Comparative study of Au and Ni/Au gated AlGa <sub>N</sub> /Ga <sub>N</sub> high electron mobility transistors. <b>2019</b> , 9, 125231	5
443	Time Domain Drain Lag Measurement and TCAD-based Device Simulations of AlGa <sub>N</sub> /Ga <sub>N</sub> HEMT: Investigation of Physical Mechanism. <b>2019</b> ,	1
442	Device Design Assessment of Ga <sub>N</sub> Merged P-i-N Schottky Diodes. <b>2019</b> , 8, 1550	4
441	Impact of Via-Inductance on Stability Behavior of Large Gate-Periphery Multi-finger RF Transistors. <b>2019</b> ,	

440	Decorrelation-based Piecewise Digital Predistortion: Operating Principle and RF Measurements. <b>2019,</b>	1
439	High Robustness S-Band GaN Based LNA. <b>2019,</b>	1
438	High Robustness S-Band GaN Based LNA. <b>2019,</b>	
437	High germanium doping of GaN films by ammonia molecular beam epitaxy. <b>2019,</b> 508, 19-23	13
436	. <b>2019,</b> 66, 9628-9631	9
435	Physics-Based 2-D Analytical Model for Field-Plate Engineering of AlGaN/GaN Power HFET. <b>2019,</b> 66, 116-125	6
434	Ohmic contact to AlGaN/GaN HEMT with electrodes in contact with heterostructure interface. <b>2019</b> , 151, 60-64	11
433	Selective Area Deposition of Hot Filament CVD Diamond on 100 mm MOCVD Grown AlGaN/GaN Wafers. <b>2019,</b> 19, 672-677	9
432	. <b>2019,</b> 66, 876-882	29
431	Electronic band alignment in AlGaN/GaN high electron-mobility transistors investigated using scanning photocurrent microscopy. <b>2019,</b> 19, 406-410	3
430	Demonstration of a 9 kV reverse breakdown and 59 m $\Omega$ cm <sup>2</sup> specific on-resistance AlGaN/GaN Schottky barrier diode. <b>2019,</b> 151, 47-51	7
429	Hybrid Analog/Digital Linearization of GaN HEMT-Based Power Amplifiers. <b>2019,</b> 67, 288-294	16
428	Field-Plated AlInN/AlN/GaN MOSHEMT with Improved RF Power Performance. <b>2019,</b> 611-617	1
427	Hybrid small-signal model parameter extraction of GaN HEMTs on Si and SiC substrates based on global optimization. <b>2019,</b> 29, e21555	5
426	A reliable and efficient small-signal parameter extraction method for GaN HEMTs. <b>2020,</b> 33, e2540	8
425	Improved quasi-physical zone division model with analytical electrothermal Ids model for AlGaN/GaN heterojunction high electron mobility transistors. <b>2020,</b> 33, e2630	1
424	Influence of fin width and gate structure on the performance of AlGaN/GaN fin-shaped HEMTs. <b>2020,</b> 33, e2641	2
423	High pressure studies of radiative recombination processes in nitride semiconductor alloys and quantum structures. <b>2020,</b> 59, SA0802	

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421	The Effect of Introducing Optical Blanking on GaN Epitaxy Using Pulsed Laser Deposition Technology. <b>2020</b> , 217, 1900517	
420	III-Nitride Tunneling Hot Electron Transfer Amplifier (THETA). <b>2020</b> , 109-157	0
419	Investigation of ultra-scaled AlN/GaN/InGaN double heterojunction HEMT for high-frequency applications. <b>2020</b> , 8, 472-482	1
418	Review of recent progresses on gallium nitride transistor in power conversion application. <b>2020</b> , 39, 88-100	7
417	. <b>2020</b> , 41, 143-146	11
416	Review of metallic phase change materials for high heat flux transient thermal management applications. <b>2020</b> , 258, 113955	50
415	N-polar AlN nucleation layers grown by hot-wall MOCVD on SiC: Effects of substrate orientation on the polarity, surface morphology and crystal quality. <b>2020</b> , 580, 411819	6
414	Avalanche Multiplication Noise in GaN pB Junctions Grown on Native GaN Substrates. <b>2020</b> , 257, 1900373	3
413	A review of GaN HEMT broadband power amplifiers. <b>2020</b> , 116, 153040	22
412	. <b>2020</b> , 67, 10905-10910	7
411	On the thermal stability of nearly lattice-matched AlInN films grown on GaN via MOVPE. <b>2020</b> , 533, 125469	6
410	Experimental Determination of Velocity-Field Characteristic of Holes in GaN. <b>2020</b> , 41, 23-25	3
409	An ab initio study of the structural and optoelectronic properties of Al <sub>x</sub> Ga <sub>1-x</sub> N (x = 0, 0.125, 0.375, 0.625, 0.875, and 1) semiconductors. <b>2020</b> , 19, 26-37	1
408	The Effects of Gate-Connected Field Plates on Hotspot Temperatures of AlGa <sub>x</sub> /Ga <sub>1-x</sub> N HEMTs. <b>2020</b> , 67, 57-62	4
407	Confirmation of the compensation of unintentional donors in AlGa <sub>x</sub> /Ga <sub>1-x</sub> N HEMT structures by Mg-doping during initial growth of GaN buffer layer. <b>2020</b> , 219, 116904	2
406	Low leakage GaN HEMTs with sub-100 nm T-shape gates fabricated by a low-damage etching process. <b>2020</b> , 31, 5886-5891	1
405	Ultra-low pressure drop membrane-based heat sink with 1000 W/cm <sup>2</sup> cooling capacity and 100% exit vapor quality. <b>2020</b> , 161, 120312	5



404	Au-free low-temperature ohmic contacts for AlGa <sub>N</sub> /AlN/GaN heterostructures. <b>2020</b> , 38, 062206	1
403	Experimental and theoretical study on device-processing-incorporated fluorine in AlGa <sub>N</sub> /GaN heterostructures. <b>2020</b> , 10, 065122	0
402	Early stage degradation related to dislocation evolution in neutron irradiated AlGa <sub>N</sub> /GaN HEMTs. <b>2020</b> , 117, 023501	5
401	Cu <sub>2</sub> O as hole injection layer on In-rich InGa <sub>N</sub> nanowires. <b>2020</b> , 128, 025304	4
400	Highly accurate GaN HEMT model based on the Angelov model with error compensation. <b>2020</b> , 62, 3505-3513	1
399	Improving the Current-Spreading Effect for GaN-Based Quasi-Vertical PIN Diode by Using an Embedded PN Junction. <b>2020</b> , 217, 2000146	2
398	Decomposition Resilience of GaN Nanowires, Crested and Surficially Passivated by AlN. <b>2020</b> , 20, 4867-4874	3
397	Physics-Based Device Models and Progress Review for Active Piezoelectric Semiconductor Devices. <b>2020</b> , 20,	6
396	Modeling Bias Dependence of Self-Heating in GaN HEMTs Using Two Heat Sources. <b>2020</b> , 67, 3082-3087	4
395	Annealing-Dependent Breakdown Voltage and Capacitance of Gallium Oxide-Based Gallium Nitride MOSOM Varactors. <b>2020</b> , 13,	0
394	Advances in DC/RF Performance of AlGa <sub>N</sub> /GaN MIS-HEMT by Incorporating Dual Metal Gate Architecture. <b>2020</b> , 1-9	3
393	Effects of periodic patterns in recessed ohmic contacts on InAlGa <sub>N</sub> /GaN heterostructures. <b>2020</b> , 174, 107917	1
392	. <b>2020</b> , 41, 1468-1471	3
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