Elison Matioli

List of Publications by Year
in descending order

94 papers	2,818 citations	230014 27 h-index	206121 51 g-index
95 all docs	95 docs citations	95 times ranked	2357 citing authors

#	Article	IF	Citations
1	Hard-Switching Losses in Power FETs: The Role of Output Capacitance. IEEE Transactions on Power Electronics, 2022, 37, 7604-7616.	5.4	6
2	Direct high-temperature growth of single-crystalline GaN on ScAlMgO₄ substrates by metalorganic chemical vapor deposition. Japanese Journal of Applied Physics, 2022, 61, 048002.	0.8	11
3	Intrinsic Polarization Super Junctions: Design of Single and Multichannel GaN Structures. IEEE Transactions on Electron Devices, 2022, 69, 1798-1804.	1.6	8
4	A perspective on multi-channel technology for the next-generation of GaN power devices. Applied Physics Letters, 2022, 120, .	1.5	16
5	Nanoplasma-Based Millimeter-Wave Modulators on a Single Metal Layer. IEEE Electron Device Letters, 2022, 43, 1355-1358.	2.2	0
6	Enhancement-Mode Multi-Channel AlGaN/GaN Transistors With LiNiO Junction Tri-Gate. IEEE Electron Device Letters, 2022, 43, 1523-1526.	2.2	3
7	Microfluidic cooling for GaN electronic devices. , 2022, , 407-439.		0
8	High-Accuracy Calibration-Free Calorimeter for the Measurement of Low Power Losses. IEEE Transactions on Power Electronics, 2021, 36, 23-28.	5.4	10
9	Analysis of Large-Signal Output Capacitance of Transistors Using Sawyerâ€"Tower Circuit. IEEE Journal of Emerging and Selected Topics in Power Electronics, 2021, 9, 3647-3656.	3.7	20
10	Ultra-compact, High-Frequency Power Integrated Circuits Based on GaN-on-Si Schottky Barrier Diodes. IEEE Transactions on Power Electronics, 2021, 36, 1269-1273.	5.4	31
11	Conformal Passivation of Multi-Channel GaN Power Transistors for Reduced Current Collapse. IEEE Electron Device Letters, 2021, 42, 86-89.	2.2	18
12	Erratum to â€œComparison of Wide-Band-Gap Technologies for Soft-Switching Losses at High Frequenciesâ€•[Dec 20 12595-12600]. IEEE Transactions on Power Electronics, 2021, 36, 2444-2445.	5.4	0
13	Parallel PV Configuration with Magnetic-Free Switched Capacitor Module-Level Converters for Partial Shading Conditions. Energies, 2021, 14, 456.	1.6	2
14	P-GaN Tri-Gate MOS Structure for Normally-Off GaN Power Transistors. IEEE Electron Device Letters, 2021, 42, 82-85.	2.2	21
15	Multi-channel nanowire devices for efficient power conversion. Nature Electronics, 2021, 4, 284-290.	13.1	46
16	Quasi-vertical GaN-on-Si reverse blocking power MOSFETs. Applied Physics Express, 2021, 14, 046503.	1.1	7
17	High conductivity InAlN/GaN multi-channel two-dimensional electron gases. Semiconductor Science and Technology, 2021, 36, 055020.	1.0	4
18	LiNiO Gate Dielectric with Tri-Gate Structure for High Performance E-mode GaN transistors. , 2021, , .		2

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19	Resonances on GaN-on-Si Epitaxies: A Source of Output Capacitance Losses in Power HEMTs. IEEE Electron Device Letters, 2021, 42, 735-738.	2.2	5
20	Kilowatt-Range Picosecond Switching Based on Microplasma Devices. IEEE Electron Device Letters, 2021, 42, 767-770.	2.2	4
21	High-Performance Enhancement-Mode AlGaN/GaN Multi-Channel Power Transistors. , 2021, , .		7
22	p-NiO Junction Termination Extensions for High Voltage Vertical GaN Devices. , 2021, , .		0
23	Optimized Kilowatt-Range Boost Converter Based on Impulse Rectification With 52 kW/l and 98.6% Efficiency. IEEE Transactions on Power Electronics, 2021, 36, 7389-7394.	5.4	6
24	Performance of GaN Power Devices for Cryogenic Applications Down to 4.2 K. IEEE Transactions on Power Electronics, 2021, 36, 7412-7416.	5.4	46
25	Seed Dibbling Method for the Growth of High-Quality Diamond on GaN. ACS Applied Materials & Interfaces, 2021, 13, 43516-43523.	4.0	13
26	Impact of Embedded Liquid Cooling on the Electrical Characteristics of GaN-on-Si Power Transistors. IEEE Electron Device Letters, 2021, 42, 1642-1645.	2.2	9
27	GaN-based power devices: Physics, reliability, and perspectives. Journal of Applied Physics, 2021, 130, .	1.1	191
28	Embedded Microchannel Cooling for Monolithically-integrated GaN Half-bridge ICs. , 2021, , .		1
29	Active-Device Losses in Resonant Power Converters: A Case Study with Class-E Inverters. , 2021, , .		4
30	Microchannel-based Calorimeter for Rapid and Accurate Loss Measurements on High-efficiency Power Converters. , 2021, , .		2
31	Figures-of-Merit of Lateral GaN Power Devices: Modeling and Comparison of HEMTs and PSJs. IEEE Journal of the Electron Devices Society, 2021, 9, 1066-1075.	1.2	9
32	<i>p</i>-GaN field plate for low leakage current in lateral GaN Schottky barrier diodes. Applied Physics Letters, 2021, 119, .	1.5	5
33	Measurement of Large-Signal <i>C</i> _{OSS} and <i>C</i> _{OSS} Losses of Transistors Based on Nonlinear Resonance. IEEE Transactions on Power Electronics, 2020, 35, 2242-2246.	5.4	27
34	Fully Soft-Switched High Step-Up Nonisolated Three-Port DCâ€"DC Converter Using GaN HEMTs. IEEE Transactions on Industrial Electronics, 2020, 67, 8371-8380.	5.2	47
35	H-Terminated Polycrystalline Diamond p-Channel Transistors on GaN-on-Silicon. IEEE Electron Device Letters, 2020, 41, 119-122.	2.2	12
36	Broadband Zero-Bias RF Field-Effect Rectifiers Based on AlGaN/GaN Nanowires. IEEE Microwave and Wireless Components Letters, 2020, 30, 66-69.	2.0	10

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37	Fast-Switching Tri-Anode Schottky Barrier Diodes for Monolithically Integrated GaN-on-Si Power Circuits. IEEE Electron Device Letters, 2020, 41, 99-102.	2.2	26
38	New Insights on Output Capacitance Losses in Wide-Band-Gap Transistors. IEEE Transactions on Power Electronics, 2020, 35, 6663-6667.	5.4	27
39	C_{oss} Loss Tangent of Field-Effect Transistors: Generalizing High-Frequency Soft-Switching Losses. IEEE Transactions on Power Electronics, 2020, 35, 12585-12589.	5.4	7
40	High-Frequency GaN-on-Si power integrated circuits based on Tri-Anode SBDs. , 2020, , .		2
41	Output Capacitance Losses in Wide-Band-Gap Transistors: A Small-Signal Modeling Approach. , 2020, , .		6
42	Embedded Microchannel Cooling for High Power-Density GaN-on-Si Power Integrated Circuits. , 2020, , .		7
43	Co-designing electronics with microfluidics for more sustainable cooling. Nature, 2020, 585, 211-216.	13.7	437
44	Investigation of p-GaN tri-Gate normally-Off GaN Power MOSHEMTs. , 2020, , .		3
45	Comparison of Wide-Band-Gap Technologies for Soft-Switching Losses at High Frequencies. IEEE Transactions on Power Electronics, 2020, 35, 12595-12600.	5.4	54
46	Enhanced DAB for Efficiency Preservation Using Adjustable-Tap High-Frequency Transformer. IEEE Transactions on Power Electronics, 2020, 35, 6673-6677.	5.4	44
47	Negative Resistance in Cascode Transistors. IEEE Transactions on Power Electronics, 2020, 35, 9978-9981.	5.4	1
48	Nanoplasma-enabled picosecond switches for ultrafast electronics. Nature, 2020, 579, 534-539.	13.7	55
49	Multi-Channel AlGaN/GaN In-Plane-Gate Field-Effect Transistors. IEEE Electron Device Letters, 2020, 41, 321-324.	2.2	16
50	Efficient Microchannel Cooling of Multiple Power Devices With Compact Flow Distribution for High Power-Density Converters. IEEE Transactions on Power Electronics, 2020, 35, 7235-7245.	5.4	44
51	Efficient High Step-Up Operation in Boost Converters Based on Impulse Rectification. IEEE Transactions on Power Electronics, 2020, 35, 11287-11293.	5.4	7
52	Bringing the Heat Sink Closer to the Heat: Evaluating Die-Embedded Microchannel Cooling of GaN-on-Si Power Devices. , 2020, , .		5
53	Enhanced-DAB Converter: Comprehensive Design Evaluation. , 2020, , .		0
54	Mixed Simulation-Experimental Optimization of a Modular Multilevel Switched Capacitors Converter Cell. , 2020, , .		0

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55	Small-Signal Approach for Precise Evaluation of Gate Losses in Soft-Switched Wide-Band-Gap Transistors. , 2020, , .		1
56	Calibration-Free Calorimeter for Sensitive Loss Measurements: Case of High-Frequency Inductors. , 2020, , .		5
57	Investigation on Output Capacitance Losses in Superjunction and GaN-on-Si Power Transistors. , 2020, , .		3
58	Output-Capacitance Hysteresis Losses of Field-Effect Transistors. , 2020, , .		6
59	Analysis of Output Capacitance Co-Energy and Discharge Losses in Hard-Switched FETs. , 2020, , .		2
60	High-performance normally-off tri-gate GaN power MOSFETs. , 2019, , .		2
61	A manifold microchannel heat sink for ultra-high power density liquid-cooled converters. , 2019, , .		11
62	On the Dynamic Performance of Laterally Gated Transistors. IEEE Electron Device Letters, 2019, 40, 1171-1174.	2.2	2
63	High-Voltage Normally-off Recessed Tri-Gate GaN Power MOSFETs With Low on-Resistance. IEEE Electron Device Letters, 2019, 40, 1289-1292.	2.2	33
64	GaN Transistors for Miniaturized Pulsed-Power Sources. IEEE Transactions on Plasma Science, 2019, 47, 3241-3245.	0.6	4
65	Impact of Fin Width on Tri-Gate GaN MOSHEMTs. IEEE Transactions on Electron Devices, 2019, 66, 4068-4074.	1.6	22
66	Fully Vertical GaN-on-Si power MOSFETs. IEEE Electron Device Letters, 2019, 40, 443-446.	2.2	73
67	High-Performance Nanowire-Based E-Mode Power GaN MOSHEMTs With Large Work-Function Gate Metal. IEEE Electron Device Letters, 2019, 40, 439-442.	2.2	30
68	Ultra-High Power Density Magnetic-less DC/DC Converter Utilizing GaN Transistors. , 2019, , .		8
69	On-Chip High-Voltage Sensors Based on Trap-Assisted 2DEG Channel Control. IEEE Electron Device Letters, 2019, 40, 613-615.	2.2	3
70	1200 V Multi-Channel Power Devices with 2.8 â„¦â€¢mm ON-Resistance. , 2019, , .		13
71	Near-junction heat spreaders for hot spot thermal management of high power density electronic devices. Journal of Applied Physics, 2019, 126, .	1.1	17
72	Multi-Channel Tri-Gate GaN Power Schottky Diodes With Low ON-Resistance. IEEE Electron Device Letters, 2019, 40, 275-278.	2.2	47

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73	2â€‰kV slanted tri-gate GaN-on-Si Schottky barrier diodes with ultra-low leakage current. Applied Physics Letters, 2018, 112, .	1.5	47
74	820-V GaN-on-Si Quasi-Vertical p-i-n Diodes With BFOM of 2.0 GW/cm2. IEEE Electron Device Letters, 2018, 39, 401-404.	2.2	61
75	GaN-on-Si Quasi-Vertical Power MOSFETs. IEEE Electron Device Letters, 2018, 39, 71-74.	2.2	78
76	Multi-channel tri-gate normally-on/off AlGaN/GaN MOSHEMTs on Si substrate with high breakdown voltage and low ON-resistance. Applied Physics Letters, 2018, 113, .	1.5	49
77	Monolithic integration of GaN-based NMOS digital logic gate circuits with E-mode power GaN MOSHEMTs. , 2018, , .		27
78	1100 V AlGaN/GaN MOSHEMTs With Integrated Tri-Anode Freewheeling Diodes. IEEE Electron Device Letters, 2018, 39, 1038-1041.	2.2	21
79	Vertical GaN-on-Si MOSFETs With Monolithically Integrated Freewheeling Schottky Barrier Diodes. IEEE Electron Device Letters, 2018, 39, 1034-1037.	2.2	58
80	High Performance Tri-Gate GaN Power MOSHEMTs on Silicon Substrate. IEEE Electron Device Letters, 2017, 38, 367-370.	2.2	69
81	High-Voltage and Low-Leakage AlGaN/GaN Tri-Anode Schottky Diodes With Integrated Tri-Gate Transistors. IEEE Electron Device Letters, 2017, 38, 83-86.	2.2	46
82	Slanted Tri-Gates for High-Voltage GaN Power Devices. IEEE Electron Device Letters, 2017, 38, 1305-1308.	2.2	55
83	Field Plate Design for Low Leakage Current in Lateral GaN Power Schottky Diodes: Role of the Pinch-off Voltage. IEEE Electron Device Letters, 2017, 38, 1298-1301.	2.2	28
84	In-Plane-Gate GaN Transistors for High-Power RF Applications. IEEE Electron Device Letters, 2017, 38, 1413-1416.	2.2	7
85	900 V Reverse-Blocking GaN-on-Si MOSHEMTs With a Hybrid Tri-Anode Schottky Drain. IEEE Electron Device Letters, 2017, 38, 1704-1707.	2.2	35
86	Magneto-ballistic transport in GaN nanowires. Applied Physics Letters, 2016, 109, .	1.5	10
87	Enhanced Electrical Performance and Heat Dissipation in AlGaN/GaN Schottky Barrier Diodes Using Hybrid Tri-anode Structure. IEEE Transactions on Electron Devices, 2016, , 1-6.	1.6	19
88	Improved electrical and thermal performances in nanostructured GaN devices. , 2016, , .		5
89	Room-Temperature Ballistic Transport in III-Nitride Heterostructures. Nano Letters, 2015, 15, 1070-1075.	4.5	23
90	Ultralow Leakage Current AlGaN/GaN Schottky Diodes With 3-D Anode Structure. IEEE Transactions on Electron Devices, 2013, 60, 3365-3370.	1.6	119

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91	Low leakage normally-off tri-gate GaN MISFET. , 2012, , .		1
92	Tri-Gate Normally-Off GaN Power MISFET. IEEE Electron Device Letters, 2012, 33, 360-362.	2.2	210
93	High-brightness polarized light-emitting diodes. Light: Science and Applications, 2012, 1, e22-e22.	7.7	217
94	p-NiO junction termination extensions for GaN power devices. Applied Physics Express, 0, , .	1.1	6