Giovanni Crupi

List of Publications by Year
in descending order

153	2,550	159585 30	254184 43
papers	citations	h-index	g-index

155	155	155	1161
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Accurate Multibias Equivalent-Circuit Extraction for GaN HEMTs. IEEE Transactions on Microwave Theory and Techniques, 2006, 54, 3616-3622.	4.6	151
2	A comprehensive review on microwave FinFET modeling for progressing beyond the state of art. Solid-State Electronics, 2013, 80, 81-95.	1.4	121
3	Nonlinear Dispersive Modeling of Electron Devices Oriented to GaN Power Amplifier Design. IEEE Transactions on Microwave Theory and Techniques, 2010, 58, 710-718.	4.6	99
4	Embedded DSP-Based Telehealth Radar System for Remote In-Door Fall Detection. IEEE Journal of Biomedical and Health Informatics, 2015, 19, 92-101.	6.3	78
5	A New Millimeter-Wave Small-Signal Modeling Approach for pHEMTs Accounting for the Output Conductance Time Delay. IEEE Transactions on Microwave Theory and Techniques, 2008, 56, 741-746.	4.6	70
6	Neural approach for temperatureâ€dependent modeling of GaN HEMTs. International Journal of Numerical Modelling: Electronic Networks, Devices and Fields, 2015, 28, 359-370.	1.9	67
7	GaN HEMT Noise Model Based on Electromagnetic Simulations. IEEE Transactions on Microwave Theory and Techniques, 2015, 63, 2498-2508.	4.6	66
8	An Extensive Experimental Analysis of the Kink Effects in ${ S}_{22}$ and ${ h}_{21}$ for a GaN HEMT. IEEE Transactions on Microwave Theory and Techniques, 2014, 62, 513-520.	4.6	61
9	Temperature Influence on GaN HEMT Equivalent Circuit. IEEE Microwave and Wireless Components Letters, 2016, 26, 813-815.	3.2	61
10	A review on the artificial neural network applications for smallâ€signal modeling of microwave FETs. International Journal of Numerical Modelling: Electronic Networks, Devices and Fields, 2020, 33, e2668.	1.9	61
11	Scalable and multibias high frequency modeling of multi-fin FETs. Solid-State Electronics, 2006, 50, 1780-1786.	1.4	51
12	On the small signal modeling of advanced microwave FETs: A comparative study. International Journal of RF and Microwave Computer-Aided Engineering, 2008, 18, 417-425.	1.2	47
13	A Planar One-Port Microwave Microfluidic Sensor for Microliter Liquids Characterization. IEEE Journal of Electromagnetics, RF and Microwaves in Medicine and Biology, 2018, 2, 10-17.	3.4	46
14	The large world of FET small-signal equivalent circuits (invited paper). International Journal of RF and Microwave Computer-Aided Engineering, 2016, 26, 749-762.	1.2	43
15	Microwave Characterization and Modeling of Packaged HEMTs by a Direct Extraction Procedure Down to 30 K. IEEE Transactions on Instrumentation and Measurement, 2006, 55, 465-470.	4.7	42
16	Investigation on the non-quasi-static effect implementation for millimeter-wave FET models. International Journal of RF and Microwave Computer-Aided Engineering, 2010, 20, 87-93.	1.2	42
17	Comparison between analytical and neural approaches for multibias small signal modeling of microwaveâ€scaled FET<scp>s</scp>. Microwave and Optical Technology Letters, 2010, 52, 2238-2244.	1.4	40
18	Empowering GaN HEMT models: The gateway for power amplifier design. International Journal of Numerical Modelling: Electronic Networks, Devices and Fields, 2017, 30, e2125.	1.9	40

#	Article	IF	Citations
19	Determination and Validation of New Nonlinear FinFET Model Based on Lookup Tables. IEEE Microwave and Wireless Components Letters, 2007, 17, 361-363.	3.2	39
20	On waferâ€scaled GaAs HEMTs: Direct and robust small signal modeling up to 50 GHz. Microwave and Optical Technology Letters, 2009, 51, 1958-1963.	1.4	36
21	Purely analytical extraction of an improved nonlinear FinFET model including non-quasi-static effects. Microelectronic Engineering, 2009, 86, 2283-2289.	2.4	36
22	Investigation on the thermal behavior of microwave GaN HEMTs. Solid-State Electronics, 2011, 64, 28-33.	1.4	36
23	Temperature effects on DC and small signal RF performance of AlGaAs/GaAs HEMTs. Microelectronics Reliability, 2006, 46, 169-173.	1.7	35
24	High-Frequency Extraction of the Extrinsic Capacitances for GaN HEMT Technology. IEEE Microwave and Wireless Components Letters, 2011, 21, 445-447.	3.2	35
25	A robust and fast procedure for the determination of the small signal equivalent circuit of HEMTs. Microelectronics Journal, 2004, 35, 431-436.	2.0	33
26	Accurate GaN HEMT nonquasiâ€static largeâ€signal model including dispersive effects. Microwave and Optical Technology Letters, 2011, 53, 692-697.	1.4	33
27	Kink Effect in <formula formulatype="inline"> <tex Notation="TeX">${m S}_{22}$</tex></formula> for GaN and GaAs HEMTs. IEEE Microwave and Wireless Components Letters, 2015, 25, 301-303.	3.2	32
28	Reliable noise modeling of GaN HEMTs for designing lowâ€noise amplifiers. International Journal of Numerical Modelling: Electronic Networks, Devices and Fields, 2020, 33, e2585.	1.9	32
29	Microwave FinFET modeling based on artificial neural networks including lossy silicon substrate. Microelectronic Engineering, 2011, 88, 3158-3163.	2.4	31
30	Microwave noise modeling of FinFETs. Solid-State Electronics, 2011, 56, 18-22.	1.4	31
31	Technology-Independent Non-Quasi-Static Table-Based Nonlinear Model Generation. IEEE Transactions on Microwave Theory and Techniques, 2009, 57, 2845-2852.	4.6	30
32	Millimeter-Wave FET Nonlinear Modelling Based on the Dynamic-Bias Measurement Technique. IEEE Transactions on Microwave Theory and Techniques, 2014, 62, 2526-2537.	4.6	29
33	GaN HEMT noise modeling based on 50â€Î© noise factor. Microwave and Optical Technology Letters, 2015, 57, 937-942.	1.4	24
34	Investigation on TG n-FinFET Parameters by Varying Channel Doping Concentration and Gate Length. Silicon, 2017, 9, 885-893.	3.3	24
35	High-periphery GaN HEMT modeling up to 65â€GHz and 200â€Â°C. Solid-State Electronics, 2019, 152, 11-16.	1.4	24
36	Electrical Characteristics of 8-nm SOI n-FinFETs. Silicon, 2016, 8, 497-503.	3.3	20

#	Article	IF	Citations
37	Waveforms-Only Based Nonlinear De-Embedding in Active Devices. IEEE Microwave and Wireless Components Letters, 2012, 22, 215-217.	3.2	18
38	Remarks of an Extensive Investigation on the Microwave HEMT Behavior Under Illumination. IEEE Microwave and Wireless Components Letters, 2014, 24, 102-104.	3.2	18
39	Nonlinear-Embedding Design Methodology Oriented to LDMOS Power Amplifiers. IEEE Transactions on Power Electronics, 2018, 33, 8764-8774.	7.9	18
40	Technology-Independent Analysis of the Double Current-Gain Peak in Millimeter-Wave FETs. IEEE Microwave and Wireless Components Letters, 2018, 28, 326-328.	3.2	18
41	Temperature and bias investigation of self heating effect and threshold voltage shift in pHEMT's. Microelectronics Journal, 2005, 36, 732-736.	2.0	17
42	The Kink Phenomenon in the Transistor ${m S} _{22}$: A Systematic and Numerical Approach. IEEE Microwave and Wireless Components Letters, 2012, 22, 406-408.	3.2	17
43	Multibias neural modeling of fin fieldâ€effect transistor admittance parameters. Microwave and Optical Technology Letters, 2012, 54, 2082-2088.	1.4	17
44	Measurement-Based Extraction and Analysis of a Temperature-Dependent Equivalent-Circuit Model for a SAW Resonator: From Room Down to Cryogenic Temperatures. IEEE Sensors Journal, 2021, 21, 12202-12211.	4.7	17
45	Accurate silicon dummy structure model for nonlinear microwave FinFET modeling. Microelectronics Journal, 2010, 41, 574-578.	2.0	16
46	Identification technique of FET model based on vector nonlinear measurements. Electronics Letters, 2011, 47, 1323.	1.0	16
47	A clearâ€cut understanding of the currentâ€gain peak in HEMTs: Theory and experiments. Microwave and Optical Technology Letters, 2012, 54, 2801-2806.	1.4	16
48	A New Study on the Temperature and Bias Dependence of the Kink Effects in S22 and h21 for the GaN HEMT Technology. Electronics (Switzerland), 2018, 7, 353.	3.1	16
49	Characterization and Neural Modeling of a Microwave Gas Sensor for Oxygen Detection Aimed at Healthcare Applications. Sensors, 2020, 20, 7150.	3.8	15
50	Numerical modeling of two microwave sensors for biomedical applications. International Journal of Numerical Modelling: Electronic Networks, Devices and Fields, 2021, 34, .	1.9	15
51	Effects of Varying the Fin Width, Fin Height, Gate Dielectric Material, and Gate Length on the DC and RF Performance of a 14-nm SOI FinFET Structure. Electronics (Switzerland), 2022, 11, 91.	3.1	15
52	A Broadband PA Design Based on Bayesian Optimization Augmented by Dynamic Feasible Region Shrinkage. IEEE Microwave and Wireless Components Letters, 2022, 32, 1139-1142.	3.2	15
53	On the noise measurements and modeling for on wafer HEMTs up to 26.5 GHz. Microwave and Optical Technology Letters, 2010, 52, 1799-1803.	1.4	14
54	In-deep insight into the extrinsic capacitance impact on GaN HEMT modeling at millimeter-wave band. International Journal of RF and Microwave Computer-Aided Engineering, 2012, 22, 308-318.	1.2	14

#	Article	IF	Citations
55	Vector two-tone measurements for validation of non-linear microwave FinFET model. Microelectronic Engineering, 2010, 87, 2008-2013.	2.4	13
56	Nonlinear modeling of LDMOS transistors for highâ€power FM transmitters. International Journal of Numerical Modelling: Electronic Networks, Devices and Fields, 2014, 27, 780-791.	1.9	13
57	Effects of Gate-Length Scaling on Microwave MOSFET Performance. Electronics (Switzerland), 2017, 6, 62.	3.1	13
58	Scalability of Multifinger HEMT Performance. IEEE Microwave and Wireless Components Letters, 2020, 30, 869-872.	3.2	13
59	Temperature-Sensitivity of Two Microwave HEMT Devices: AlGaAs/GaAs vs. AlGaN/GaN Heterostructures. Electronics (Switzerland), 2021, 10, 1115.	3.1	13
60	Small-Versus Large-Signal Extraction of Charge Models of Microwave FETs. IEEE Microwave and Wireless Components Letters, 2014, 24, 394-396.	3.2	12
61	Comparative analysis of microwave lowâ€noise amplifiers under laser illumination. Microwave and Optical Technology Letters, 2016, 58, 2437-2443.	1.4	12
62	Light activation of noise at microwave frequencies: a study on scaled gallium arsenide HEMT's. IET Circuits, Devices and Systems, 2018, 12, 242-248.	1.4	12
63	On the Performance Evaluation of Commercial SAW Resonators by Means of a Direct and Reliable Equivalent-Circuit Extraction. Micromachines, 2021, 12, 303.	2.9	12
64	Nonlinear modeling of GaAs pHEMTs for millimeter-wave mixer design. Solid-State Electronics, 2015, 104, 25-32.	1.4	11
65	Microwave noise parameter modeling of a GaAs HEMT under optical illumination. Microwave and Optical Technology Letters, 2016, 58, 151-154.	1.4	11
66	Thermal influence on S₂₂ kink behavior of a 0.15 Î¼m gate length AlGaN/GaN/SiC HEMT for microwave applications. Semiconductor Science and Technology, 2019, 34, 035002.	2.0	11
67	Multibias and temperature dependence of the currentâ€gain peak in GaN HEMT. International Journal of RF and Microwave Computer-Aided Engineering, 2020, 30, e22129.	1.2	11
68	3-D Simulation of Nanoscale SOI n-FinFET at a Gate Length of 8 nm Using ATLAS SILVACO. Transactions on Electrical and Electronic Materials, 2015, 16, 156-161.	1.9	11
69	On the soft breakdown phenomenon in AlGaAs/InGaAs HEMT: An experimental study down to cryogenic temperature. Solid-State Electronics, 2005, 49, 928-934.	1.4	10
70	Fundamentals and extraction of velocity saturation in sub-100nm (110)-Si and (100)-Ge. , 2008, , .		10
71	Identification of the intrinsic capacitive core for GaAs HEMTs by investigating the frequency behavior of the impedance parameters. Microwave and Optical Technology Letters, 2013, 55, 1237-1240.	1.4	10
72	Biosensor Using a One-Port Interdigital Capacitor: A Resonance-Based Investigation of the Permittivity Sensitivity for Microfluidic Broadband Bioelectronics Applications. Electronics (Switzerland), 2020, 9, 340.	3.1	10

#	Article	IF	Citations
73	An Improved Transistor Modeling Methodology Exploiting the Quasi-Static Approximation. IEEE Journal of the Electron Devices Society, 2021, 9, 378-386.	2.1	10
74	On the evaluation of the high-frequency load line in active devices. International Journal of Microwave and Wireless Technologies, 2011, 3, 19-24.	1.9	9
75	3D Investigation of 8-nm Tapered n-FinFET Model. Silicon, 2020, 12, 1585-1591.	3.3	9
76	On the design and characterisation of a microwave microstrip resonator for gas sensing applications. Acta IMEKO (2012), 2021, 10, 54.	0.7	9
77	A novel technique for the extraction of nonlinear model for microwave transistors under dynamic-bias operation. , 2013, , .		8
78	A link between noise parameters and light exposure in GaAs pHEMTâ€™s. Solid-State Electronics, 2015, 105, 16-20.	1.4	8
79	An Experimental and Systematic Insight into the Temperature Sensitivity for a 0.15-Âµm Gate-Length HEMT Based on the GaN Technology. Micromachines, 2021, 12, 549.	2.9	8
80	A Novel Design Methodology for a Multioctave GaN-HEMT Power Amplifier Using Clustering Guided Bayesian Optimization. IEEE Access, 2022, 10, 52771-52781.	4.2	8
81	Microwave characterization and modeling of packaged HEMTs by a direct extraction procedure at cryogenic temperatures. , 0, , .		7
82	On the neural approach for FET small-signal modelling up to 50GHz. , 2010, , .		7
83	Microwave small-signal modelling of FinFETs using multi-parameter rational fitting method. Electronics Letters, 2011, 47, 1084.	1.0	7
84	Straightforward modeling of dynamic I-V characteristics for microwave FETs. International Journal of RF and Microwave Computer-Aided Engineering, 2014, 24, 109-116.	1.2	7
85	Equivalentâ€circuitâ€“based modeling of the scattering and noise parameters for multiâ€finger GaAs pHEMTs. International Journal of Numerical Modelling: Electronic Networks, Devices and Fields, 2020, 33, e2587.	1.9	7
86	Experimental insight into the temperature effects on <scp>DC</scp> and microwave characteristics for a <scp>GaAs pHEMT</scp> in multilayer <scp>3â€D MMIC</scp> technology. International Journal of RF and Microwave Computer-Aided Engineering, 2020, 30, e22379.	1.2	7
87	Microwave Transducers for Gas Sensing: A Challenging and Promising New Frontier. IEEE Instrumentation and Measurement Magazine, 2022, 25, 42-51.	1.6	7
88	A robust approach for the direct extraction of HEMT circuit elements vs. bias and temperature. , 0, , .		6
89	Microwave neural modeling for silicon FinFET varactors. International Journal of Numerical Modelling: Electronic Networks, Devices and Fields, 2014, 27, 834-845.	1.9	6
90	<scp>2â€mmâ€gateâ€periphery GaN</scp> high electron mobility transistor <scp>s</scp> on <scp>SiC</scp> and Si substrates: A comparative analysis from a <scp>smallâ€signal</scp> standpoint. International Journal of RF and Microwave Computer-Aided Engineering, 2021, 31, e22642.	1.2	6

#	Article	IF	Citations
91	Simple, Fast, and Accurate Broadband Complex Permittivity Characterization Algorithm: Methodology and Experimental Validation from 140 GHz up to 220 GHz. Electronics (Switzerland), 2022, 11, 366.	3.1	6
92	Analytical modeling of Iâ€“V characteristics using 2D Poisson equations in AlN/Î²-Ga2O3 HEMT. Materials Science in Semiconductor Processing, 2022, 145, 106627.	4.0	6
93	Impact of the self-generated heat on the scalability of HEMTs. Microelectronic Engineering, 2005, 82, 143-147.	2.4	5
94	Non-linear look-up table modeling of GaAs HEMTs for mixer application. , 2012, , .		5
95	Artificial Neural Network Modeling of Interdigital Capacitor Sensor for Oxygen Detection. , 2020, , .		5
96	Cryogenic Electrical Characterization and Equivalent-Circuit Modeling of SAW Resonators. , 2020, , .		5
97	Measurementâ€based analysis of GaAs HEMT technologies: Multilayer Dâ€H pseudomorphic HEMT versus conventional Sâ€H HEMT. International Journal of Numerical Modelling: Electronic Networks, Devices and Fields, 2021, 34, e2873.	1.9	5
98	Temperature Dependence of Electrical Parameters of Silicon-on-Insulator Triple Gate n-Channel Fin Field Effect Transistor. Transactions on Electrical and Electronic Materials, 2016, 17, 329-334.	1.9	5
99	Design and Characterization of a Microwave Transducer for Gas Sensing Applications. Chemosensors, 2022, 10, 127.	3.6	5
100	Analytical extraction of small and large signal models for FinFET varactors. Solid-State Electronics, 2008, 52, 704-710.	1.4	4
101	Combined empirical and look-up table approach for non-quasi-static modelling of GaN HEMTs. , 2009, , .		4
102	Theoretical and experimental determination of onset and scaling of non-quasi-static phenomena for interdigitated fin field effect transistors. IET Circuits, Devices and Systems, 2010, 4, 531.	1.4	4
103	A de-embedding procedure oriented to the determination of FET intrinsic I-V characteristics from high-frequency large-signal measurements. , 2010, , .		4
104	Waveforms-based large-signal identification of transistor models. , 2012, , .		4
105	Nonlinear model for 40-GHz cold-FET operation. , 2014, , .		4
106	A scalable HEMT noise model based on FW-EM analyses. , 2014, , .		4
107	Neural procedure for microwave MOSFET modelling versus bias and gate length. , 2017, , .		4
108	Temperature Dependent Small-Signal Neural Modeling of High-Periphery GaN HEMTs. , 2019, , .		4

#	Article	IF	Citations
109	Microwave Linear Characterization Procedures of On-Wafer Scaled GaAs pHEMTs for Low-Noise Applications. Electronics (Switzerland), 2019, 8, 1365.	3.1	4
110	On the Gas Sensing Properties of Microwave Transducers. , 2020, , .		4
111	Device Noise Parameters Characterization: Towards Extraction Automation.. , 2020, , .		4
112	Development of a multi-transduction system for breath analysis in neurodegenerative diseases. , 2021, , .		4
113	Equivalent Circuit Model Extraction for a SAW Resonator: Below and above Room Temperature. Sensors, 2022, 22, 2546.	3.8	4
114	Evaluation of lookup-table non-quasi-static nonlinear models at microwave and mm-wave frequencies. , 2010, , .		3
115	GaN HEMT large-signal model accounting for both low-frequency dispersion and high-frequency non-quasi-static effects. , 2011, , .		3
116	Artificial neural network based modeling of FinFET forward transmission coefficient. , 2011, , .		3
117	Light sensitivity of GaAs pHEMT's: A close insight into the microwave noise behavior. , 2014, , .		3
118	Blackâ€box noise modeling of GaAs HEMTs under illumination. International Journal of Numerical Modelling: Electronic Networks, Devices and Fields, 2015, 28, 698-706.	1.9	3
119	Performance analysis of a microwave low-noise amplifier under laser illumination. , 2015, , .		3
120	Wave approach for noise modeling of gallium nitride high electronâ€mobility transistors. International Journal of Numerical Modelling: Electronic Networks, Devices and Fields, 2017, 30, e2138.	1.9	3
121	Thermal characterization of high-power GaN HEMTs up to 65 GHz. , 2017, , .		3
122	Reliable PSO Based Noise Modeling Approach Applied to GaN HEMTs. , 2018, , .		3
123	Extrinsic capacitance extraction for GaAs and GaN FETs from low to high temperatures. Semiconductor Science and Technology, 2018, 33, 085007.	2.0	3
124	A Comprehensive and Critical Overview of the Kink Effect in S₂₂ for HEMT Technology. , 2019, , .		3
125	Cross-Laboratory Experimental Validation of a Tunerless Technique for the Microwave Noise Parameters Extraction. IEEE Transactions on Microwave Theory and Techniques, 2021, 69, 1733-1739.	4.6	3
126	<scp>Equivalentâ€circuit</scp> extraction for gallium nitride electron devices: Direct versus <scp>optimizationâ€empowered</scp> approaches. International Journal of Numerical Modelling: Electronic Networks, Devices and Fields, 2022, 35, .	1.9	3

#	Article	IF	Citations
127	Development of an Inkjet-Printed Interdigitated Device: CAD, Fabrication, and Testing. , 2021, , .		3
128	Analytical Construction of Nonlinear Lookup Table Model for Advanced Microwave Transistors. , 2007, , .		2
129	Non-quasi-static nonlinear model for FinFETs using higher-order sources. , 2008, , .		2
130	Extraction and Analysis of Noise Parameters of On Wafer HEMTs up to 26.5 GHz. , 2009, , .		2
131	Transistor vector load-pull characterization for millimeter-wave power amplifier design. , 2012, , .		2
132	A neural network approach for nonlinear modelling of LDMOSFETs. , 2014, , .		2
133	Currentâ€gain in FETs beyond cutâ€off frequency. Microwave and Optical Technology Letters, 2018, 60, 3023-3026.	1.4	2
134	Microfluidic Biosensor for Bioengineering: High-frequency Equivalent-Circuit Modeling of Interdigital Capacitor. , 2019, , .		2
135	Temperature dependent vector large-signal measurements. , 2011, , .		1
136	Modelling insight into the resonance frequencies of the microwave impedance parameters for GaAs HEMTs. , 2013, , .		1
137	Artificial neural network modeling for transistors and varactors in FinFET technology. , 2013, , .		1
138	A scalable HEMT noise model based on FW-EM analyses. , 2014, , .		1
139	GaN HEMT modelling through 50-Ω NF measurements. , 2015, , .		1
140	Neural network modelling of GaAs pHEMTs suitable for millimeter-wave mixer design. , 2015, , .		1
141	Multi-bias equivalent circuit for MOSFET modelling. , 2017, , .		1
142	A Clear-Cut Introduction to the De-embedding Concept. , 2014, , 1-45.		1
143	Effects of the Gate Dielectric Material on the Performance of a 14-nm SOI FinFET. , 2021, , .		1
144	Optimizing microwave measurements for model construction and validation. , 0, , 257-286.		0

#	Article	IF	Citations
145	Team projects for ICT master students: Evaluation and case studies. , 2011, , .		0
146	High-frequency multi-bias small-signal neural modeling for FinFET. , 2012, , .		0
147	Call for Papers: Modeling of high-frequency silicon transistors. International Journal of Numerical Modelling: Electronic Networks, Devices and Fields, 2013, 26, 101-101.	1.9	0
148	Analysis of microwave noise parameters of scaled AlGaAs/GaAs HEMT's under light exposure. , 2013, , .		0
149	Guest editorial for the special issue on modeling of highâ€frequency silicon transistors. International Journal of Numerical Modelling: Electronic Networks, Devices and Fields, 2014, 27, 703-706.	1.9	0
150	Optical sensitivity of HEMT-based devices and low-noise amplifiers. International Journal of Electronics, 2021, 108, 361-377.	1.4	0
151	Guest editorial for the special issue on modeling of <scp>Î¼mWave</scp> and <scp>mmWave</scp> electronic devices for wireless systems: Connecting technologies to applications. International Journal of Numerical Modelling: Electronic Networks, Devices and Fields, 2021, 34, e2940.	1.9	0
152	Two neural approaches for small-signal modelling of GaAs HEMTs. Journal of Automatic Control, 2010, 20, 39-44.	1.0	0
153	Experimental Investigation on the Bias and Temperature Dependence of the Forward Transmission Coefficient for HEMT Technologies. , 2021, , .		0