David Jimenez

List of Publications by Year
in descending order

104 papers	3,036 citations	201674 27 h-index	175258 52 g-index
105 all docs	105 docs citations	105 times ranked	3115 citing authors

#	Article	IF	Citations
1	Compact Modeling Technology for the Simulation of Integrated Circuits Based on Graphene Fieldâ€Effect Transistors. Advanced Materials, 2022, 34, e2201691.	21.0	19
2	An Extraction Method for Mobility Degradation and Contact Resistance of Graphene Transistors. IEEE Transactions on Electron Devices, 2022, 69, 4037-4041.	3.0	6
3	Schottky-like barrier characterization of field-effect transistors with multiple quasi-ballistic channels. Journal of Applied Physics, 2022, 132, 024501.	2.5	0
4	Sensitivity analysis of a Graphene Field-Effect Transistors by means of Design of Experiments. Mathematics and Computers in Simulation, 2021, 183, 187-197.	4.4	11
5	Multifunctional High-Frequency Circuit Capabilities of Ambipolar Carbon Nanotube FETs. IEEE Nanotechnology Magazine, 2021, 20, 474-480.	2.0	5
6	Compact Modeling of pH-Sensitive FETs Based on 2-D Semiconductors. IEEE Transactions on Electron Devices, 2021, 68, 5916-5919.	3.0	7
7	A contact resistance extraction method of 2D-FET technologies without test structures. , 2021, , .		1
8	Analysis of traps-related effects hindering GFETs performance. , 2021, , .		0
9	Unveiling the impact of the bias-dependent charge neutrality point on graphene based multi-transistor applications. Nano Express, 2021, 2, 036001.	2.4	4
10	Input-Referred Low-Frequency Noise Analysis for Single-Layer Graphene FETs. IEEE Transactions on Electron Devices, 2021, 68, 4762-4765.	3.0	0
11	A Small-Signal Description of Black-Phosphorus Transistor Technologies for High-Frequency Applications. IEEE Microwave and Wireless Components Letters, 2021, 31, 1055-1058.	3.2	1
12	A Small-Signal GFET Equivalent Circuit Considering an Explicit Contribution of Contact Resistances. IEEE Microwave and Wireless Components Letters, 2021, 31, 29-32.	3.2	12
13	Bias-Dependent Intrinsic RF Thermal Noise Modeling and Characterization of Single-Layer Graphene FETs. IEEE Transactions on Microwave Theory and Techniques, 2021, 69, 4639-4646.	4.6	3
14	The gate tunable 2D <i>pn</i> junction driven out-of-equilibrium. Journal of Applied Physics, 2021, 130, .	2.5	1
15	BPFET-based RF electronics: state-of-the-art, small-signal modeling and amplifier design. , 2021, , .		0
16	Contact resistance extraction of graphene FET technologies based on individual device characterization. Solid-State Electronics, 2020, 172, 107882.	1.4	11
17	Does carrier velocity saturation help to enhance <i>f</i>_{max} in graphene field-effect transistors?. Nanoscale Advances, 2020, 2, 4179-4186.	4.6	4
18	Experimental Observation and Modeling of the Impact of Traps on Static and Analog/HF Performance of Graphene Transistors. IEEE Transactions on Electron Devices, 2020, 67, 5790-5796.	3.0	14

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19	Bias dependent variability of low-frequency noise in single-layer graphene FETs. Nanoscale Advances, 2020, 2, 5450-5460.	4.6	3
20	Non-Quasi-Static Effects in Graphene Field-Effect Transistors Under High-Frequency Operation. IEEE Transactions on Electron Devices, 2020, 67, 2188-2196.	3.0	7
21	2D pn junctions driven out-of-equilibrium. Nanoscale Advances, 2020, 2, 3252-3262.	4.6	6
22	Small-signal parameters extraction and noise analysis of CNTFETs. Semiconductor Science and Technology, 2020, 35, 045024.	2.0	6
23	Improved metal-graphene contacts for low-noise, high-density microtransistor arrays for neural sensing. Carbon, 2020, 161, 647-655.	10.3	19
24	Low-Frequency Noise Parameter Extraction Method for Single-Layer Graphene FETs. IEEE Transactions on Electron Devices, 2020, 67, 2093-2099.	3.0	10
25	Contact resistance assessment and high-frequency performance projection of black phosphorus field-effect transistor technologies. Semiconductor Science and Technology, 2020, 35, 125016.	2.0	3
26	Large-Signal Model of the Metalâ€“Insulatorâ€“Graphene Diode Targeting RF Applications. IEEE Electron Device Letters, 2019, 40, 1005-1008.	3.9	6
27	GFET Asymmetric Transfer Response Analysis through Access Region Resistances. Nanomaterials, 2019, 9, 1027.	4.1	9
28	Device-to-circuit modeling approach to Metal â€“ Insulator â€“ 2D material FETs targeting the design of linear RF applications. , 2019, , .		1
29	Electrostatics of metalâ€“graphene interfaces: sharp pâ€“n junctions for electron-optical applications. Nanoscale, 2019, 11, 10273-10281.	5.6	15
30	Erratum to â€œLarge-Signal Model of Graphene Field-Effect Transistorsâ€”Part I: Compact Modeling of GFET Intrinsic Capacitancesâ€•[Jul 16 2936-2941]. IEEE Transactions on Electron Devices, 2019, 66, 2459-2459.	3.0	4
31	Efficient contact resistance extraction from individual device characteristics of graphene FETs. , 2019, , .		2
32	Large-signal model of 2DFETs: compact modeling of terminal charges and intrinsic capacitances. Npj 2D Materials and Applications, 2019, 3, .	7.9	15
33	Velocity Saturation Effect on Low Frequency Noise in Short Channel Single Layer Graphene Field Effect Transistors. ACS Applied Electronic Materials, 2019, 1, 2626-2636.	4.3	16
34	Radio Frequency Performance Projection and Stability Tradeoff of h-BN Encapsulated Graphene Field-Effect Transistors. IEEE Transactions on Electron Devices, 2019, 66, 1567-1573.	3.0	12
35	Electrostatics of two-dimensional lateral junctions. Nanotechnology, 2018, 29, 275203.	2.6	19
36	Understanding the bias dependence of low frequency noise in single layer graphene FETs. Nanoscale, 2018, 10, 14947-14956.	5.6	23

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37	Photoresponse of Graphene-Gated Graphene-GaSe Heterojunction Devices. ACS Applied Nano Materials, 2018, 1, 3895-3902.	5.0	23
38	Scaling of graphene field-effect transistors supported on hexagonal boron nitride: radio-frequency stability as a limiting factor. Nanotechnology, 2017, 28, 485203.	2.6	15
39	Small-Signal Model for 2D-Material Based FETs Targeting Radio-Frequency Applications: The Importance of Considering Nonreciprocal Capacitances. IEEE Transactions on Electron Devices, 2017, 64, 4715-4723.	3.0	24
40	Tunable Grapheneâ€“GaSe Dual Heterojunction Device. Advanced Materials, 2016, 28, 1845-1852.	21.0	90
41	The Role of the Fermi Level Pinning in Gate Tunable Graphene-Semiconductor Junctions. IEEE Transactions on Electron Devices, 2016, 63, 4521-4526.	3.0	8
42	Short channel effects in graphene-based field effect transistors targeting radio-frequency applications. 2D Materials, 2016, 3, 025036.	4.4	30
43	Large-Signal Model of Graphene Field- Effect Transistorsâ€"Part II: Circuit Performance Benchmarking. IEEE Transactions on Electron Devices, 2016, 63, 2942-2947.	3.0	24
44	Large-Signal Model of Graphene Field-Effect Transistorsâ€"Part I: Compact Modeling of GFET Intrinsic Capacitances. IEEE Transactions on Electron Devices, 2016, 63, 2936-2941.	3.0	35
45	Large-signal model of the bilayer graphene field-effect transistor targeting radio-frequency applications: Theory versus experiment. Journal of Applied Physics, 2015, 118, .	2.5	3
46	A physics-based model of gate-tunable metalâ€“graphene contact resistance benchmarked against experimental data. 2D Materials, 2015, 2, 025006.	4.4	30
47	Understanding the electrical response and sensing mechanism of carbon-nanotube-based gas sensors. Carbon, 2015, 87, 330-337.	10.3	46
48	Negative capacitance detected. Nature Materials, 2015, 14, 137-139.	27.5	93
49	Impact of graphene polycrystallinity on the performance of graphene field-effect transistors. Applied Physics Letters, 2014, 104, 043509.	3.3	7
50	An Accurate and Verilog-A Compatible Compact Model for Graphene Field-Effect Transistors. IEEE Nanotechnology Magazine, 2014, 13, 895-904.	2.0	66
51	Physical model of the contact resistivity of metal-graphene junctions. Journal of Applied Physics, 2014, 115, .	2.5	51
52	Compact analytical models for the SET and RESET switching statistics of RRAM inspired in the cell-based percolation model of gate dielectric breakdown. , 2013, , .		5
53	Field-effect control of breakdown paths in HfO2 based MIM structures. Microelectronics Reliability, 2013, 53, 1346-1350.	1.7	1
54	Nonhomogeneous spatial distribution of filamentary leakage current paths in circular area Pt/HfO2/Pt capacitors. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2013, 31, 01A107.	1.2	9

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55	Threshold Switching and Conductance Quantization in Al/HfO₂/Si(p) Structures. Japanese Journal of Applied Physics, 2013, 52, 04CD06.	1.5	14
56	Quantum-size effects in hafnium-oxide resistive switching. Applied Physics Letters, 2013, 102, 183505.	3.3	151
57	Multilevel recording in Bi-deficient Pt/BFO/SRO heterostructures based on ferroelectric resistive switching targeting high-density information storage in nonvolatile memories. Applied Physics Letters, 2013, 103, .	3.3	20
58	The Quantum Point-Contact Memristor. IEEE Electron Device Letters, 2012, 33, 1474-1476.	3.9	46
59	Interplay between Intrinsic and Contact Phenomena in Carbon Nanotube Devices: From Exponential Magnetoresistance to Chemical Sensing. Fullerenes Nanotubes and Carbon Nanostructures, 2012, 20, 405-410.	2.1	0
60	Accurate Calculation of Gate Tunneling Current in Double-Gate and Single-Gate SOI MOSFETs Through Gate Dielectric Stacks. IEEE Transactions on Electron Devices, 2012, 59, 2589-2596.	3.0	9
61	Theory of graphene-field effect transistors. , 2012, , .		4
62	Drift-diffusion model for single layer transition metal dichalcogenide field-effect transistors. Applied Physics Letters, 2012, 101, .	3.3	84
63	Explicit model for direct tunneling current in double-gate MOSFETs through a dielectric stack. Solid-State Electronics, 2012, 76, 19-24.	1.4	2
64	Modeling the breakdown statistics of Al2O3/HfO2 nanolaminates grown by atomic-layer-deposition. Solid-State Electronics, 2012, 71, 48-52.	1.4	15
65	Explicit model for the gate tunneling current in double-gate MOSFETs. Solid-State Electronics, 2012, 68, 93-97.	1.4	9
66	From dielectric failure to memory function: Learning from oxide breakdown for improved understanding of resistive switching memories. , 2011, , .		4
67	Current-voltage characteristics of graphene based devices. , 2011, , .		0
68	Explicit Drain-Current Model of Graphene Field-Effect Transistors Targeting Analog and Radio-Frequency Applications. IEEE Transactions on Electron Devices, 2011, 58, 4049-4052.	3.0	97
69	Explicit Drain Current, Charge and Capacitance Model of Graphene Field-Effect Transistors. IEEE Transactions on Electron Devices, 2011, 58, 4377-4383.	3.0	55
70	Initial leakage current related to extrinsic breakdown in HfO2/Al2O3 nanolaminate ALD dielectrics. Microelectronic Engineering, 2011, 88, 1380-1383.	2.4	17
71	Progressive breakdown dynamics and entropy production in ultrathin SiO2 gate oxides. Applied Physics Letters, 2011, 98, .	3.3	3
72	Analytic Model for the Surface Potential and Drain Current in Negative Capacitance Field-Effect Transistors. IEEE Transactions on Electron Devices, 2010, 57, 2405-2409.	3.0	128

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73	Accurate prediction of the volume inversion impact on undoped Double Gate MOSFET capacitances. International Journal of Numerical Modelling: Electronic Networks, Devices and Fields, 2010, 23, 447-457.	1.9	8
74	Explicit quantum potential and charge model for double-gate MOSFETs. Solid-State Electronics, 2010, 54, 530-535.	1.4	7
75	Multidomain ferroelectricity as a limiting factor for voltage amplification in ferroelectric field-effect transistors. Applied Physics Letters, 2010, 97, .	3.3	111
76	Metal-Ferroelectric-Meta-Oxide-semiconductor field effect transistor with sub-60mV/decade subthreshold swing and internal voltage amplification. , 2010, , .		97
77	Tuning the band gap of semiconducting carbon nanotube by an axial magnetic field. Applied Physics Letters, 2010, 96, 132101.	3.3	17
78	Intrinsic noise in aggressively scaled field-effect transistors. Journal of Statistical Mechanics: Theory and Experiment, 2009, 2009, P01044.	2.3	7
79	Exploring the magnetically induced field effect in carbon nanotube-based devices. Physica E: Low-Dimensional Systems and Nanostructures, 2008, 40, 1010-1013.	2.7	5
80	Compact charge and capacitance modeling of undoped ultra-thin body (UTB) SOI MOSFETs. Solid-State Electronics, 2008, 52, 1867-1871.	1.4	19
81	Characterization at the nanometer scale of local electron beam irradiation of CNT based devices. Microelectronic Engineering, 2008, 85, 1413-1416.	2.4	9
82	The environment of graphene probed by electrostatic force microscopy. Applied Physics Letters, 2008, 92, .	3.3	156
83	A currentâ€“voltage model for Schottky-barrier graphene-based transistors. Nanotechnology, 2008, 19, 345204.	2.6	44
84	Charge-Based Compact Modeling of Multiple-Gate MOSFET. , 2007, , .		2
85	New Explicit Charge and Capacitance Models for Undoped Surrounding Gate MOSFETs. , 2007, , .		0
86	Magnetically Induced Field Effect in Carbon Nanotube Devices. Nano Letters, 2007, 7, 960-964.	9.1	62
87	Probing nanotube-based ambipolar FET by magnetic field. AIP Conference Proceedings, 2007, , .	0.4	0
88	Compact model for highly-doped double-gate SOI MOSFETs targeting baseband analog applications. Solid-State Electronics, 2007, 51, 655-661.	1.4	54
89	Analytical Charge and Capacitance Models of Undoped Cylindrical Surrounding-Gate MOSFETs. IEEE Transactions on Electron Devices, 2007, 54, 162-165.	3.0	46
90	Explicit Analytical Charge and Capacitance Models of Undoped Double-Gate MOSFETs. IEEE Transactions on Electron Devices, 2007, 54, 1718-1724.	3.0	70

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91	A drain current model for Schottky-barrier CNT-FETs. Journal of Computational Electronics, 2007, 5, 361-364.	2.5	6
92	Two-dimensional analytical threshold voltage roll-off and subthreshold swing models for undoped cylindrical gate all around MOSFET. Solid-State Electronics, 2006, 50, 805-812.	1.4	27
93	Comment on â€œNew Currentâ€"Voltage Model for Surrounding-Gate Metal Oxide Semiconductor Field-Effect Transistorsâ€ Japanese Journal of Applied Physics, 2006, 45, 6057-6057.	1.5	1
94	A numerical study of scaling issues for trench power MOSFETs. Solid-State Electronics, 2005, 49, 965-975.	1.4	7
95	Explicit Continuous Model for Long-Channel Undoped Surrounding Gate MOSFETs. IEEE Transactions on Electron Devices, 2005, 52, 1868-1873.	3.0	198
96	A simple model of the nanoscale double gate MOSFET based on the flux method. Physica Status Solidi C: Current Topics in Solid State Physics, 2005, 2, 3086-3089.	0.8	4
97	Analog performance of the nanoscale double-gate metal-oxide-semiconductor field-effect-transistor near the ultimate scaling limits. Journal of Applied Physics, 2004, 96, 5271-5276.	2.5	35
98	Modeling of Nanoscale Gate-All-Around MOSFETs. IEEE Electron Device Letters, 2004, 25, 314-316.	3.9	136
99	Continuous Analytic Iâ€"V Model for Surrounding-Gate MOSFETs. IEEE Electron Device Letters, 2004, 25, 571-573.	3.9	254
100	Statistics of soft and hard breakdown in thin SiO2 gate oxides. Microelectronics Reliability, 2003, 43, 1185-1192.	1.7	15
101	Unified compact model for the ballistic quantum wire and quantum well metal-oxide-semiconductor field-effect-transistor. Journal of Applied Physics, 2003, 94, 1061-1068.	2.5	77
102	Light propagation studies on laser modified waveguides using scanning near-field optical microscopy. IEEE Photonics Technology Letters, 2001, 13, 809-811.	2.5	1
103	Design and analysis of silicon antiresonant reflecting optical waveguides for evanescent field sensor. Journal of Lightwave Technology, 2000, 18, 966-972.	4.6	62
104	Improved boundary conditions for the beam propagation method. IEEE Photonics Technology Letters, 1999, 11, 1000-1002.	2.5	5