Gianluca Fiori

List of Publications by Year
in descending order

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128	7,390	101384	54797
papers	citations	36 h-index	84 g-index

130	130	130	10309
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Electronics based on two-dimensional materials. Nature Nanotechnology, 2014, 9, 768-779.	15.6	2,505
2	Water-based and biocompatible 2D crystal inks for all-inkjet-printed heterostructures. Nature Nanotechnology, 2017, 12, 343-350.	15.6	440
3	Ab-initio simulations of deformation potentials and electron mobility in chemically modified graphene and two-dimensional hexagonal boron-nitride. Applied Physics Letters, 2011, 99, .	1.5	360
4	Quantum engineering of transistors based on 2D materials heterostructures. Nature Nanotechnology, 2018, 13, 183-191.	15.6	319
5	Simulation of Graphene Nanoribbon Field-Effect Transistors. IEEE Electron Device Letters, 2007, 28, 760-762.	2.2	295
6	Performance of arsenene and antimonene double-gate MOSFETs from first principles. Nature Communications, 2016, 7, 12585.	5.8	278
7	Performance Comparison of Graphene Nanoribbon FETs With Schottky Contacts and Doped Reservoirs. IEEE Transactions on Electron Devices, 2008, 55, 2314-2323.	1.6	138
8	Ultralow-Voltage Bilayer Graphene Tunnel FET. IEEE Electron Device Letters, 2009, 30, 1096-1098.	2.2	138
9	Multiscale Modeling for Graphene-Based Nanoscale Transistors. Proceedings of the IEEE, 2013, 101, 1653-1669.	16.4	138
10	Lateral Grapheneâ€“hBCN Heterostructures as a Platform for Fully Two-Dimensional Transistors. ACS Nano, 2012, 6, 2642-2648.	7.3	132
11	Low-voltage 2D materials-based printed field-effect transistors for integrated digital and analog electronics on paper. Nature Communications, 2020, 11, 3566.	5.8	120
12	Electrical properties of graphene-metal contacts. Scientific Reports, 2017, 7, 5109.	1.6	119
13	Current Saturation and Voltage Gain in Bilayer Graphene Field Effect Transistors. Nano Letters, 2012, 12, 1324-1328.	4.5	111
14	Inkjet printed 2D-crystal based strain gauges on paper. Carbon, 2018, 129, 462-467.	5.4	101
15	Gate-Tunable Atomically Thin Lateral MoS₂ Schottky Junction Patterned by Electron Beam. Nano Letters, 2016, 16, 3788-3794.	4.5	99
16	All-2D Material Inkjet-Printed Capacitors: Toward Fully Printed Integrated Circuits. ACS Nano, 2019, 13, 54-60.	7.3	95
17	A Three-Dimensional Simulation Study of the Performance of Carbon Nanotube Field-Effect Transistors With Doped Reservoirs and Realistic Geometry. IEEE Transactions on Electron Devices, 2006, 53, 1782-1788.	1.6	84
18	On the Possibility of Tunable-Gap Bilayer Graphene FET. IEEE Electron Device Letters, 2009, 30, 261-264.	2.2	84

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19	Heterojunction Hybrid Devices from Vapor Phase Grown MoS2. Scientific Reports, 2014, 4, 5458.	1.6	80
20	Analogue two-dimensional semiconductor electronics. Nature Electronics, 2020, 3, 486-491.	13.1	74
21	Velocity saturation in few-layer MoS2 transistor. Applied Physics Letters, 2013, 103, .	1.5	64
22	Atomistic Boron-Doped Graphene Field-Effect Transistors: A Route toward Unipolar Characteristics. ACS Nano, 2012, 6, 7942-7947.	7.3	60
23	A Semianalytical Model of Bilayer-Graphene Field-Effect Transistor. IEEE Transactions on Electron Devices, 2009, 56, 2979-2986.	1.6	59
24	An Open-Source Multiscale Framework for the Simulation of Nanoscale Devices. IEEE Transactions on Electron Devices, 2014, 61, 48-53.	1.6	56
25	Effects due to backscattering and pseudogap features in graphene nanoribbons with single vacancies. Physical Review B, 2010, 81, .	1.1	54
26	Very Large Current Modulation in Vertical Heterostructure Graphene/hBN Transistors. IEEE Transactions on Electron Devices, 2013, 60, 268-273.	1.6	52
27	Three-Dimensional Simulation of One-Dimensional Transport in Silicon Nanowire Transistors. IEEE Nanotechnology Magazine, 2007, 6, 524-529.	1.1	51
28	Simulation of hydrogenated graphene field-effect transistors through a multiscale approach. Physical Review B, 2010, 82, .	1.1	50
29	Strong mobility degradation in ideal graphene nanoribbons due to phonon scattering. Applied Physics Letters, 2011, 98, .	1.5	49
30	A SPICE-Compatible Model of MOS-Type Graphene Nano-Ribbon Field-Effect Transistors Enabling Gate- and Circuit-Level Delay and Power Analysis Under Process Variation. IEEE Nanotechnology Magazine, 2015, 14, 1068-1082.	1.1	49
31	Lateral Heterostructure Field-Effect Transistors Based on Two-Dimensional Material Stacks with Varying Thickness and Energy Filtering Source. ACS Nano, 2020, 14, 1982-1989.	7.3	43
32	Ultralow Specific Contact Resistivity in Metalâ€“Graphene Junctions via Contact Engineering. Advanced Materials Interfaces, 2019, 6, 1801285.	1.9	41
33	Atomistic Investigation of Low-Field Mobility in Graphene Nanoribbons. IEEE Transactions on Electron Devices, 2011, 58, 2824-2830.	1.6	39
34	Bilayer Graphene Transistors for Analog Electronics. IEEE Transactions on Electron Devices, 2014, 61, 729-733.	1.6	38
35	Transistor Concepts Based on Lateral Heterostructures of Metallic and Semiconducting Phases of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mi>MoS</mml:mi></mml:mrow><mml:mrow><mml:mn>2</mml:mn></mml:mrow> Physical Review Applied, 2017, 8, .	1.5	38
36	Negative Differential Resistance in Mono and Bilayer Graphene p-n Junctions. IEEE Electron Device Letters, 2011, 32, 1334-1336.	2.2	37

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37	First-Principles Simulations of FETs Based on Two-Dimensional InSe. IEEE Electron Device Letters, 2018, 39, 626-629.	2.2	36
38	Coupled Mode Space Approach for the Simulation of Realistic Carbon Nanotube Field-Effect Transistors. IEEE Nanotechnology Magazine, 2007, 6, 475-480.	1.1	35
39	Modelling and simulation challenges for nanoscale MOSFETs in the ballistic limit. Solid-State Electronics, 2004, 48, 581-587.	0.8	33
40	Dependence of DC characteristics of CNT MOSFETs on bandstructure models. IEEE Nanotechnology Magazine, 2006, 5, 368-372.	1.1	32
41	Two-Dimensional Tunnel Transistors Based on ${m Bi}_{2}{m Se}_{3}$ Thin Film. IEEE Electron Device Letters, 2014, 35, 129-131.	2.2	32
42	Modeling of Electron Devices Based on 2-D Materials. IEEE Transactions on Electron Devices, 2018, 65, 4167-4179.	1.6	32
43	Graphene-based lateral heterostructure transistors exhibit better intrinsic performance than graphene-based vertical transistors as post-CMOS devices. Scientific Reports, 2015, 4, 6607.	1.6	29
44	Comparison of Modeling Approaches for the Capacitanceâ€“Voltage and Currentâ€“Voltage Characteristics of Advanced Gate Stacks. IEEE Transactions on Electron Devices, 2007, 54, 106-114.	1.6	27
45	Perspectives of graphene nanoelectronics: probing technological options with modeling. , 2009, , .		27
46	Vertical transport in graphene-hexagonal boron nitride heterostructure devices. Scientific Reports, 2015, 5, 14519.	1.6	27
47	First principles investigation of tunnel FETs based on nanoribbons from topological two-dimensional materials. Nanoscale, 2017, 9, 19390-19397.	2.8	24
48	Shot Noise Suppression in Quasi-One-Dimensional Field-Effect Transistors. IEEE Transactions on Electron Devices, 2009, 56, 2137-2143.	1.6	23
49	Modeling of ballistic nanoscale metal-oxide-semiconductor field effect transistors. Applied Physics Letters, 2002, 81, 3672-3674.	1.5	20
50	Highâ€Performance 2D pâ€Type Transistors Based on GaSe Layers: An Ab Initio Study. Advanced Electronic Materials, 2017, 3, 1600399.	2.6	20
51	A comparison of advanced transport models for the computation of the drain current in nanoscale nMOSFETs. Solid-State Electronics, 2009, 53, 1293-1302.	0.8	18
52	Geometrical Effects on Valley-Orbital Filling Patterns in Silicon Quantum Dots for Robust Qubit Implementation. Applied Physics Express, 2012, 5, 124001.	1.1	17
53	Comparison of short-channel effects in monolayer MoS2 based junctionless and inversion-mode field-effect transistors. Applied Physics Letters, 2016, 108, 023506.	1.5	17
54	Tunnel-Field-Effect Spin Filter from Two-Dimensional Antiferromagnetic Stanene. Physical Review Applied, 2018, 10, .	1.5	17

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55	The effect of quantum confinement and discrete dopants in nanoscale 50 nm n-MOSFETs: a three-dimensional simulation. Nanotechnology, 2002, 13, 294-298.	1.3	16
56	Inkjet-printed low-dimensional materials-based complementary electronic circuits on paper. Npj 2D Materials and Applications, 2021, 5, .	3.9	16
57	Insights on radio frequency bilayer graphene FETs. , 2012, , .		15
58	Simulation of the Performance of Graphene FETs With a Semiclassical Model, Including Band-to-Band Tunneling. IEEE Transactions on Electron Devices, 2014, 61, 1567-1574.	1.6	15
59	Performance Analysis of Graphene Bilayer Transistors Through Tight-Binding Simulations. , 2009, , .		14
60	Inkjet-printed graphene Hall mobility measurements and low-frequency noise characterization. Nanoscale, 2020, 12, 6708-6716.	2.8	14
61	Code for the 3D Simulation of Nanoscale Semiconductor Devices, Including Drift-Diffusion and Ballistic Transport in 1D and 2D Subbands, and 3D Tunneling. Journal of Computational Electronics, 2005, 4, 63-66.	1.3	13
62	Statistical theory of shot noise in quasi-one-dimensional field-effect transistors in the presence of electron-electron interaction. Physical Review B, 2010, 81, .	1.1	13
63	Drift velocity peak and negative differential mobility in high field transport in graphene nanoribbons explained by numerical simulations. Applied Physics Letters, 2011, 99, .	1.5	13
64	On Transport in Vertical Graphene Heterostructures. IEEE Electron Device Letters, 2014, 35, 966-968.	2.2	13
65	Three-Dimensional Simulation of Realistic Single Electron Transistors. IEEE Nanotechnology Magazine, 2005, 4, 415-421.	1.1	12
66	Dependence of the programming window of silicon-on-insulator nanocrystal memories on channel width. Applied Physics Letters, 2005, 86, 113502.	1.5	11
67	Can graphene outperform indium tin oxide as transparent electrode in organic solar cells?. 2D Materials, 2015, 2, 045006.	2.0	10
68	Insights on the physics and application of off-plane quantum transport through graphene and 2D materials. Solid-State Electronics, 2016, 115, 213-218.	0.8	10
69	Stacking and interlayer electron transport in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi>MoS</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:math> Physical Review B, 2018, 98, .	1.1	10
70	Atomistic quantum transport modeling of metal-graphene nanoribbon heterojunctions. Physical Review B, 2010, 82, .	1.1	9
71	Quantum transport modeling of defected graphene nanoribbons. Physica E: Low-Dimensional Systems and Nanostructures, 2012, 44, 981-984.	1.3	9
72	A SPICE Compact Model for Ambipolar 2-D-Material FETs Aiming at Circuit Design. IEEE Transactions on Electron Devices, 2021, 68, 3096-3103.	1.6	9

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73	Transport properties in partially overlapping van der Waals junctions through a multiscale investigation. Physical Review B, 2021, 104, .	1.1	9
74	Three-Dimensional Simulation of the Dependence of the Programming Window of SOI Nanocrystal Memories on the Channel Width. IEEE Nanotechnology Magazine, 2005, 4, 326-330.	1.1	8
75	Engineering Interband Tunneling in Nanowires With Diamond Cubic or Zincblende Crystalline Structure Based on Atomistic Modeling. IEEE Nanotechnology Magazine, 2013, 12, 839-842.	1.1	8
76	Effect of material parameters on two-dimensional materials based TFETs: An energy-delay perspective. , 2016, , .		8
77	Physical insights on graphene nanoribbon mobility through atomistic simulations. , 2009, , .		7
78	Multi-scale simulation of partially unzipped CNT hetero-junction Tunneling Field Effect Transistor. , 2010, , .		7
79	Electronic Transport in 2Dâ€Based Printed FETs from a Multiscale Perspective. Advanced Electronic Materials, 2022, 8, 2100972.	2.6	7
80	Threshold voltage dispersion and impurity scattering limited mobility in carbon nanotube field effect transistors with randomly doped reservoirs. Solid-State Device Research Conference, 2008 ESSDERC 2008 38th European, 2006, , .	0.0	6
81	Performance Comparison of Graphene Nanoribbon Schottky Barrier and MOS FETs. , 2007, , .		6
82	Shot noise in quasi one-dimensional FETs. , 2008, , .		6
83	Nanodevices in Flatland: Two-dimensional graphene-based transistors with high I<inf>on</inf>/I<inf>off</inf> ratio. , 2011, , .		6
84	Electron-hole transport asymmetry in boron-doped graphene field effect transistors. , 2012, , .		6
85	Experimental and theoretical investigation of quantum point contacts for the validation of models for surface states. Nanotechnology, 2002, 13, 299-303.	1.3	5
86	Three-dimensional atomistic simulation of carbon nanotube FETs with realistic geometry. , 0, , .		5
87	Corrections to â€œa three-dimensional simulation study of the performance of carbon nanotube field-effect transistors with doped reservoirs and realistic geometryâ€•[Aug 06 1782-1788]. IEEE Transactions on Electron Devices, 2008, 55, 1094-1095.	1.6	5
88	Enhanced shot noise in carbon nanotube field-effect transistors. Applied Physics Letters, 2009, 95, 252108.	1.5	5
89	Semi-analytical model for schottky-barrier carbon nanotube and graphene nanoribbon transistors. , 2010, , .		5
90	Doped and textured graphene as electrode for organic solar cells. , 2015, , .		5

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91	Suppressed and enhanced shot noise in one dimensional field-effect transistors. Journal of Computational Electronics, 2015, 14, 94-106.	1.3	5
92	Physical insights into the operation of a 1-nm gate length transistor based on MoS2 with metallic carbon nanotube gate. Applied Physics Letters, 2018, 113, .	1.5	5
93	Physical insights on transistors based on lateral heterostructures of monolayer and multilayer PtSe2 via Ab initio modelling of interfaces. Scientific Reports, 2021, 11, 18482.	1.6	5
94	Analysis of shot-noise suppression in disordered quantum wires. Physica E: Low-Dimensional Systems and Nanostructures, 2003, 19, 107-111.	1.3	4
95	Hierarchical simulation of transport in silicon nanowire transistors. Journal of Computational Electronics, 2008, 7, 415-418.	1.3	4
96	The challenging promise of 2D materials for electronics. , 2015, , .		4
97	On current transients in MoS2 Field Effect Transistors. Scientific Reports, 2017, 7, 11575.	1.6	4
98	1/f Noise Characterization of Bilayer MoS₂ Fieldâ€Effect Transistors on Paper with Inkjetâ€Printed Contacts and hBN Dielectrics. Advanced Electronic Materials, 2021, 7, 2100283.	2.6	4
99	Numerical Analysis of Transport Properties of Boron-Doped Graphene FETs. , 2009, , .		3
100	Full band assessment of phonon-limited mobility in Graphene NanoRibbons. , 2010, , .		3
101	Noise in graphene and carbon nanotube devices. , 2011, , .		3
102	Improvement of the accuracy of noise measurements by the two-amplifier correlation method. Review of Scientific Instruments, 2013, 84, 104702.	0.6	3
103	What can we really expect from 2D materials for electronic applications?. , 2014, , .		3
104	Understanding the nature of metal-graphene contacts: A theoretical and experimental study. , 2015, , .		3
105	Ballistic two-dimensional lateral heterojunction bipolar transistor. Physical Review Research, 2021, 3, .	1.3	3
106	Enhanced shot noise in carbon nanotube FETs due to electron-hole interaction. , 2010, , .		2
107	Shot noise suppression in<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mi>p</mml:mi><mml:mo>â^’</mml:mo><mml:mi>n</mml:mi></mml:mrow></mml:math>junctions due to carrier generation-recombination. Physical Review B, 2011, 83, .	1.1	2
108	Relevance of the physics of off-plane transport through 2D materials on the design of vertical transistors. , 2015, , .		2

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109	Two-dimensional transistors based on MoS<inf>2</inf> lateral heterostructures. , 2016, , .		2
110	Sub-Maxwellian Source Injection and Negative Differential Transconductance in Decorated Graphene Nanoribbons. Physical Review Applied, 2020, 14, .	1.5	2
111	Towards nanotechnology computer aided design: the NANOTCAD project. , 0, , .		1
112	3D simulation of a silicon quantum dot in a magnetic field based on current spin density functional theory. Journal of Computational Electronics, 2007, 6, 191-194.	1.3	1
113	Shot noise suppression in p-n junctions due to carrier recombination. , 2009, , .		1
114	Comparison of advanced transport models for nanoscale nMOSFETs. , 2009, , .		1
115	Two Dimensional Graphene/h-BCN Based Devices with Large Ion/Ioff Ratio for Digital Applications. Advances in Science and Technology, 0, , .	0.2	1
116	Optimization and benchmarking of graphene-based heterostructure FETs. , 2014, , .		1
117	Effect of material parameters on two-dimensional materials based TFETs: An energy-delay perspective. , 2016, , .		1
118	Effects of quantum confinement and discrete dopants in nanoscale bulk-Si nMOSFET. , 0, , .		0
119	Techniques and methods for the simulation of nanoscale ballistic MOSFETs. , 0, , .		0
120	Challenges and solutions for numerical modeling of nanoMOSFETs. , 0, , .		0
121	MESFET cryogenic front-end for cross-correlation noise measurements. AIP Conference Proceedings, 2007, , .	0.3	0
122	Shot noise analysis in quasi one-dimensional Field Effect Transistors. , 2009, , .		0
123	Drain current computation in nanoscale nMOSFETs: Comparison of transport models. , 2010, , .		0
124	Transport and noise properties of graphene-based transistors revealed through atomistic modelling. , 2010, , .		0
125	A multi-scale approach for performance assessment of hydrogenated graphene Field-Effect Transistors. , 2010, , .		0
126	Can we engineer current saturation in narrow gap graphitic FETs without hurting mobility?. , 2013, , .		0

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127	Performance analysis of correlation techniques for noise measurements. , 2015, , .		0
128	Improving the efficiency of organic solar cells with graphene transparent electrode and light management: A simulation study. , 2015, , .		0