

# Giovanni De Micheli

## List of Publications by Year in descending order

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Version: 2024-02-01

160  
papers

3,731  
citations

159358

30  
h-index

189595

50  
g-index

161  
all docs

161  
docs citations

161  
times ranked

3476  
citing authors

#	ARTICLE	IF	CITATIONS
1	Utilizing XMG-Based Synthesis to Preserve Self-Duality for RFET-Based Circuits. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2023, 42, 914-927.	1.9	3
2	A Simulation-Guided Paradigm for Logic Synthesis and Verification. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2022, 41, 2573-2586.	1.9	6
3	Xor-And-Inverter Graphs for Quantum Compilation. Npj Quantum Information, 2022, 8, .	2.8	7
4	A Versatile Mapping Approach for Technology Mapping and Graph Optimization. , 2022, , .		6
5	Efficient Preparation of Cyclic Quantum States. , 2022, , .		0
6	Design and Optimization of Quantum Electronic Circuits. , 2022, , .		0
7	Three-Input Gates for Logic Synthesis. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2021, 40, 2184-2188.	1.9	9
8	A Wearable Electrochemical Sensing System for Non-Invasive Monitoring of Lithium Drug in Bipolar Disorder. IEEE Sensors Journal, 2021, 21, 9649-9656.	2.4	11
9	Continuous monitoring of propofol in human serum with fouling compensation by support vector classifier. Biosensors and Bioelectronics, 2021, 171, 112666.	5.3	12
10	Wearable multifunctional sweat-sensing system for efficient healthcare monitoring. Sensors and Actuators B: Chemical, 2021, 328, 129017.	4.0	48
11	Efficient Boolean Methods for Preparing Uniform Quantum States. IEEE Transactions on Quantum Engineering, 2021, 2, 1-12.	2.9	6
12	Algebraic and Boolean Optimization Methods for AQFP Superconducting Circuits. , 2021, , .		17
13	All-Solid-State Ion-Selective Electrodes: A Tutorial for Correct Practice. IEEE Sensors Journal, 2021, 21, 22143-22154.	2.4	12
14	From Boolean functions to quantum circuits: A scalable quantum compilation flow in C++. , 2021, , .		2
15	Multi-Ion-Sensing Emulator and Multivariate Calibration Optimization by Machine Learning Models. IEEE Access, 2021, 9, 46821-46836.	2.6	4
16	The Emerging Majority: Technology and Design for Superconducting Electronics. IEEE Design and Test, 2021, 38, 79-87.	1.1	4
17	Real-Time Multi-Ion-Monitoring Front-End With Interference Compensation by Multi-Output Support Vector Regressor. IEEE Transactions on Biomedical Circuits and Systems, 2021, 15, 1093-1106.	2.7	1
18	SAT-Based Exact Synthesis: Encodings, Topology Families, and Parallelism. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2020, 39, 871-884.	1.9	23

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19	Advanced Functional Decomposition Using Majority and Its Applications. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2020, 39, 1621-1634.	1.9	12
20	Multichannel Front-End for Electrochemical Sensing of Metabolites, Drugs, and Electrolytes. IEEE Sensors Journal, 2020, 20, 3636-3645.	2.4	11
21	Nonsilicon, Non-von Neumann Computing Part II. Proceedings of the IEEE, 2020, 108, 1211-1218.	16.4	2
22	2019 DAC Roundtable. IEEE Design and Test, 2020, 37, 100-114.	1.1	0
23	Emulator Design and Generation of Synthetic Dataset in Multi-Ion Sensing. , 2020, , .		2
24	Boolean satisfiability in quantum compilation. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2020, 378, 20190161.	1.6	9
25	Exact Synthesis of ESOP Forms. , 2020, , 177-194.		6
26	Extending Boolean Methods for Scalable Logic Synthesis. IEEE Access, 2020, 8, 226828-226844.	2.6	4
27	Automatic Uniform Quantum State Preparation Using Decision Diagrams. , 2020, , .		5
28	LUT-Based Hierarchical Reversible Logic Synthesis. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2019, 38, 1675-1688.	1.9	24
29	Functionality-Enhanced Devices: From Transistors to Circuit-Level Opportunities. , 2019, , 21-42.		1
30	Multi-Target Electrolyte Sensing Front-End for Wearable Physical Monitoring. , 2019, , .		6
31	Scalable Generic Logic Synthesis. , 2019, , .		20
32	Compiling Permutations for Superconducting QPUs. , 2019, , .		9
33	Fast Procedures for the Electrodeposition of Platinum Nanostructures on Miniaturized Electrodes for Improved Ion Sensing. Sensors, 2019, 19, 2260.	2.1	10
34	Evaluating ESOP Optimization Methods in Quantum Compilation Flows. Lecture Notes in Computer Science, 2019, , 191-206.	1.0	10
35	Devices and Circuits Using Novel 2-D Materials: A Perspective for Future VLSI Systems. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2019, 27, 1486-1503.	2.1	30
36	Multi-Panel, On-Single-Chip Memristive Biosensing. IEEE Sensors Journal, 2019, 19, 5769-5774.	2.4	3

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37	Flexible sweat sensors for non-invasive optimization of lithium dose in psychiatric disorders. , 2019, , .		7
38	Reversible Pebbling Game for Quantum Memory Management. , 2019, , .		20
39	Nonsilicon, Non-von Neumann Computingâ€™ Part I [Scanning the Issue]. Proceedings of the IEEE, 2019, 107, 11-18.	16.4	14
40	FPGA-SPICE: A Simulation-Based Architecture Evaluation Framework for FPGAs. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2019, 27, 637-650.	2.1	13
41	Mapping Monotone Boolean Functions into Majority. IEEE Transactions on Computers, 2019, 68, 791-797.	2.4	5
42	Logic Synthesis for Established and Emerging Computing. Proceedings of the IEEE, 2019, 107, 165-184.	16.4	24
43	Conformal Deposition of Conductive Single-Crystalline Cobalt Silicide Layer on Si Wafer via a Molecular Approach. Chemistry of Materials, 2018, 30, 2168-2173.	3.2	2
44	An FPGA-Based Test System for RRAM Technology Characterization. IEEE Nanotechnology Magazine, 2018, 17, 177-183.	1.1	2
45	A Flexible Front-End for Wearable Electrochemical Sensing. , 2018, , .		15
46	SAT-based {CNOT, T} Quantum Circuit Synthesis. Lecture Notes in Computer Science, 2018, , 175-188.	1.0	14
47	Performance of Carbon Nano-Scale Allotropes in Detecting Midazolam and Paracetamol in Undiluted Human Serum. IEEE Sensors Journal, 2018, 18, 5073-5081.	2.4	13
48	Cleaning strategy for carbon-based electrodes: Long-term propofol monitoring in human serum. Sensors and Actuators B: Chemical, 2018, 269, 304-313.	4.0	24
49	Highly-stable Li+ ion-selective electrodes based on noble metal nanostructured layers as solid-contacts. Analytica Chimica Acta, 2018, 1027, 22-32.	2.6	64
50	Doping-Free Complementary Logic Gates Enabled by Two-Dimensional Polarity-Controllable Transistors. ACS Nano, 2018, 12, 7039-7047.	7.3	104
51	An IoT Solution for Online Monitoring of Anesthetics in Human Serum Based on an Integrated Fluidic Bioelectronic System. IEEE Transactions on Biomedical Circuits and Systems, 2018, 12, 1056-1064.	2.7	24
52	Post-P&R Performance and Power Analysis for RRAM-Based FPGAs. IEEE Journal on Emerging and Selected Topics in Circuits and Systems, 2018, 8, 639-650.	2.7	11
53	Practical exact synthesis. , 2018, , .		15
54	Safe and Efficient Deployment of Data-Parallelizable Applications on Many-Core Platforms: Theory and Practice. IEEE Design and Test, 2018, 35, 7-15.	1.1	3

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55	Towards Ultrasound Everywhere: A Portable 3D Digital Back-End Capable of Zone and Compound Imaging. IEEE Transactions on Biomedical Circuits and Systems, 2018, 12, 968-981.	2.7	9
56	Low-Temperature Wet Conformal Nickel Silicide Deposition for Transistor Technology through an Organometallic Approach. ACS Applied Materials & Interfaces, 2017, 9, 4948-4955.	4.0	1
57	Exact Synthesis of Majority-Inverter Graphs and Its Applications. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2017, 36, 1842-1855.	1.9	62
58	Cyber-Medical Systems: Requirements, Components and Design Examples. IEEE Transactions on Circuits and Systems I: Regular Papers, 2017, 64, 2226-2236.	3.5	4
59	Scaling trends and performance evaluation of 2-dimensional polarity-controllable FETs. Scientific Reports, 2017, 7, 45556.	1.6	13
60	Effect of O <sub>2</sub> - migration in Pt/HfO <sub>2</sub> /Ti/Pt structure. Journal of Electroceramics, 2017, 39, 137-142.	0.8	6
61	A Fault-Tolerant Ripple-Carry Adder with Controllable-Polarity Transistors. ACM Journal on Emerging Technologies in Computing Systems, 2017, 13, 1-13.	1.8	3
62	Hierarchical Reversible Logic Synthesis Using LUTs. , 2017, , .		16
63	Efficient Sample Delay Calculation for 2-D and 3-D Ultrasound Imaging. IEEE Transactions on Biomedical Circuits and Systems, 2017, 11, 815-831.	2.7	23
64	Operation regimes and electrical transport of steep slope Schottky Si-FinFETs. Journal of Applied Physics, 2017, 121, .	1.1	5
65	Circuit Designs of High-Performance and Low-Power RRAM-Based Multiplexers Based on 4T(Transistor)1R(RAM) Programming Structure. IEEE Transactions on Circuits and Systems I: Regular Papers, 2017, 64, 1173-1186.	3.5	18
66	Nano-Tera.ch: Information Technology for Health, Environment, and Energy. IEEE Design and Test, 2017, 34, 109-118.	1.1	0
67	Design automation and design space exploration for quantum computers. , 2017, , .		21
68	Polarity control in WSe <sub>2</sub> double-gate transistors. Scientific Reports, 2016, 6, 29448.	1.6	63
69	A Study on the Programming Structures for RRAM-Based FPGA Architectures. IEEE Transactions on Circuits and Systems I: Regular Papers, 2016, 63, 503-516.	3.5	38
70	Fast generation of lexicographic satisfiable assignments. , 2016, , .		8
71	Label-Free Ultrasensitive Memristive Aptasensor. Nano Letters, 2016, 16, 4472-4476.	4.5	87
72	Majority-Inverter Graph: A New Paradigm for Logic Optimization. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2016, 35, 806-819.	1.9	153

#	ARTICLE	IF	CITATIONS
73	Computationally Efficient Multiple-Independent-Gate Device Model. IEEE Nanotechnology Magazine, 2016, 15, 2-14.	1.1	7
74	Enumeration of Reversible Functions and Its Application to Circuit Complexity. Lecture Notes in Computer Science, 2016, , 255-270.	1.0	10
75	A Ultra-Low-Power FPGA Based on Monolithically Integrated RRAMs. , 2015, , .		10
76	Fast synthesis of platinum nanopetals and nanospheres for highly-sensitive non-enzymatic detection of glucose and selective sensing of ions. Scientific Reports, 2015, 5, 15277.	1.6	60
77	Fault Modeling in Controllable Polarity Silicon Nanowire Circuits. , 2015, , .		9
78	Electrochemical nanostructured biosensors: carbon nanotubes versus conductive and semi-conductive nanoparticles. Chemical Papers, 2015, 69, .	1.0	15
79	Cost-Effective Design of Mesh-of-Tree Interconnect for Multicore Clusters With 3-D Stacked L2 Scratchpad Memory. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2015, 23, 1828-1841.	2.1	4
80	A neural approach to drugs monitoring for personalized medicine. , 2015, , .		1
81	Full system for translational studies of personalized medicine with free-moving mice. , 2015, , .		3
82	A fast pruning technique for low-power inexact Circuit design. , 2015, , .		5
83	Accurate power analysis for near- $V_{t}$ RRAM-based FPGA. , 2015, , .		3
84	New Logic Synthesis as Nanotechnology Enabler. Proceedings of the IEEE, 2015, 103, 2168-2195.	16.4	53
85	Wireless monitoring in intensive care units by a 3D-printed system with embedded electronic. , 2015, , .		8
86	Layout Technique for Double-Gate Silicon Nanowire FETs With an Efficient Sea-of-Tiles Architecture. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2015, 23, 2103-2115.	2.1	10
87	A System for Wireless Power Transfer and Data Communication of Long-Term Bio-Monitoring. IEEE Sensors Journal, 2015, 15, 6559-6569.	2.4	24
88	Multiple Independent Gate FETs: How many gates do we need?. , 2015, , .		7
89	Exploiting the Expressive Power of Graphene Reconfigurable Gates via Post-Synthesis Optimization. , 2015, , .		5
90	From Defect Analysis to Gate-Level Fault Modeling of Controllable-Polarity Silicon Nanowires. IEEE Nanotechnology Magazine, 2015, 14, 1117-1126.	1.1	5

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91	E-health: From sensors to systems. , 2015, , .		1
92	A Survey on Low-Power Techniques with Emerging Technologies. ACM Journal on Emerging Technologies in Computing Systems, 2015, 12, 1-26.	1.8	16
93	A study on buffer distribution for RRAM-based FPGA routing structures. , 2015, , .		2
94	Optimized electrochemical detection of anti-cancer drug by carbon nanotubes or gold nanoparticles. , 2015, , .		8
95	Computational Study on the Electrical Behavior of Silicon Nanowire Memristive Biosensors. IEEE Sensors Journal, 2015, 15, 6208-6217.	2.4	19
96	Reversible Logic Synthesis via Biconditional Binary Decision Diagrams. , 2015, , .		11
97	NEM relay design with biconditional binary decision diagrams. , 2015, , .		0
98	A Subcutaneous Biochip for Remote Monitoring of Human Metabolism: Packaging and Biocompatibility Assessment. IEEE Sensors Journal, 2015, 15, 417-424.	2.4	25
99	A Novel FPGA Architecture Based on Ultrafine Grain Reconfigurable Logic Cells. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2015, 23, 2187-2197.	2.1	27
100	Towards More Efficient Logic Blocks By Exploiting Biconditional Expansion (Abstract Only). , 2015, , .		0
101	A Circuit Synthesis Flow for Controllable-Polarity Transistors. IEEE Nanotechnology Magazine, 2014, 13, 1074-1083.	1.1	8
102	Polarity-Controllable Silicon Nanowire Transistors With Dual Threshold Voltages. IEEE Transactions on Electron Devices, 2014, 61, 3654-3660.	1.6	68
103	Representation of Medical Guidelines with a Computer Interpretable Model. International Journal on Artificial Intelligence Tools, 2014, 23, 1460003.	0.7	6
104	Full Fabrication and Packaging of an Implantable Multi-Panel Device for Monitoring of Metabolites in Small Animals. IEEE Transactions on Biomedical Circuits and Systems, 2014, 8, 636-647.	2.7	34
105	System Level Benchmarking with Yield-Enhanced Standard Cell Library for Carbon Nanotube VLSI Circuits. ACM Journal on Emerging Technologies in Computing Systems, 2014, 10, 1-19.	1.8	8
106	Nanowire systems: technology and design. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2014, 372, 20130102.	1.6	31
107	A high-performance low-power near-Vt RRAM-based FPGA. , 2014, , .		41
108	An Integrated Control and Readout Circuit for Implantable Multi-Target Electrochemical Biosensing. IEEE Transactions on Biomedical Circuits and Systems, 2014, 8, 891-898.	2.7	34

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109	Biconditional Binary Decision Diagrams: A Novel Canonical Logic Representation Form. IEEE Journal on Emerging and Selected Topics in Circuits and Systems, 2014, 4, 487-500.	2.7	14
110	Top-down Fabrication of Gate-All-Around Vertically Stacked Silicon Nanowire FETs With Controllable Polarity. IEEE Nanotechnology Magazine, 2014, 13, 1029-1038.	1.1	88
111	Micro-fabrication of high-thickness spiral inductors for the remote powering of implantable biosensors. Microelectronic Engineering, 2014, 113, 130-135.	1.1	9
112	Memristive Biosensors Under Varying Humidity Conditions. IEEE Transactions on Nanobioscience, 2014, 13, 19-30.	2.2	33
113	Majority Logic Synthesis for Spin Wave Technology. , 2014, , .		9
114	TSPC Flip-Flop circuit design with three-independent-gate silicon nanowire FETs. , 2014, , .		17
115	Unlocking Controllable-Polarity Transistors Opportunities by Exclusive-OR and Majority Logic Synthesis. , 2014, , .		4
116	Majority-Inverter Graph. , 2014, , .		132
117	Configurable Logic Gates Using Polarity-Controlled Silicon Nanowire Gate-All-Around FETs. IEEE Electron Device Letters, 2014, 35, 880-882.	2.2	98
118	High-Performance Multipanel Biosensors Based on a Selective Integration of Nanographite Petals. Nano Letters, 2014, 14, 3180-3184.	4.5	17
119	Efficient voltammetric discrimination of free bilirubin from uric acid and ascorbic acid by a CVD nanographite-based microelectrode. Talanta, 2014, 130, 423-426.	2.9	22
120	Energy/Reliability Trade-Offs in Low-Voltage ReRAM-Based Non-Volatile Flip-Flop Design. IEEE Transactions on Circuits and Systems I: Regular Papers, 2014, 61, 3155-3164.	3.5	60
121	Configurable Circuits Featuring Dual-Threshold-Voltage Design With Three-Independent-Gate Silicon Nanowire FETs. IEEE Transactions on Circuits and Systems I: Regular Papers, 2014, 61, 2851-2861.	3.5	72
122	On the use of inexact, pruned hardware in atmospheric modelling. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2014, 372, 20130276.	1.6	25
123	Memristive sensors for pH measure in dry conditions. Surface Science, 2014, 624, 76-79.	0.8	28
124	Design, development, and validation of an in-situ biosensor array for metabolite monitoring of cell cultures. Biosensors and Bioelectronics, 2014, 61, 251-259.	5.3	29
125	Do Carbon Nanotubes contribute to Electrochemical Biosensing?. Electrochimica Acta, 2014, 128, 102-112.	2.6	43
126	Introduction to the special section on functionality-enhanced devices. IEEE Nanotechnology Magazine, 2014, 13, 1019-1019.	1.1	0



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127	Superior sensing performance of multi-walled carbon nanotube-based electrodes to detect unconjugated bilirubin. <i>Thin Solid Films</i> , 2013, 548, 546-550.	0.8	32
128	Personalized Drug Administrations Using Support Vector Machine. <i>BioNanoScience</i> , 2013, 3, 378-393.	1.5	2
129	An implantable bio-micro-system for drug monitoring. , 2013, , .		10
130	BDS-MAJ. , 2013, , .		28
131	Computing Accurate Performance Bounds for Best Effort Networks-on-Chip. <i>IEEE Transactions on Computers</i> , 2013, 62, 452-467.	2.4	33
132	Design and Architectural Assessment of 3-D Resistive Memory Technologies in FPGAs. <i>IEEE Nanotechnology Magazine</i> , 2013, 12, 40-50.	1.1	39
133	Self-checking ripple-carry adder with Ambipolar Silicon NanoWire FET. , 2013, , .		15
134	Implantable devices: the future of blood monitoring?. <i>Clinical Practice (London, England)</i> , 2013, 10, 385-388.	0.1	4
135	An Enhanced Design Methodology for Resonant Clock Trees. <i>Journal of Low Power Electronics</i> , 2013, 9, 198-206.	0.6	0
136	Multiwalled Carbon Nanotubes for Amperometric Array-Based Biosensors. <i>BioNanoScience</i> , 2012, 2, 185-195.	1.5	3
137	A current-mode potentiostat for multi-target detection tested with different lactate biosensors. , 2012, , .		9
138	New Approaches for Carbon Nanotubes-Based Biosensors and Their Application to Cell Culture Monitoring. <i>IEEE Transactions on Biomedical Circuits and Systems</i> , 2012, 6, 479-485.	2.7	18
139	Fully Integrated Biochip Platforms for Advanced Healthcare. <i>Sensors</i> , 2012, 12, 11013-11060.	2.1	64
140	Simulated Biological Cells for Receptor Counting in Fluorescence Imaging. <i>BioNanoScience</i> , 2012, 2, 94-103.	1.5	15
141	CELONCEL: Effective design technique for 3-D monolithic integration targeting high performance integrated circuits. , 2011, , .		36
142	Polysilicon Nanowire Transistors and Arrays Fabricated With the Multispacer Technique. <i>IEEE Nanotechnology Magazine</i> , 2011, 10, 891-899.	1.1	4
143	Energy Harvesting and Remote Powering for Implantable Biosensors. <i>IEEE Sensors Journal</i> , 2011, 11, 1573-1586.	2.4	137
144	Top-down fabrication of very-high density vertically stacked silicon nanowire arrays with low temperature budget. <i>Microelectronic Engineering</i> , 2011, 88, 3127-3127.	1.1	21

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145	Multi-panel drugs detection in human serum for personalized therapy. Biosensors and Bioelectronics, 2011, 26, 3914-3919.	5.3	86
146	Plenary speaker. , 2011, , .		0
147	Carbon nanotube correlation. , 2010, , .		48
148	What is a 3D Network-on-Chip?. ACM SIGDA Newsletter, 2009, 39, 1-1.	0.0	0
149	Synthesis of networks on chips for 3D systems on chips. , 2009, , .		63
150	An Outlook on Design Technologies for Future Integrated Systems. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2009, 28, 777-790.	1.9	27
151	Temperature control of high-performance multi-core platforms using convex optimization. , 2008, , .		52
152	Bringing NoCs to 65 nm. IEEE Micro, 2007, 27, 75-85.	1.8	47
153	Design Technologies for Networks on Chips. , 2007, , .		1
154	Dynamic simulation of regulatory networks using SQUAD. BMC Bioinformatics, 2007, 8, 462.	1.2	136
155	Mapping and configuration methods for multi-use-case networks on chips. , 2006, , .		49
156	A buffer-sizing algorithm for networks on chip using TDMA and credit-based end-to-end flow control. , 2006, , .		48
157	Analysis and Optimization of MPSoC Reliability. Journal of Low Power Electronics, 2006, 2, 56-69.	0.6	64
158	A survey of Boolean matching techniques for library binding. ACM Transactions on Design Automation of Electronic Systems, 1997, 2, 193-226.	1.9	83
159	Automatic technology mapping for generalized fundamental-mode asynchronous designs. , 1993, , .		37
160	ROS: Resource-constrained Oracle Synthesis for Quantum Computers. Electronic Proceedings in Theoretical Computer Science, EPTCS, 0, 318, 119-130.	0.8	3