Mohamed E Fouda

List of Publications by Year
in descending order

118 papers	2,153 citations	279487 23 h-index	301761 39 g-index
120 all docs	120 docs citations	120 times ranked	1254 citing authors

#	Article	IF	Citations
1	Review of fractional-order electrical characterization of supercapacitors. Journal of Power Sources, 2018, 400, 457-467.	4.0	125
2	A Simple Model of Double-Loop Hysteresis Behavior in Memristive Elements. IEEE Transactions on Circuits and Systems II: Express Briefs, 2013, 60, 487-491.	2.2	100
3	Power and energy analysis of fractional-order electrical energy storage devices. Energy, 2016, 111, 785-792.	4.5	99
4	Optimization of Fractional-Order RLC Filters. Circuits, Systems, and Signal Processing, 2013, 32, 2097-2118.	1.2	96
5	Neural Coding in Spiking Neural Networks: A Comparative Study for Robust Neuromorphic Systems. Frontiers in Neuroscience, 2021, 15, 638474.	1.4	89
6	Charge controlled memristor-less memcapacitor emulator. Electronics Letters, 2012, 48, 1454.	0.5	78
7	Modeling and Analysis of Passive Switching Crossbar Arrays. IEEE Transactions on Circuits and Systems I: Regular Papers, 2018, 65, 270-282.	3.5	55
8	Fractional-order Memristor Response Under DC and Periodic Signals. Circuits, Systems, and Signal Processing, 2015, 34, 961-970.	1.2	51
9	Memristor-CNTFET based ternary logic gates. Microelectronics Journal, 2018, 72, 74-85.	1.1	48
10	Capacitive behavior and stored energy in supercapacitors at power line frequencies. Journal of Power Sources, 2018, 390, 142-147.	4.0	48
11	Memristorâ€based voltageâ€controlled relaxation oscillators. International Journal of Circuit Theory and Applications, 2014, 42, 1092-1102.	1.3	46
12	Generalized Analysis of Symmetric and Asymmetric Memristive Two-Gate Relaxation Oscillators. IEEE Transactions on Circuits and Systems I: Regular Papers, 2013, 60, 2701-2708.	3.5	43
13	Pinched hysteresis with inverse-memristor frequency characteristics in some nonlinear circuit elements. Microelectronics Journal, 2015, 46, 834-838.	1.1	43
14	Realization of fractional-order capacitor based on passive symmetric network. Journal of Advanced Research, 2019, 18, 147-159.	4.4	38
15	Fractional-order multi-phase oscillators design and analysis suitable for higher-order PSK applications. Analog Integrated Circuits and Signal Processing, 2016, 87, 301-312.	0.9	36
16	Electrical Nonlinearity Emulation Technique for Current-Controlled Memristive Devices. IEEE Access, 2017, 5, 5399-5409.	2.6	35
17	Improved memristor-based relaxation oscillator. Microelectronics Journal, 2013, 44, 814-820.	1.1	34
18	Ternary Functions Design Using Memristive Threshold Logic. IEEE Access, 2019, 7, 48371-48381.	2.6	34

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19	A flexible capacitive photoreceptor for the biomimetic retina. Light: Science and Applications, 2022, 11, 3.	7.7	33
20	Supercapacitor discharge under constant resistance, constant current and constant power loads. Journal of Power Sources, 2019, 435, 226829.	4.0	31
21	Mask Technique for Fast and Efficient Training of Binary Resistive Crossbar Arrays. IEEE Nanotechnology Magazine, 2019, 18, 704-716.	1.1	31
22	A simple MOS realization of current controlled memristor emulator. , 2013, , .		27
23	Nonlinear charge-voltage relationship in constant phase element. AEU - International Journal of Electronics and Communications, 2020, 117, 153104.	1.7	26
24	Learning to Predict IR Drop with Effective Training for ReRAM-based Neural Network Hardware. , 2020, , .		25
25	Memristor-less current- and voltage-controlled meminductor emulators. , 2014, , .		24
26	Revisiting the Time-Domain and Frequency-Domain Definitions of Capacitance. IEEE Transactions on Electron Devices, 2021, 68, 2912-2916.	1.6	24
27	A generalized family of memristor-based voltage controlled relaxation oscillator. International Journal of Circuit Theory and Applications, 2018, 46, 1311-1327.	1.3	23
28	Memristor emulator based on practical current controlled model. , 2015, , .		22
29	Resistive-less memcapacitor-based relaxation oscillator. International Journal of Circuit Theory and Applications, 2015, 43, 959-965.	1.3	21
30	A general emulator for fractional-order memristive elements with multiple pinched points and application. AEU - International Journal of Electronics and Communications, 2020, 124, 153338.	1.7	21
31	IR-QNN Framework: An IR Drop-Aware Offline Training of Quantized Crossbar Arrays. IEEE Access, 2020, 8, 228392-228408.	2.6	21
32	Meminductor Response Under Periodic Current Excitations. Circuits, Systems, and Signal Processing, 2014, 33, 1573-1583.	1.2	20
33	Memristor FPGA IP Core Implementation for Analog and Digital Applications. IEEE Transactions on Circuits and Systems II: Express Briefs, 2019, 66, 1381-1385.	2.2	20
34	Memcapacitor response under step and sinusoidal voltage excitations. Microelectronics Journal, 2014, 45, 1372-1379.	1.1	18
35	On-Chip Error-Triggered Learning of Multi-Layer Memristive Spiking Neural Networks. IEEE Journal on Emerging and Selected Topics in Circuits and Systems, 2020, 10, 522-535.	2.7	18
36	Toward the Optimal Design and FPGA Implementation of Spiking Neural Networks. IEEE Transactions on Neural Networks and Learning Systems, 2022, 33, 3988-4002.	7.2	18

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37	Memristor emulator based on single CCII. , 2015, , .		17
38	Inverse problem of reconstructing the capacitance of electric double-layer capacitors. Electrochimica Acta, 2021, 390, 138848.	2.6	17
39	On the analysis of current-controlled fractional-order memristor emulator. , 2017, , .		16
40	Multiple Pinch-Off Points in Memristive Equations: Analysis and Experiments. IEEE Transactions on Circuits and Systems I: Regular Papers, 2019, 66, 3052-3063.	3.5	16
41	Optimal Charging and Discharging of Supercapacitors. Journal of the Electrochemical Society, 2020, 167, 110521.	1.3	16
42	Fractional-Order Two-Port Networks. Mathematical Problems in Engineering, 2016, 2016, 1-5.	0.6	15
43	Memristor and Inverse Memristor: Modeling, Implementation and Experiments. Studies in Computational Intelligence, 2017, , 371-392.	0.7	15
44	Error-triggered Three-Factor Learning Dynamics for Crossbar Arrays. , 2020, , .		15
45	Communicationâ€"The Ragone Plot of Supercapacitors Under Different Loading Conditions. Journal of the Electrochemical Society, 2020, 167, 020533.	1.3	15
46	A novel memristor emulator based only on an exponential amplifier and CCII+. , 2015, , .		14
47	Independent Component Analysis Using RRAMs. IEEE Nanotechnology Magazine, 2019, 18, 611-615.	1.1	14
48	Simple generic memristor emulator for voltage-controlled models. , 2016, , .		13
49	On numerical approximations of fractional-order spiking neuron models. Communications in Nonlinear Science and Numerical Simulation, 2022, 105, 106078.	1.7	13
50	Overcoming Crossbar Nonidealities in Binary Neural Networks Through Learning. , 2018, , .		12
51	Unsupervised Adaptive Weight Pruning for Energy-Efficient Neuromorphic Systems. Frontiers in Neuroscience, 2020, 14, 598876.	1.4	12
52	Memristor-CNTFET based Ternary Full Adders. , 2020, , .		12
53	Effect of boundary on controlled memristor-based oscillator. , 2012, , .		11
54	A new simple emulator circuit for current controlled memristor. , 2015, , .		11

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55	Experimental Verification of Triple Lobes Generation in Fractional Memristive Circuits. IEEE Access, 2018, 6, 75169-75180.	2.6	11
56	Communicationâ€"Convolution-Based Estimation of Supercapacitor Parameters under Periodic Voltage Excitations. Journal of the Electrochemical Society, 2019, 166, A2267-A2269.	1.3	11
57	Towards Efficient Neuromorphic Hardware: Unsupervised Adaptive Neuron Pruning. Electronics (Switzerland), 2020, 9, 1059.	1.8	11
58	Spiking neural networks for inference and learning: a memristor-based design perspective. , 2020, , 499-530.		11
59	Application of ICA on Self-Interference Cancellation of In-Band Full Duplex Systems. IEEE Wireless Communications Letters, 2020, 9, 924-927.	3.2	11
60	Design and analysis of 2T-2M Ternary content addressable memories. , 2017, , .		10
61	Cost- and Dataset-free Stuck-at Fault Mitigation for ReRAM-based Deep Learning Accelerators. , 2021, , .		10
62	Memristor-based relaxation oscillators using digital gates. , 2012, , .		9
63	Design Exploration of Sensing Techniques in 2T-2R Resistive Ternary CAMs. IEEE Transactions on Circuits and Systems II: Express Briefs, 2021, 68, 762-766.	2.2	9
64	Conditions and Emulation of Double Pinch-off Points in Fractional-order Memristor. , 2018, , .		8
65	Blind Source Separation For Full-Duplex Systems: Potential and Challenges. IEEE Open Journal of the Communications Society, 2021, 2, 1379-1389.	4.4	8
66	On the mathematical modeling of series and parallel memcapacitors. , 2013, , .		7
67	Boundary Dynamics of Memcapacitor in Voltage-Excited Circuits and Relaxation Oscillators. Circuits, Systems, and Signal Processing, 2015, 34, 2765-2783.	1.2	7
68	Reactance-less RM relaxation oscillator using exponential memristor model. , 2016, , .		7
69	N-digits Ternary Carry Lookahead Adder Design. , 2019, , .		7
70	Non-Stationary Polar Codes for Resistive Memories. , 2019, , .		7
71	Digital Emulation of a Versatile Memristor With Speech Encryption Application. IEEE Access, 2019, 7, 174280-174297.	2.6	7
72	Memristor-CNTFET based Ternary Comparator unit. , 2018, , .		6

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73	Study of fractional flux-controlled memristor emulator connections. , 2018, , .		6
74	In-Memory Associative Processors: Tutorial, Potential, and Challenges. IEEE Transactions on Circuits and Systems II: Express Briefs, 2022, 69, 2641-2647.	2.2	6
75	Multi-phase oscillator for higher-order PSK applications. , 2014, , .		5
76	Series and parallel circuit models containing memristors and inverse memristors. , 2015, , .		5
77	Voltage-controlled M-M relaxation oscillator. , 2016, , .		5
78	A Novel Flux-Controlled Memristive Emulator for Analog Applications. Studies in Computational Intelligence, 2017, , 493-511.	0.7	5
79	Effect of Asymmetric Nonlinearity Dynamics in RRAMs on Spiking Neural Network Performance. , 2019, , .		5
80	Optimal charging of fractional-order circuits with Cuckoo search. Journal of Advanced Research, 2021, 32, 119-131.	4.4	5
81	CNTFET design of a multiple-port ternary register file. Microelectronics Journal, 2021, 113, 105076.	1.1	5
82	Pinched hysteresis loops in nonâ€linear resonators. IET Circuits, Devices and Systems, 2021, 15, 88-93.	0.9	5
83	Comparative Study of CNTFET Implementations of 1-trit Multiplier. , 2020, , .		5
84	CNTFET-Based Ternary Multiply-and-Accumulate Unit. Electronics (Switzerland), 2022, 11, 1455.	1.8	5
85	Review of the missing mechanical element: Memdamper. , 2015, , .		4
86	Power Dissipation of Memristor-Based Relaxation Oscillators. Radioengineering, 2015, 24, 968-973.	0.3	4
87	Memcapacitor: Modeling, Analysis, and Emulators. Studies in Systems, Decision and Control, 2015, , 151-185.	0.8	4
88	Memristor Mathematical Models and Emulators. Studies in Systems, Decision and Control, 2015, , 51-84.	0.8	4
89	Process variations-aware resistive associative processor design. , 2016, , .		4
90	A Universal Fractional-Order Memelement Emulation Circuit. , 2019, , .		4

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91	Compact memristorâ€based ultraâ€wide band chirp pulse generator. International Journal of Circuit Theory and Applications, 2020, 48, 286-293.	1.3	4
92	Variability analysis of resistive ternary content addressable memories. International Journal of Circuit Theory and Applications, 2021, 49, 453-475.	1.3	4
93	Fractional-order Memristor Emulator with Multiple Pinched Points. , 2020, , .		4
94	Full-Duplex Self Cancellation Techniques Using Independent Component Analysis. , 2020, , .		4
95	Fast and Low-Cost Mitigation of ReRAM Variability for Deep Learning Applications. , 2021, , .		4
96	On one step row readout technique of selector-less resistive arrays. , 2017, , .		3
97	Memristor Based Programmable Current Reference Generator. , 2018, , .		3
98	Simple MOS Transistor-Based Realization of Fractional-Order Capacitors. , 2019, , .		3
99	Programmable constant phase element realization with crossbar arrays. Journal of Advanced Research, 2021, 29, 137-145.	4.4	3
100	Two-Port Network Analysis of Equal Fractional-order Wireless Power Transfer Circuit. , 2020, , .		3
101	Parameter Identification of Flexible Supercapacitors with Fractional Cuckoo Search. , 2020, , .		3
102	CNTFETâ€based ternary address decoder design. International Journal of Circuit Theory and Applications, 2022, 50, 3682-3691.	1.3	3
103	Commercial supercapacitor parameter estimation from step voltage excitation. International Journal of Circuit Theory and Applications, 2019, 47, 1705-1712.	1.3	2
104	Parameter Identification of Commercial Li-ion Batteries with Marine Predator Algorithm. , 2021, , .		2
105	Memristive Bio-Impedance Modeling of Fruits and Vegetables. IEEE Access, 2021, 9, 21498-21506.	2.6	2
106	Independent Component Analysis with Nonlinearity Mitigation for MIMO Full-Duplex Systems. , 2021, , .		2
107	On the mathematical modeling of memcapacitor bridge synapses. , 2014, , .		1
108	Extracting the Cole-Cole Model Parameters of Tissue-mimicking Materials. , 2018, , .		1

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109	Do the Bio-impedance Models Exhibit Pinched Hysteresis?. , 2020, , .		1
110	Comment on "FPGA realization of fractional order neuron"[Appl. Math. Model. 81 (2020) 372–385]. Applied Mathematical Modelling, 2021, 92, 951-954.	2.2	1
111	Minimal Disturbed Bits in Writing Resistive Crossbar Memories. , 2018, , .		1
112	Memristor-Based Relaxation Oscillator Circuits. Studies in Systems, Decision and Control, 2015, , 85-119.	0.8	0
113	Memcapacitor Based Applications. Studies in Systems, Decision and Control, 2015, , 187-205.	0.8	0
114	Activated Current Sensing Circuit for Resistive Neuromorphic Networks. , 2019, , .		0
115	CAD Tool for Two-Digit Ternary Functions Design. , 2019, , .		0
116	Threshold Switch Modeling for Analog CAM Design. , 2020, , .		0
117	On Series Connections of Fractional-Order Elements and Memristive Elements. , 2020, , .		0
118	Time-domain Li-ion Battery Modeling Under Staircase Charging and Discharging. , 2021, , .		0