Baker S Mohammad

List of Publications by Year in Descending Order

179 papers	1,407 citations	19 h-index	30 g-index
215 ext. papers	1,919 ext. citations	2.6 avg, IF	5.14 L-index

#	Paper	IF	Citations
179	A Low-Cost, Nanowatt, Millimeter-Scale Memristive-Vacuum Sensor. *IEEE Sensors Journal*, **2022**, 1-1	4	
178	MemChar: Portable Low-Power and Low-Cost Characterization Tool for Memristor Devices. *IEEE Transactions on Instrumentation and Measurement*, **2022**, 1-1	5.2	0
177	Temperature dependence of capacitance□oltage characteristics of germanium telluride thin films. *Journal of Materials Research and Technology*, **2022**, 18, 2631-2640	5.5	0
176	Deep Neural Networks Based Weight Approximation and Computation Reuse for 2-D Image Classification. *IEEE Access*, **2022**, 1-1	3.5	
175	An Efficient In-Memory Computing Architecture for Image Enhancement in AI Applications. *IEEE Access*, **2022**, 10, 48229-48241	3.5	1
174	Switched Inductor DC□DC Boost Regulator Using Voltage-to-Time Controller for TEG Applications. *Energies*, **2022**, 15, 3330	3.1	1
173	Tunable Switching Behavior of GO-Based Memristors Using Thermal Reduction. *Nanomaterials*, **2022**, 12, 1812	5.4	1
172	C3PU: Cross-Coupling Capacitor Processing Unit Using Analog-Mixed Signal for AI Inference. *IEEE Access*, **2021**, 9, 167353-167363	3.5	1
171	RRAM-based CAM combined with time-domain circuits for hyperdimensional computing. *Scientific Reports*, **2021**, 11, 19848	4.9	2
170	Effect of the Compliance Current on the Retention Time of Cu/HfO2-Based Memristive Devices. *Journal of Electronic Materials*, **2021**, 50, 4397-4406	1.9	4
169	A 1:4 Active Power Divider for 5G Phased-Array Transmitters in 22nm CMOS FDSOI **2021**,		1
168	SLID: Exploiting Spatial Locality in Input Data as a Computational Reuse Method for Efficient CNN. *IEEE Access*, **2021**, 1-1	3.5	1
167	Single wall carbon nanotube based optical rectenna.. *RSC Advances*, **2021**, 11, 24116-24124	3.7	4
166	Hyper-Dimensional Computing Challenges and Opportunities for AI Applications. *IEEE Access*, **2021**, 1-1	3.5	3
165	DS2B: Dynamic and Secure Substitution Box for Efficient Speech Encryption Engine. *IEEE Access*, **2021**, 9, 93902-93915	3.5	
164	SecureMem: efficient flexible Pt/GO/Cu memristor for true random number generation. *Flexible and Printed Electronics*, **2021**, 6, 035004	3.1	2
163	Impact of vacuum on the resistive switching in HfO2-based conductive-bridge RAM with highly-doped silicon bottom electrode. *Materials Science and Engineering B: Solid-State Materials for Advanced Technology*, **2021**, 271, 115267	3.1	3

162	Effect of Vacuum Annealing on Structural and Electrical Properties of Germanium Telluride Thin Films. *Materials Research Bulletin*, **2021**, 111575	5.1	1
161	Planar analog memimpedance behavior in reduced GO-Based Metal-Semiconductor-Metal. *Materials and Design*, **2021**, 210, 110077	8.1	3
160	GNN-RE: Graph Neural Networks for Reverse Engineering of Gate-Level Netlists. *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems*, **2021**, 1-1	2.5	2
159	. *IEEE Transactions on Information Forensics and Security*, **2021**, 16, 2508-2523	8	8
158	Design Exploration of ReRAM-Based Crossbar for AI Inference. *IEEE Access*, **2021**, 9, 70430-70442	3.5	0
157	Nanojunction Material Effect on the Photoelectric Response of Single-Wall Carbon Nanotube Rectennas.. *ACS Omega*, **2021**, 6, 35692-35698	3.9	2
156	NeuroMem: Analog Graphene-Based Resistive Memory for Artificial Neural Networks. *Scientific Reports*, **2020**, 10, 9473	4.9	19
155	Human Vital Signs Detection Methods and Potential Using Radars: A Review. *Sensors*, **2020**, 20,	3.8	30
154	Computational Power Evaluation for Energy-Constrained Wireless Communications Systems. *IEEE Open Journal of the Communications Society*, **2020**, 1, 308-319	6.7	9
153	RRAM Crossbar-Based In-Memory Computation of Anisotropic Filters for Image Preprocessingloa. *IEEE Access*, **2020**, 8, 127569-127580	3.5	3
152	FPGA-Based Memristor Emulator Circuit for Binary Convolutional Neural Networks. *IEEE Access*, **2020**, 8, 117736-117745	3.5	0
151	Enhanced FPGA realization of the fractional-order derivative and application to a variable-order chaotic system. *Nonlinear Dynamics*, **2020**, 99, 3143-3154	5	9
150	On-chip tunable Memristor-based flash-ADC converter for artificial intelligence applications. *IET Circuits, Devices and Systems*, **2020**, 14, 107-114	1.1	10
149	Micro-Pattern of Graphene Oxide Films Using Metal Bonding. *Micromachines*, **2020**, 11,	3.3	3
148	TEG-Based Power Management Designs and Characterizations. *Analog Circuits and Signal Processing Series*, **2020**, 31-46	0.2	
147	Introduction to TEG-Based Power Management Unit. *Analog Circuits and Signal Processing Series*, **2020**, 15-29	0.2	0
146	A 28-GHz Cascode Inverse Class-D Power Amplifier Utilizing Pulse Injection in 22-nm FDSOI. *IEEE Access*, **2020**, 8, 97353-97360	3.5	1
145	Dual-Outputs Switched Capacitor Voltage Regulator. *Analog Circuits and Signal Processing Series*, **2020**, 47-71	0.2	

144	Introduction to Power Management. *Analog Circuits and Signal Processing Series*, **2020**, 1-13	0.2	
143	Silver/(sub-10 nm)hafnium-oxide-based resistive switching devices on silicon: characteristics and switching mechanism. *Nanotechnology*, **2020**, 31, 165202	3.4	7
142	ASIC Implementation of a Pre-Trained Neural Network for ECG Feature Extraction **2020**,		1
141	Effects of top electrode material in hafnium-oxide-based memristive systems on highly-doped Si. *Scientific Reports*, **2020**, 10, 19541	4.9	6
140	Integrated graphene oxide resistive element in tunable RF filters. *Scientific Reports*, **2020**, 10, 13128	4.9	4
139	Analysis and characterization of leakage reduction methodologies for stacking, body biasing and DLS in 65 nm CMOS technology. *Analog Integrated Circuits and Signal Processing*, **2020**, 102, 1-8	1.2	2
138	Functional Reverse Engineering on SAT-Attack Resilient Logic Locking **2019**,		9
137	A 230 W built-in on-chip auto-calibrating RF amplitude detector in 65 nm CMOS. *Analog Integrated Circuits and Signal Processing*, **2019**, 101, 175-185	1.2	
136	. *IEEE Transactions on Emerging Topics in Computing*, **2019**, 1-1	4.1	7
135	Editorial TVLSI Positioning—Continuing and Accelerating an Upward Trajectory. *IEEE Transactions on Very Large Scale Integration (VLSI) Systems*, **2019**, 27, 253-280	2.6	4
134	ScanSAT **2019**,		16
133	A novel algorithm for the prediction and detection of ventricular arrhythmia. *Analog Integrated Circuits and Signal Processing*, **2019**, 99, 413-426	1.2	2
132	MOMSense: Metal-Oxide-Metal Elementary Glucose Sensor. *Scientific Reports*, **2019**, 9, 5524	4.9	22
131	ReRAM-Based In-Memory Computing for Search Engine and Neural Network Applications. *IEEE Journal on Emerging and Selected Topics in Circuits and Systems*, **2019**, 9, 388-397	5.2	15
130	A Gain-Controlled, Low-Leakage Dickson Charge Pump for Energy-Harvesting Applications. *IEEE Transactions on Very Large Scale Integration (VLSI) Systems*, **2019**, 27, 1114-1123	2.6	16
129	A novel SIFT architecture and ASIC implementation for real time SOC application. *Analog Integrated Circuits and Signal Processing*, **2019**, 99, 325-338	1.2	2
128	Bipolar Cu/HfO/p Si Memristors by Sol-Gel Spin Coating Method and Their Application to Environmental Sensing. *Scientific Reports*, **2019**, 9, 9983	4.9	26
127	Cascaded power management unit characterization for TEG-based IoT devices in 65 nm CMOS. *Microelectronics Journal*, **2019**, 90, 285-296	1.8	4

126	Embedded memory options for ultra-low power IoT devices. *Microelectronics Journal*, **2019**, 93, 104634	1.8	6
125	Ultra-Low Power CAN Detection and VA Prediction. *Analog Circuits and Signal Processing Series*, **2019**, 59-83	0.2	
124	Self-Powered SoC Platform for Wearable Health Care **2019**, 307-325		
123	A Low-Power, High-Resolution ZCS Control for Inductor-Based Converters **2019**, 263-275		
122	High-Density ReRAM Crossbar with Selector Device for Sneak Path Reduction **2019**,		2
121	Digital Emulation of a Versatile Memristor With Speech Encryption Application. *IEEE Access*, **2019**, 7, 174280-174297	3.5	4
120	Reconfigurable, Switched-Capacitor Power Converter for IoT **2019**, 277-290		
119	IoT for Healthcare. *Analog Circuits and Signal Processing Series*, **2019**, 7-12	0.2	4
118	ACLT-Based QRS Detection and ECG Compression Architecture. *Analog Circuits and Signal Processing Series*, **2019**, 39-57	0.2	
117	MSER-in-Chip: An Efficient Vision Tool for IoT Devices **2019**, 245-259		
116	Ultra-Low-Power ECG Processor for IoT SOCs **2019**, 141-152		
115	Introduction to Ultra-Low Power ECG Processor. *Analog Circuits and Signal Processing Series*, **2019**, 1-6	0.2	
114	Background on ECG Processing. *Analog Circuits and Signal Processing Series*, **2019**, 13-26	0.2	1
113	Combined CLT and DWT-Based ECG Feature Extractor. *Analog Circuits and Signal Processing Series*, **2019**, 27-38	0.2	
112	Ultra-Low Power QRS Detection and ECG Compression Architecture for IoT Healthcare Devices. *IEEE Transactions on Circuits and Systems I: Regular Papers*, **2019**, 66, 669-679	3.9	43
111	MemSens: Memristor-Based Radiation Sensor. *IEEE Sensors Journal*, **2018**, 18, 3198-3205	4	28
110	. *IEEE Transactions on Circuits and Systems I: Regular Papers*, **2018**, 65, 2617-2630	3.9	10
109	Stateful Memristor-Based Search Architecture. *IEEE Transactions on Very Large Scale Integration (VLSI) Systems*, **2018**, 26, 2773-2780	2.6	11

108	A Nano-Watt ECG Feature Extraction Engine in 65-nm Technology. *IEEE Transactions on Circuits and Systems II: Express Briefs*, **2018**, 65, 1099-1103	3.5	9
107	Synthesis and Characterization of Wire-Based NbO Memristive Junctions. *Analog Circuits and Signal Processing Series*, **2018**, 65-74	0.2	
106	Memristor Technology: Synthesis and Modeling for Sensing and Security Applications. *Analog Circuits and Signal Processing Series*, **2018**,	0.2	10
105	Synthesis and Characterization of Micro-Thick TiO2 and HfO2 Memristors. *Analog Circuits and Signal Processing Series*, **2018**, 31-51	0.2	1
104	Memristor Device Modeling. *Analog Circuits and Signal Processing Series*, **2018**, 93-104	0.2	1
103	Memristor Device Overview. *Analog Circuits and Signal Processing Series*, **2018**, 1-29	0.2	2
102	Synthesis and Characterization of Nano-Thick HfO2 Memristive Crossbar. *Analog Circuits and Signal Processing Series*, **2018**, 53-64	0.2	1
101	Switching characteristics of microscale unipolar Pd/Hf/HfO 2 /Pd memristors. *Microelectronic Engineering*, **2018**, 185-186, 35-42	2.5	9
100	Novel Electronics for Flexible and Neuromorphic Computing. *Advanced Functional Materials*, **2018**, 28, 1801690	15.6	74
99	A Nanowatt Real-Time Cardiac Autonomic Neuropathy Detector. *IEEE Transactions on Biomedical Circuits and Systems*, **2018**, 12, 739-750	5.1	10
98	A Charge Pump Based Power Management Unit With 66%-Efficiency in 65 nm CMOS **2018**,		7
97	. *IEEE Transactions on Circuits and Systems I: Regular Papers*, **2018**, 65, 4007-4016	3.9	11
96	Memristor-Based Hardware Accelerator for Image Compression. *IEEE Transactions on Very Large Scale Integration (VLSI) Systems*, **2018**, 26, 2749-2758	2.6	16
95	Energy Combiner and Power Manager for Multi-Source Energy Harvesting. *Analog Circuits and Signal Processing Series*, **2018**, 81-89	0.2	
94	Energy Harvesting Sources, Models, and Circuits. *Analog Circuits and Signal Processing Series*, **2018**, 7-35	0.2	1
93	Polarity Mechanism for Thermoelectric Harvester. *Analog Circuits and Signal Processing Series*, **2018**, 61-79	0.2	
92	Zero Crossing Switching Control for L-Based DC□DC Converters. *Analog Circuits and Signal Processing Series*, **2018**, 47-60	0.2	
91	Memristor Device for Security and Radiation Applications. *Analog Circuits and Signal Processing Series*, **2018**, 75-92	0.2	1

90	System Design and Development. *Analog Circuits and Signal Processing Series*, **2018**, 23-38	0.2	
89	Performance and Results. *Analog Circuits and Signal Processing Series*, **2018**, 51-64	0.2	
88	Hardware Design and Implementation. *Analog Circuits and Signal Processing Series*, **2018**, 39-49	0.2	
87	Self-powered SoC Platform for Analysis and Prediction of Cardiac Arrhythmias. *Analog Circuits and Signal Processing Series*, **2018**,	0.2	1
86	An Efficient and Small Area Multioutput Switched Capacitor Buck Converter for IoTs **2018**,		2
85	An Efficient Zero Current Switching Control for L-Based DC□DC Converters in TEG Applications. *IEEE Transactions on Circuits and Systems II: Express Briefs*, **2017**, 64, 294-298	3.5	19
84	. *IEEE Transactions on Circuits and Systems I: Regular Papers*, **2017**, 64, 705-716	3.9	18
83	. *IEEE Transactions on Circuits and Systems I: Regular Papers*, **2017**, 64, 2624-2637	3.9	40
82	Assessment of seven reconstruction methods for contemporary compressive sensing **2017**,		2
81	Low-power content addressable memory (CAM) array for mobile devices. *Microelectronics Journal*, **2017**, 67, 10-18	1.8	7
80	An Efficient Heterogeneous Memristive xnor for In-Memory Computing. *IEEE Transactions on Circuits and Systems I: Regular Papers*, **2017**, 64, 2427-2437	3.9	26
79	Novel hafnium oxide memristor device: Switching behaviour and size effect **2017**,		2
78	Characterization of RF energy harvesting at 2.4 GHz **2017**,		1
77	Low-Power ECG-Based Processor for Predicting Ventricular Arrhythmia. *IEEE Transactions on Very Large Scale Integration (VLSI) Systems*, **2016**, 24, 1962-1974	2.6	68
76	Modeling and Optimization of Memristor and STT-RAM-Based Memory for Low-Power Applications. *IEEE Transactions on Very Large Scale Integration (VLSI) Systems*, **2016**, 24, 1003-1014	2.6	30
75	Subthreshold Continuum Conductance Change in NbO Pt Memristor Interfaces. *Journal of Physical Chemistry C*, **2016**, 120, 18971-18976	3.8	10
74	An Efficient Switched-Capacitor DC-DC Buck Converter for Self-Powered Wearable Electronics. *IEEE Transactions on Circuits and Systems I: Regular Papers*, **2016**, 63, 1557-1566	3.9	38
73	**2016**,		1

72	Modeling Valance Change Memristor Device: Oxide Thickness, Material Type, and Temperature Effects. *IEEE Transactions on Circuits and Systems I: Regular Papers*, **2016**, 63, 2139-2148	3.9	20
71	A biomedical SoC architecture for predicting ventricular arrhythmia **2016**,		1
70	Novel secret key generation techniques using memristor devices. *AIP Advances*, **2016**, 6, 025107	1.5	10
69	State of the art of metal oxide memristor devices. *Nanotechnology Reviews*, **2016**, 5,	6.3	73
68	An AC□DC converter for human body-based vibration energy harvesting. *Microelectronics Journal*, **2016**, 55, 1-7	1.8	7
67	Resistive switching in sol-gel derived microscale memristors **2016**,		5
66	Novel logarithmic ECG feature extraction algorithm based on pan and tompkins **2016**,		3
65	An 83% efficiency, 0.6V to 1V output switched-capacitor DC-DC converter for micro-watt power applications **2016**,		1
64	Novel microscale memristor with uniqueness property for securing communications **2016**,		5
63	Power management unit for multi-source energy harvesting in wearable electronics **2016**,		15
62	Sol-gel/drop-coated micro-thick TiO2 memristors for □ray sensing. *Materials Chemistry and Physics*, **2016**, 184, 72-81	4.4	25
61	An efficient thermal energy harvesting and power management for □Watt wearable BioChips **2016**,		3
60	Combination of PVA with Graphene to Improve the Seebeck Coefficient for Thermoelectric Generator Applications. *Journal of Electronic Materials*, **2015**, 44, 420-424	1.9	15
59	Design Methodologies for Yield Enhancement and Power Efficiency in SRAM-Based SoCs. *IEEE Transactions on Very Large Scale Integration (VLSI) Systems*, **2015**, 23, 2054-2064	2.6	5
58	Memory impact on the lifetime of a Wireless Sensor Node using a Semi-Markov model **2015**,		4
57	A 65-nm low power ECG feature extraction system **2015**,		3
56	Adaptive ECG interval extraction **2015**,		6
55	Characterization of a Graphene-Based Thermoelectric Generator Using a Cost-Effective Fabrication Process. *Energy Procedia*, **2015**, 75, 615-620	2.3	12

54	An all-digital, CMOS zero current switching circuit for thermal energy harvesting **2015**,		4
53	A 28 nm DSP Powered by an On-Chip LDO for High-Performance and Energy-Efficient Mobile Applications. *IEEE Journal of Solid-State Circuits*, **2015**, 50, 81-91	5.5	15
52	Embedded Memory Interface Logic and Interconnect Testing. *IEEE Transactions on Very Large Scale Integration (VLSI) Systems*, **2015**, 23, 1946-1950	2.6	5
51	Evolutionary QR-Based Traffic Sign Recognition System for Next-Generation Intelligent Vehicles **2015**,		2
50	A simple hybrid 3-level buck-boost DC-DC converter with efficient PWM regulation scheme **2015**,		2
49	A maximally stable extremal regions system-on-chip for real-time visual surveillance **2015**,		13
48	Novel fast and scalable parallel union-find ASIC implementation for real-time digital image segmentation **2015**,		6
47	. *IEEE Journal on Emerging and Selected Topics in Circuits and Systems*, **2014**, 4, 354-363	5.2	92
46	65-nm ASIC implementation of QRS detector based on Pan and Tompkins algorithm **2014**,		4
45	Adaptive technique for P and T wave delineation in electrocardiogram signals. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference*, **2014**, 2014, 90-3	0.9	13
44	Modeling and device parameter design to improve reset time in binary-oxide memristors. *Applied Physics A: Materials Science and Processing*, **2014**, 117, 1019-1023	2.6	6
43	Embedded Memory Design for Multi-Core and Systems on Chip. *Analog Circuits and Signal Processing Series*, **2014**,	0.2	8
42	Switched capacitor DC-DC converter for ultra-low power applications **2014**,		5
41	Effect of device, size, activation energy, temperature, and frequency on memristor switching time **2014**,		9
40	LDO regulator versus switched inductor DC-DC converter **2014**,		4
39	Power and Yield for SRAM Memory. *Analog Circuits and Signal Processing Series*, **2014**, 53-59	0.2	
38	Cache Architecture and Main Blocks. *Analog Circuits and Signal Processing Series*, **2014**, 13-28	0.2	
37	Leakage Reduction. *Analog Circuits and Signal Processing Series*, **2014**, 61-68	0.2	

36	SRAM-Based Memory Operation and Yield. *Analog Circuits and Signal Processing Series*, **2014**, 37-52	0.2	
35	Embedded Memory Hierarchy. *Analog Circuits and Signal Processing Series*, **2014**, 29-35	0.2	
34	Embedded Memory Verification. *Analog Circuits and Signal Processing Series*, **2014**, 69-74	0.2	
33	Embedded Memory Design Validation and Design For Test. *Analog Circuits and Signal Processing Series*, **2014**, 75-81	0.2	1
32	Emerging Memory Technology Opportunities and Challenges. *Analog Circuits and Signal Processing Series*, **2014**, 83-89	0.2	1
31	**2013**,		7
30	Robust Hybrid Memristor-CMOS Memory: Modeling and Design. *IEEE Transactions on Very Large Scale Integration (VLSI) Systems*, **2013**, 21, 2069-2079	2.6	49
29	**2013**,		2
28	The optimum Booth radix for low power integer multipliers **2013**,		2
27	Universal fused floating-point dot-product unit (UFDP) **2013**,		1
26	The revolution of glucose monitoring methods and systems: A survey **2013**,		1
25	Memristor for energy efficient wireless sensor node **2013**,		1
24	Memristors for digital, memory and neuromorphic circuits **2013**,		1
23	Embedded memory design using memristor: Retention time versus write energy **2013**,		2
22	A survey of thermal energy harvesting techniques and interface circuitry **2013**,		11
21	Energy efficient and hign bandwidth embedded memory implementation **2013**,		1
20	Efficient power management in wireless sensor networks **2013**,		1
19	Modeling of STT-MTJ for low power embedded memory applications: A comparative review **2013**,		1

18	Automated real-time video surveillance algorithms for SoC implementation: A survey **2013**,		7
17	Automated flow for generating CMOS custom memory bit map between logical and physical implementation **2013**,		1
16	Piezo Electric energy harvester and its interface circuit: Opportunities and challenges **2013**,		3
15	A reduced voltage swing circuit using a single supply to enable lower voltage operation for SRAM-based memory. *Microelectronics Journal*, **2012**, 43, 110-118	1.8	12
14	Write-through method for embedded memory with compression Scan-based testing **2012**,		1
13	Mathematical modeling of a memristor device **2012**,		10
12	Comparative study of current mode and voltage mode sense amplifier used for 28nm SRAM **2012**,		12
11	Memristor: Modeling read and write operations **2011**,		4
10	Hybrid Memristor-CMOS memory cell: Modeling and design **2011**,		3
9	Low leakage power SRAM cell for embedded memory **2011**,		1
8	Dynamic cache resizing architecture for high yield SOC **2009**,		3
7	Semi-custom design flow: Leveraging Place and route tools in Custom Circuit design **2009**,		3
6	**2008**,		4
5	Cache Design for Low Power and High Yield **2008**,		18
4	A 65-nm pulsed latch with a single clocked transistor **2007**,		3
3	Cache Organization for Embeded Processors: CAM-vs-SRAM **2006**,		7
2	A fully bypassed six-issue integer datapath and register file on the Itanium-2 microprocessor. *IEEE Journal of Solid-State Circuits*, **2002**, 37, 1433-1440	5.5	21
1	Bioinspired Soft Multistate Resistive Memory Device Based on Silk Fibroin Gel for Neuromorphic Computing. *Advanced Engineering Materials*,2200314	3.5	3