David Blaauw

List of Publications by Year
in descending order

136 papers	4,789 citations	147801 31 h-index	128289 60 g-index
139 all docs	139 docs citations	139 times ranked	3982 citing authors

#	ARTICLE	IF	CITATIONS
1	Near-Threshold Computing: Reclaiming Moore's Law Through Energy Efficient Integrated Circuits. Proceedings of the IEEE, 2010, 98, 253-266.	21.3	678
2	A Portable 2-Transistor Picowatt Temperature-Compensated Voltage Reference Operating at 0.5 V. IEEE Journal of Solid-State Circuits, 2012, 47, 2534-2545.	5.4	310
3	A Modular 1 mm^{3} Die-Stacked Sensing Platform With Low Power I^{2}C Inter-Die Communication and Multi-Modal Energy Harvesting. IEEE Journal of Solid-State Circuits, 2013, 48, 229-243.	5.4	165
4	A Subthreshold Voltage Reference With Scalable Output Voltage for Low-Power IoT Systems. IEEE Journal of Solid-State Circuits, 2017, 52, 1443-1449.	5.4	156
5	Millimeter-scale nearly perpetual sensor system with stacked battery and solar cells. , 2010, , .		153
6	A Low-Voltage Processor for Sensing Applications With Picowatt Standby Mode. IEEE Journal of Solid-State Circuits, 2009, 44, 1145-1155.	5.4	147
7	True Random Number Generator With a Metastability-Based Quality Control. IEEE Journal of Solid-State Circuits, 2008, 43, 78-85.	5.4	142
8	OuterSPACE: An Outer Product Based Sparse Matrix Multiplication Accelerator. , 2018, , .		142
9	An Ultra-Low Power Fully Integrated Energy Harvester Based on Self-Oscillating Switched-Capacitor Voltage Doubler. IEEE Journal of Solid-State Circuits, 2014, 49, 2800-2811.	5.4	139
10	A highly resilient routing algorithm for fault-tolerant NoCs. , 2009, , .		136
11	A Variation-Tolerant Sub-200 mV 6-T Subthreshold SRAM. IEEE Journal of Solid-State Circuits, 2008, 43, 2338-2348.	5.4	116
12	A 28-nm Compute SRAM With Bit-Serial Logic/Arithmetic Operations for Programmable In-Memory Vector Computing. IEEE Journal of Solid-State Circuits, 2020, 55, 76-86.	5.4	109
13	AlGaAs Photovoltaics for Indoor Energy Harvesting in mm-Scale Wireless Sensor Nodes. IEEE Transactions on Electron Devices, 2015, 62, 2170-2175.	3.0	87
14	8.3 A 553F^2 2-transistor amplifier-based Physically Unclonable Function (PUF) with 1.67% native instability. , 2017, , .		84
15	Yield-Driven Near-Threshold SRAM Design. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2010, 18, 1590-1598.	3.1	79
16	Recryptor: A Reconfigurable Cryptographic Cortex-M0 Processor With In-Memory and Near-Memory Computing for IoT Security. IEEE Journal of Solid-State Circuits, 2018, 53, 995-1005.	5.4	75
17	A low-power band of neuronal spiking activity dominated by local single units improves the performance of brain–machine interfaces. Nature Biomedical Engineering, 2020, 4, 973-983.	22.5	73
18	Swizzle-Switch Networks for Many-Core Systems. IEEE Journal on Emerging and Selected Topics in Circuits and Systems, 2012, 2, 278-294.	3.6	68

#	Article	IF	Citations
19	Subcutaneous Photovoltaic Infrared Energy Harvesting for Bio-implantable Devices. IEEE Transactions on Electron Devices, 2017, 64, 2432-2437.	3.0	65
20	A 4 + 2T SRAM for Searching and In-Memory Computing With 0.3-V V_{DDmin}. IEEE Journal of Solid-State Circuits, 2018, 53, 1006-1015.	5.4	61
21	Low-Power High-Throughput LDPC Decoder Using Non-Refresh Embedded DRAM. IEEE Journal of Solid-State Circuits, 2014, 49, 783-794.	5.4	57
22	SRAM for Error-Tolerant Applications With Dynamic Energy-Quality Management in 28 nm CMOS. IEEE Journal of Solid-State Circuits, 2015, 50, 1310-1323.	5.4	54
23	Hardware Designs for Security in Ultra-Low-Power IoT Systems: An Overview and Survey. IEEE Micro, 2017, 37, 72-89.	1.8	54
24	Energy Harvesting for GaAs Photovoltaics Under Low-Flux Indoor Lighting Conditions. IEEE Transactions on Electron Devices, 2016, 63, 2820-2825.	3.0	49
25	Low-Power Circuit Analysis and Design Based on Heterojunction Tunneling Transistors (HETTs). IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2013, 21, 1632-1643.	3.1	48
26	GenAx: A Genome Sequencing Accelerator. , 2018, , .		48
27	A 5.8 nW CMOS Wake-Up Timer for Ultra-Low-Power Wireless Applications. IEEE Journal of Solid-State Circuits, 2015, 50, 1754-1763.	5.4	47
28	Always-On 12-nW Acoustic Sensing and Object Recognition Microsystem for Unattended Ground Sensor Nodes. IEEE Journal of Solid-State Circuits, 2018, 53, 261-274.	5.4	45
29	A Microelectronic Sensor Device Powered by a Small Implantable Biofuel Cell. ChemPhysChem, 2020, 21, 120-128.	2.1	44
30	CAS-FEST 2010: Mitigating Variability in Near-Threshold Computing. IEEE Journal on Emerging and Selected Topics in Circuits and Systems, 2011, 1, 42-49.	3.6	41
31	A Constant Energy-Per-Cycle Ring Oscillator Over a Wide Frequency Range for Wireless Sensor Nodes. IEEE Journal of Solid-State Circuits, 2016, 51, 697-711.	5.4	41
32	Approximate SRAMs With Dynamic Energy-Quality Management. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2016, 24, 2128-2141.	3.1	37
33	A Resonant Current-Mode Wireless Power Receiver and Battery Charger With âˆ'32 dBm Sensitivity for Implantable Systems. IEEE Journal of Solid-State Circuits, 2016, 51, 2880-2892.	5.4	36
34	An Acoustic Signal Processing Chip With 142-nW Voice Activity Detection Using Mixer-Based Sequential Frequency Scanning and Neural Network Classification. IEEE Journal of Solid-State Circuits, 2019, 54, 3005-3016.	5.4	35
35	A 1-Mb 28-nm 1T1MTJ STT-MRAM With Single-Cap Offset-Cancelled Sense Amplifier and <italic>In Situ</italic> Self-Write-Termination. IEEE Journal of Solid-State Circuits, 2019, 54, 231-239.	5.4	33
36	A Self-Tuning IoT Processor Using Leakage-Ratio Measurement for Energy-Optimal Operation. IEEE Journal of Solid-State Circuits, 2020, 55, 87-97.	5.4	33

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37	21.4 A >78%-efficient light harvester over 100-to-100klux with reconfigurable PV-cell network and MPPT circuit. , 2016, 2016, 370-371.		32
38	A 5.58 nW Crystal Oscillator Using Pulsed Driver for Real-Time Clocks. IEEE Journal of Solid-State Circuits, 2016, 51, 509-522.	5.4	32
39	A 0.3V VDDmin 4+2T SRAM for searching and in-memory computing using 55nm DDC technology. , 2017, , .		32
40	A 23-mW Face Recognition Processor with Mostly-Read 5T Memory in 40-nm CMOS. IEEE Journal of Solid-State Circuits, 2017, 52, 1628-1642.	5.4	31
41	A 23pW, 780ppm/&#x00B0;C resistor-less current reference using subthreshold MOSFETs. , 2014, , .		30
42	SLC: Split-control Level Converter for dense and stable wide-range voltage conversion. , 2012, , .		29
43	26.9 A 0.19Ã—0.17mm² Wireless Neural Recording IC for Motor Prediction with Near-Infrared-Based Power and Data Telemetry. , 2020, 2020, 416-418.		29
44	An Efficient Piezoelectric Energy Harvesting Interface Circuit Using a Sense-and-Set Rectifier. IEEE Journal of Solid-State Circuits, 2019, 54, 3348-3361.	5.4	27
45	5.2 Energy-Efficient Low-Noise CMOS Image Sensor with Capacitor Array-Assisted Charge-Injection SAR ADC for Motion-Triggered Low-Power IoT Applications. , 2019, , .		27
46	A Low Ripple Switched-Capacitor Voltage Regulator Using Flying Capacitance Dithering. IEEE Journal of Solid-State Circuits, 2016, 51, 919-929.	5.4	26
47	A 346 Âµm 2 VCO-Based, Reference-Free, Self-Timed Sensor Interface for Cubic-Millimeter Sensor Nodes in 28 nm CMOS. IEEE Journal of Solid-State Circuits, 2014, 49, 2462-2473.	5.4	25
48	Circuit and System Designs of Ultra-Low Power Sensor Nodes With Illustration in a Miniaturized GNSS Logger for Position Tracking: Part Iâ€"Analog Circuit Techniques. IEEE Transactions on Circuits and Systems I: Regular Papers, 2017, 64, 2237-2249.	5.4	25
49	Energy-Efficient Motion-Triggered IoT CMOS Image Sensor With Capacitor Array-Assisted Charge-Injection SAR ADC. IEEE Journal of Solid-State Circuits, 2019, 54, 2921-2931.	5.4	25
50	Fast Statistical Static Timing Analysis Using Smart Monte Carlo Techniques. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2011, 30, 852-865.	2.7	23
51	Design Methodology for Voltage-Overscaled Ultra-Low-Power Systems. IEEE Transactions on Circuits and Systems II: Express Briefs, 2012, 59, 952-956.	3.0	23
52	Battery Voltage Supervisors for Miniature IoT Systems. IEEE Journal of Solid-State Circuits, 2016, 51, 2743-2756.	5.4	23
53	Bridging the â€œLast Millimeterâ€•Gap of Brain-Machine Interfaces via Near-Infrared Wireless Power Transfer and Data Communications. ACS Photonics, 2021, 8, 1430-1438.	6.6	23
54	Process Variation and Temperature-Aware Full Chip Oxide Breakdown Reliability Analysis. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2011, 30, 1321-1334.	2.7	20

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55	A 5.58nW 32.768kHz DLL-assisted XO for real-time clocks in wireless sensing applications. , 2012, , .		20
56	A 1920 $\times$ 1080 25-Frames/s 2.4-TOPS/W Low-Power 6-D Vision Processor for Unified Optical Flow and Stereo Depth With Semi-Global Matching. IEEE Journal of Solid-State Circuits, 2019, 54, 1048-1058.	5.4	20
57	A 1.85fW/bit ultra low leakage 10T SRAM with speed compensation scheme. , 2011, , .		19
58	A Light-Tolerant Wireless Neural Recording IC for Motor Prediction With Near-Infrared-Based Power and Data Telemetry. IEEE Journal of Solid-State Circuits, 2022, 57, 1061-1074.	5.4	19
59	A statistical approach for full-chip gate-oxide reliability analysis. , 2008, , .		18
60	System-On-Mud: Ultra-Low Power Oceanic Sensing Platform Powered by Small-Scale Benthic Microbial Fuel Cells. IEEE Transactions on Circuits and Systems I: Regular Papers, 2015, , 1-10.	5.4	18
61	Small-Area Si Photovoltaics for Low-Flux Infrared Energy Harvesting. IEEE Transactions on Electron Devices, 2017, 64, 15-20.	3.0	18
62	RRAM-DNN: An RRAM and Model-Compression Empowered All-Weights-On-Chip DNN Accelerator. IEEE Journal of Solid-State Circuits, 2021, 56, 1105-1115.	5.4	18
63	A 1.02nW PMOS-only, trim-free current reference with 282ppm/Â°C from â'40Â°C to 120Â°C and 1.6% within-wafer inaccuracy. , 2017, , .		17
64	Highâ€efficiency photovoltaic modules on a chip for millimeterâ€scale energy harvesting. Progress in Photovoltaics: Research and Applications, 2019, 27, 540-546.	8.1	17
65	Robust ultra-low voltage ROM design. , 2008, , .		16
66	Robust Clock Network Design Methodology for Ultra-Low Voltage Operations. IEEE Journal on Emerging and Selected Topics in Circuits and Systems, 2011, 1, 120-130.	3.6	15
67	Variation-aware static and dynamic writability analysis for voltage-scaled bit-interleaved 8-T SRAMs. , 2011, , .		15
68	Subthreshold voltage reference with nwell/psub diode leakage compensation for low-power high-temperature systems. , 2017, , .		14
69	The Internet of Tiny Things: Recent Advances of Millimeter-Scale Computing. IEEE Design and Test, 2019, 36, 65-72.	1.2	14
70	Transmuter. , 2020, , .		13
71	Infrared Energy Harvesting in Millimeter-Scale GaAs Photovoltaics. IEEE Transactions on Electron Devices, 2017, 64, 4554-4560.	3.0	12
72	A 7.3 M Output Non-Zeros/J, 11.7 M Output Non-Zeros/GB Reconfigurable Sparse Matrixâ€"Matrix Multiplication Accelerator. IEEE Journal of Solid-State Circuits, 2020, 55, 933-944.	5.4	12

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73	Reference Oversampling PLL Achieving â˜'256-dB FoM and â˜'78-dBc Reference Spur. IEEE Journal of Solid-State Circuits, 2021, 56, 2993-3007.	5.4	12
74	A 4.5Tb/s 3.4Tb/s/W 64&#x00D7;64 switch fabric with self-updating least-recently-granted priority and quality-of-service arbitration in 45nm CMOS. , 2012, , .		11
75	MBus. , 2015, 2015, 629-641.		11
76	A Dual-Stage, Ultra-Low-Power Acoustic Event Detection System. , 2016, , .		11
77	A 1.7nW PLL-assisted current injected 32KHz crystal oscillator for IoT. , 2017, , .		11
78	27.2 An Adiabatic Sense and Set Rectifier for Improved Maximum-Power-Point Tracking in Piezoelectric Harvesting with 541% Energy Extraction Gain. , 2019, , .		11
79	Millimeter-Scale Node-to-Node Radio Using a Carrier Frequency-Interlocking IF Receiver for a Fully Integrated $4 \times 4 \times 4$ mm^3 Wireless Sensor Node. IEEE Journal of Solid-State Circuits, 2020, 55, 1128-1138.	5.4	11
80	A 1.6-mm<sup>2</sup> 38-mW 1.5-Gb/s LDPC decoder enabled by refresh-free embedded DRAM. , 2012, , .		10
81	IoT^2 â€" the Internet of Tiny Things: Realizing mm-Scale Sensors through 3D Die Stacking. , 2019, , .		10
82	Using Low Cost Erasure and Error Correction Schemes to Improve Reliability of Commodity DRAM Systems. IEEE Transactions on Computers, 2016, 65, 3766-3779.	3.4	9
83	MBus: A System Integration Bus for the Modular Microscale Computing Class. IEEE Micro, 2016, 36, 60-70.	1.8	9
84	A 40-nm Ultra-Low Leakage Voltage-Stacked SRAM for Intelligent IoT Sensors. IEEE Solid-State Circuits Letters, 2021, 4, 14-17.	2.0	9
85	Circuit and System Design Guidelines for Ultra-low Power Sensor Nodes. IPSJ Transactions on System LSI Design Methodology, 2013, 6, 17-26.	0.8	8
86	Dual-slope capacitance to digital converter integrated in an implantable pressure sensing system. , 2014, , .		8
87	Physical Layer Secret Key Generation Using Joint Interference and Phase Shift Keying Modulation. IEEE Transactions on Microwave Theory and Techniques, 2021, 69, 2673-2685.	4.6	8
88	STEEL: A technique for stress-enhanced standard cell library design. , 2008, , .		7
89	Energy-optimized high performance FFT processor. , 2011, , .		7
90	Low complexity optical flow using neighbor-guided semi-global matching. , 2016, , .		7

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91	A 67-fs$_{rms}$ Jitter, â^'130 dBc/Hz In-Band Phase Noise, â^'256-dB FoM Reference Oversampling Digital PLL With Proportional Path Timing Control. IEEE Solid-State Circuits Letters, 2020, 3, 430-433.	2.0	7
92	An Ultra-Low-Power Image Signal Processor for Hierarchical Image Recognition With Deep Neural Networks. IEEE Journal of Solid-State Circuits, 2021, 56, 1071-1081.	5.4	7
93	A Light Tolerant Neural Recording IC for Near-Infrared-Powered Free Floating Motes. , 2021, 2021, .		7
94	A Noise-Efficient Neural Recording Amplifier Using Discrete-Time Parametric Amplification. IEEE Solid-State Circuits Letters, 2018, 1, 203-206.	2.0	6
95	A Novel Physical Layer Security Technique Using Master-Slave Full Duplex Communication. , 2019, , .		6
96	A Reference Oversampling Digital Phase-Locked Loop with -240 dB FOM and -80 dBc Reference Spur. , 2019, , .		6
97	A 42 nJ/Conversion On-Demand State-of-Charge Indicator for Miniature IoT Li-Ion Batteries. IEEE Journal of Solid-State Circuits, 2019, 54, 524-537.	5.4	6
98	A 0.3-V to 1.8â€"3.3-V Leakage-Biased Synchronous Level Converter for ULP SoCs. IEEE Solid-State Circuits Letters, 2020, 3, 130-133.	2.0	6
99	Dual-Junction GaAs Photovoltaics for Low Irradiance Wireless Power Transfer in Submillimeter-Scale Sensor Nodes. IEEE Journal of Photovoltaics, 2020, 10, 1721-1726.	2.5	6
100	A Power-Efficient Brain-Machine Interface System With a Sub-mw Feature Extraction and Decoding ASIC Demonstrated in Nonhuman Primates. IEEE Transactions on Biomedical Circuits and Systems, 2022, 16, 395-408.	4.0	6
101	A low-power communication scheme for wireless, 1000 channel brainâ€"machine interfaces. Journal of Neural Engineering, 2022, 19, 036037.	3.5	6
102	Standby power reduction techniques for ultra-low power processors. , 2008, , .		5
103	Victim Alignment in Crosstalk-Aware Timing Analysis. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2010, 29, 261-274.	2.7	5
104	Achieving Ultralow Standby Power With an Efficient SCCMOS Bias Generator. IEEE Transactions on Circuits and Systems II: Express Briefs, 2013, 60, 842-846.	3.0	5
105	Low Complexity, Hardware-Efficient Neighbor-Guided SGM Optical Flow for Low-Power Mobile Vision Applications. IEEE Transactions on Circuits and Systems for Video Technology, 2019, 29, 2191-2204.	8.3	5
106	Self-Timed Regenerators for High-Speed and Low-Power On-Chip Global Interconnect. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2008, 16, 673-677.	3.1	4
107	Synchronization of ultra-low power wireless sensor nodes. , 2011, , .		4
108	A 380pW dual mode optical wake-up receiver with ambient noise cancellation. , 2016, 2016, .		4

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109	Millimeter-scale computing platform for next generation of Internet of Things. , 2016, , .		4
110	A 510-pW 32-kHz Crystal Oscillator With High Energy-to-Noise-Ratio Pulse Injection. IEEE Journal of Solid-State Circuits, 2022, 57, 434-451.	5.4	4
111	An Analog-Assisted Digital LDO With Single Subthreshold Output pMOS Achieving 1.44-fs FOM. IEEE Solid-State Circuits Letters, 2021, 4, 154-157.	2.0	4
112	Millimeter-sized smart sensors reveal that a solar refuge protects tree snail Partula hyalina from extirpation. Communications Biology, 2021, 4, 744.	4.4	4
113	Versa: A 36-Core Systolic Multiprocessor With Dynamically Reconfigurable Interconnect and Memory. IEEE Journal of Solid-State Circuits, 2022, 57, 986-998.	5.4	4
114	A Statistical Framework for Post-Fabrication Oxide Breakdown Reliability Prediction and Management. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2013, 32, 630-643.	2.7	3
115	FOCUS: Key building blocks and integration strategy of a miniaturized wireless sensor node. , 2015, , .		3
116	Sample and Average Common-Mode Feedback in a 101 nW Acoustic Amplifier. , 2020, , .		3
117	A High-Throughput Pruning-Based Pair-Hidden-Markov-Model Hardware Accelerator for Next-Generation DNA Sequencing. IEEE Solid-State Circuits Letters, 2021, 4, 31-35.	2.0	3
118	A 128kb high density portless SRAM using hierarchical bitlines and thyristor sense amplifiers. , 2011, , .		2
119	A confidence-driven model for error-resilient computing. , 2011, , .		2
120	A dual-passband filter architecture for dual-band systems. , 2011, , .		2
121	A 42nJ/conversion on-demand state-of-charge indicator for miniature IoT Li-ion batteries. , 2017, , .		2
122	AA-ResNet: Energy Efficient All-Analog ResNet Accelerator. , 2020, , .		2
123	A 192 nW 0.02 Hz High Pass Corner Acoustic Analog Front-End with Automatic Saturation Detection and Recovery. , 2021, , .		2
124	Versa: A Dataflow-Centric Multiprocessor with 36 Systolic ARM Cortex-M4F Cores and a Reconfigurable Crossbar-Memory Hierarchy in 28nm. , 2021, , .		2
125	A Delta Sigma-Modulated Sample and Average Common-Mode Feedback Technique for Capacitively Coupled Amplifiers in a 192-nW Acoustic Analog Front-End. IEEE Journal of Solid-State Circuits, 2022, 57, 1138-1152.	5.4	2
126	Demo: Ultra-constrained sensor platform interfacing. , 2012, , .		1

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127	Circuits for ultra-low power millimeter-scale sensor nodes. , 2012, , .		1
128	Ultra-Low Power 32kHz Crystal Oscillators: Fundamentals and Design Techniques. IEEE Open Journal of the Solid-State Circuits Society, 2021, 1, 79-93.	2.7	1
129	AmuProcessor Layer for mm-Scale Die-Stacked Sensing Platforms Featuring Ultra-Low Power Sleep Mode at 125Â°C. , 2020, , .		1
130	A 43 nW, 32 kHz, Â±4.2 ppm Piecewise Linear Temperature-Compensated Crystal Oscillator With Î"Î£-Modulated Load Capacitance. IEEE Journal of Solid-State Circuits, 2022, 57, 1175-1186.	5.4	1
131	Energy-Optimal Circuit Design. , 2007, , .		0
132	Supply boosting for high-performance processors in flip-chip packages. , 2016, , .		0
133	A start-up boosting circuit with 133Ã— speed gain for 2-transistor voltage reference. , 2017, , .		0
134	A Fully Integrated Counter Flow Energy Reservoir for Peak Power Delivery in Small Form-Factor Sensor Systems. IEEE Journal of Solid-State Circuits, 2017, 52, 3155-3167.	5.4	0
135	Introduction to the Special Issue on the 2020 IEEE International Solid-State Circuits Conference (ISSCC). IEEE Journal of Solid-State Circuits, 2020, 55, 3127-3130.	5.4	0
136	A 2.46M Reads/s Seed-Extension Accelerator for Next-Generation Sequencing Using a String-Independent PE Array. IEEE Journal of Solid-State Circuits, 2021, 56, 824-833.	5.4	0