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	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
2	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
3	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
4	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
5	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
6	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
7	A low-power communication scheme for wireless, 1000 channel brainâ€“machine interfaces. Journal of Neural Engineering, 2022, 19, 036037.	3.5	6
8	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
9	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
10	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
11	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
12	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
13	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
14	A Light Tolerant Neural Recording IC for Near-Infrared-Powered Free Floating Motes. , 2021, 2021, .		7
15	A 192 nW 0.02 Hz High Pass Corner Acoustic Analog Front-End with Automatic Saturation Detection and Recovery. , 2021, , .		2
16	Versa: A Dataflow-Centric Multiprocessor with 36 Systolic ARM Cortex-M4F Cores and a Reconfigurable Crossbar-Memory Hierarchy in 28nm. , 2021, , .		2
17	Millimeter-sized smart sensors reveal that a solar refuge protects tree snail Partula hyalina from extirpation. Communications Biology, 2021, 4, 744.	4.4	4
18	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

#	Article	IF	Citations
19	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
20	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
21	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
22	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
23	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
24	A Microelectronic Sensor Device Powered by a Small Implantable Biofuel Cell. ChemPhysChem, 2020, 21, 120-128.	2.1	44
25	Millimeter-Scale Node-to-Node Radio Using a Carrier Frequency-Interlocking IF Receiver for a Fully Integrated 4$imes$ 4$imes$ 4 mm³ Wireless Sensor Node. IEEE Journal of Solid-State Circuits, 2020, 55, 1128-1138.	5.4	11
26	Sample and Average Common-Mode Feedback in a 101 nW Acoustic Amplifier. , 2020, , .		3
27	A low-power band of neuronal spiking activity dominated by local single units improves the performance of brainâ€“machine interfaces. Nature Biomedical Engineering, 2020, 4, 973-983.	22.5	73
28	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
29	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
30	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
31	AA-ResNet: Energy Efficient All-Analog ResNet Accelerator. , 2020, , .		2
32	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
33	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
34	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
35	Transmuter. , 2020, , .		13
36	AmuProcessor Layer for mm-Scale Die-Stacked Sensing Platforms Featuring Ultra-Low Power Sleep Mode at 125Â°C. , 2020, , .		1

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37	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
38	IoT² â€" the Internet of Tiny Things: Realizing mm-Scale Sensors through 3D Die Stacking. , 2019, , .		10
39	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
40	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
41	A Novel Physical Layer Security Technique Using Master-Slave Full Duplex Communication. , 2019, , .		6
42	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
43	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
44	27.2 An Adiabatic Sense and Set Rectifier for Improved Maximum-Power-Point Tracking in Piezoelectric Harvesting with 541% Energy Extraction Gain. , 2019, , .		11
45	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
46	The Internet of Tiny Things: Recent Advances of Millimeter-Scale Computing. IEEE Design and Test, 2019, 36, 65-72.	1.2	14
47	A 1920 $imes$ 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
48	A Reference Oversampling Digital Phase-Locked Loop with -240 dB FOM and -80 dBc Reference Spur. , 2019, , .		6
49	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
50	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
51	A 4 + 2T SRAM for Searching and In-Memory Computing With 0.3-V $V_{mathrm {DDmin}}$. IEEE Journal of Solid-State Circuits, 2018, 53, 1006-1015.	5.4	61
52	OuterSPACE: An Outer Product Based Sparse Matrix Multiplication Accelerator. , 2018, , .		142
53	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
54	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

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55	A Noise-Efficient Neural Recording Amplifier Using Discrete-Time Parametric Amplification. IEEE Solid-State Circuits Letters, 2018, 1, 203-206.	2.0	6
56	GenAx: A Genome Sequencing Accelerator. , 2018, , .		48
57	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
58	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
59	8.3 A 553F² 2-transistor amplifier-based Physically Unclonable Function (PUF) with 1.67% native instability. , 2017, , .		84
60	Subcutaneous Photovoltaic Infrared Energy Harvesting for Bio-implantable Devices. IEEE Transactions on Electron Devices, 2017, 64, 2432-2437.	3.0	65
61	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
62	A start-up boosting circuit with 133Ã— speed gain for 2-transistor voltage reference. , 2017, , .		0
63	Infrared Energy Harvesting in Millimeter-Scale GaAs Photovoltaics. IEEE Transactions on Electron Devices, 2017, 64, 4554-4560.	3.0	12
64	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
65	A 1.7nW PLL-assisted current injected 32KHz crystal oscillator for IoT. , 2017, , .		11
66	Small-Area Si Photovoltaics for Low-Flux Infrared Energy Harvesting. IEEE Transactions on Electron Devices, 2017, 64, 15-20.	3.0	18
67	Hardware Designs for Security in Ultra-Low-Power IoT Systems: An Overview and Survey. IEEE Micro, 2017, 37, 72-89.	1.8	54
68	A 0.3V VDDmin 4+2T SRAM for searching and in-memory computing using 55nm DDC technology. , 2017, , .		32
69	Subthreshold voltage reference with nwell/psub diode leakage compensation for low-power high-temperature systems. , 2017, , .		14
70	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
71	A 42nJ/conversion on-demand state-of-charge indicator for miniature IoT Li-ion batteries. , 2017, , .		2
72	Low complexity optical flow using neighbor-guided semi-global matching. , 2016, , .		7

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73	A Dual-Stage, Ultra-Low-Power Acoustic Event Detection System. , 2016, , .		11
74	21.4 A >78%-efficient light harvester over 100-to-100klux with reconfigurable PV-cell network and MPPT circuit. , 2016, 2016, 370-371.		32
75	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
76	A Resonant Current-Mode Wireless Power Receiver and Battery Charger With â˜'32 dBm Sensitivity for Implantable Systems. IEEE Journal of Solid-State Circuits, 2016, 51, 2880-2892.	5.4	36
77	Battery Voltage Supervisors for Miniature IoT Systems. IEEE Journal of Solid-State Circuits, 2016, 51, 2743-2756.	5.4	23
78	A 380pW dual mode optical wake-up receiver with ambient noise cancellation. , 2016, 2016, .		4
79	Supply boosting for high-performance processors in flip-chip packages. , 2016, , .		0
80	MBus: A System Integration Bus for the Modular Microscale Computing Class. IEEE Micro, 2016, 36, 60-70.	1.8	9
81	Millimeter-scale computing platform for next generation of Internet of Things. , 2016, , .		4
82	Energy Harvesting for GaAs Photovoltaics Under Low-Flux Indoor Lighting Conditions. IEEE Transactions on Electron Devices, 2016, 63, 2820-2825.	3.0	49
83	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
84	A Low Ripple Switched-Capacitor Voltage Regulator Using Flying Capacitance Dithering. IEEE Journal of Solid-State Circuits, 2016, 51, 919-929.	5.4	26
85	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
86	Approximate SRAMs With Dynamic Energy-Quality Management. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2016, 24, 2128-2141.	3.1	37
87	FOCUS: Key building blocks and integration strategy of a miniaturized wireless sensor node. , 2015, , .		3
88	AlGaAs Photovoltaics for Indoor Energy Harvesting in mm-Scale Wireless Sensor Nodes. IEEE Transactions on Electron Devices, 2015, 62, 2170-2175.	3.0	87
89	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
90	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

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91	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
92	MBus. , 2015, 2015, 629-641.		11
93	Dual-slope capacitance to digital converter integrated in an implantable pressure sensing system. , 2014, , .		8
94	A 23pW, 780ppm/°C resistor-less current reference using subthreshold MOSFETs. , 2014, , .		30
95	Low-Power High-Throughput LDPC Decoder Using Non-Refresh Embedded DRAM. IEEE Journal of Solid-State Circuits, 2014, 49, 783-794.	5.4	57
96	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
97	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
98	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
99	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
100	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
101	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
102	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
103	Demo: Ultra-constrained sensor platform interfacing. , 2012, , .		1
104	SLC: Split-control Level Converter for dense and stable wide-range voltage conversion. , 2012, , .		29
105	A 1.6-mm² 38-mW 1.5-Gb/s LDPC decoder enabled by refresh-free embedded DRAM. , 2012, , .		10
106	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
107	Circuits for ultra-low power millimeter-scale sensor nodes. , 2012, , .		1
108	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

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109	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
110	A 5.58nW 32.768kHz DLL-assisted XO for real-time clocks in wireless sensing applications. , 2012, , .		20
111	A 4.5Tb/s 3.4Tb/s/W 64×64 switch fabric with self-updating least-recently-granted priority and quality-of-service arbitration in 45nm CMOS. , 2012, , .		11
112	A 1.85fW/bit ultra low leakage 10T SRAM with speed compensation scheme. , 2011, , .		19
113	A 128kb high density portless SRAM using hierarchical bitlines and thyristor sense amplifiers. , 2011, , .		2
114	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
115	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
116	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
117	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
118	A confidence-driven model for error-resilient computing. , 2011, , .		2
119	Energy-optimized high performance FFT processor. , 2011, , .		7
120	Synchronization of ultra-low power wireless sensor nodes. , 2011, , .		4
121	Variation-aware static and dynamic writability analysis for voltage-scaled bit-interleaved 8-T SRAMs. , 2011, , .		15
122	A dual-passband filter architecture for dual-band systems. , 2011, , .		2
123	Near-Threshold Computing: Reclaiming Moore's Law Through Energy Efficient Integrated Circuits. Proceedings of the IEEE, 2010, 98, 253-266.	21.3	678
124	Millimeter-scale nearly perpetual sensor system with stacked battery and solar cells. , 2010, , .		153
125	Yield-Driven Near-Threshold SRAM Design. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2010, 18, 1590-1598.	3.1	79
126	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

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127	A highly resilient routing algorithm for fault-tolerant NoCs. , 2009, , .		136
128	A Low-Voltage Processor for Sensing Applications With Picowatt Standby Mode. IEEE Journal of Solid-State Circuits, 2009, 44, 1145-1155.	5.4	147
129	True Random Number Generator With a Metastability-Based Quality Control. IEEE Journal of Solid-State Circuits, 2008, 43, 78-85.	5.4	142
130	A Variation-Tolerant Sub-200 mV 6-T Subthreshold SRAM. IEEE Journal of Solid-State Circuits, 2008, 43, 2338-2348.	5.4	116
131	STEEL: A technique for stress-enhanced standard cell library design. , 2008, , .		7
132	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
133	A statistical approach for full-chip gate-oxide reliability analysis. , 2008, , .		18
134	Standby power reduction techniques for ultra-low power processors. , 2008, , .		5
135	Robust ultra-low voltage ROM design. , 2008, , .		16
136	Energy-Optimal Circuit Design. , 2007, , .		0