David Blaauw

List of Publications by Citations

125 papers	3,180 citations	29 h-index	53 g-index
139 ext. papers	4,090 ext. citations	4.3 avg, IF	5.45 L-index

#	Paper	IF	Citations
125	Near-Threshold Computing: Reclaiming Moore© Law Through Energy Efficient Integrated Circuits. *Proceedings of the IEEE*, **2010**, 98, 253-266	14.3	490
124	. *IEEE Journal of Solid-State Circuits*, **2012**, 47, 2534-2545	5.5	199
123	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	5.5	127
122	True Random Number Generator With a Metastability-Based Quality Control. *IEEE Journal of Solid-State Circuits*, **2008**, 43, 78-85	5.5	119
121	Millimeter-scale nearly perpetual sensor system with stacked battery and solar cells **2010**,		115
120	A Low-Voltage Processor for Sensing Applications With Picowatt Standby Mode. *IEEE Journal of Solid-State Circuits*, **2009**, 44, 1145-1155	5.5	112
119	A highly resilient routing algorithm for fault-tolerant NoCs **2009**,		111
118	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	5.5	100
117	A Subthreshold Voltage Reference With Scalable Output Voltage for Low-Power IoT Systems. *IEEE Journal of Solid-State Circuits*, **2017**, 52, 1443-1449	5.5	94
116	A Variation-Tolerant Sub-200 mV 6-T Subthreshold SRAM. *IEEE Journal of Solid-State Circuits*, **2008**, 43, 2338-2348	5.5	91
115	**2017**,		58
114	Yield-Driven Near-Threshold SRAM Design. *IEEE Transactions on Very Large Scale Integration (VLSI) Systems*, **2010**, 18, 1590-1598	2.6	58
113	AlGaAs Photovoltaics for Indoor Energy Harvesting in mm-Scale Wireless Sensor Nodes. *IEEE Transactions on Electron Devices*, **2015**, 62, 2170-2175	2.9	56
112	OuterSPACE: An Outer Product Based Sparse Matrix Multiplication Accelerator **2018**,		56
111	. *IEEE Journal of Solid-State Circuits*, **2018**, 53, 995-1005	5.5	50
110	Low-Power High-Throughput LDPC Decoder Using Non-Refresh Embedded DRAM. *IEEE Journal of Solid-State Circuits*, **2014**, 49, 783-794	5.5	50
109	Swizzle-Switch Networks for Many-Core Systems. *IEEE Journal on Emerging and Selected Topics in Circuits and Systems*, **2012**, 2, 278-294	5.2	50

108	Subcutaneous Photovoltaic Infrared Energy Harvesting for Bio-Implantable Devices. *IEEE Transactions on Electron Devices*, **2017**, 64, 2432-2437	2.9	46
107	SRAM for Error-Tolerant Applications With Dynamic Energy-Quality Management in 28 nm CMOS. *IEEE Journal of Solid-State Circuits*, **2015**, 50, 1310-1323	5.5	46
106	Energy Harvesting for GaAs Photovoltaics Under Low-Flux Indoor Lighting Conditions. *IEEE Transactions on Electron Devices*, **2016**, 63, 2820-2825	2.9	39
105	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	2.6	39
104	. *IEEE Journal of Solid-State Circuits*, **2018**, 53, 1006-1015	5.5	36
103	Hardware Designs for Security in Ultra-Low-Power IoT Systems: An Overview and Survey. *IEEE Micro* , **2017**, 37, 72-89	1.8	33
102	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	5.5	33
101	A 5.8 nW CMOS Wake-Up Timer for Ultra-Low-Power Wireless Applications. *IEEE Journal of Solid-State Circuits*, **2015**, 50, 1754-1763	5.5	32
100	. *IEEE Journal of Solid-State Circuits*, **2018**, 53, 261-274	5.5	32
99	CAS-FEST 2010: Mitigating Variability in Near-Threshold Computing. *IEEE Journal on Emerging and Selected Topics in Circuits and Systems*, **2011**, 1, 42-49	5.2	31
98	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	5.5	30
97	A Resonant Current-Mode Wireless Power Receiver and Battery Charger With −2 dBm Sensitivity for Implantable Systems. *IEEE Journal of Solid-State Circuits*, **2016**, 51, 2880-2892	5.5	30
96	A Microelectronic Sensor Device Powered by a Small Implantable Biofuel Cell. *ChemPhysChem*, **2020**, 21, 120-128	3.2	29
95	Approximate SRAMs With Dynamic Energy-Quality Management. *IEEE Transactions on Very Large Scale Integration (VLSI) Systems*, **2016**, 24, 2128-2141	2.6	27
94	A >78%-Efficient Light Harvester over 100-to-100klux with Reconfigurable PV-Cell Network and MPPT Circuit. *Digest of Technical Papers - IEEE International Solid-State Circuits Conference*, **2016**, 2016, 370-371	4	25
93	GenAx: A Genome Sequencing Accelerator **2018**,		24
92	SLC: Split-control Level Converter for dense and stable wide-range voltage conversion **2012**,		24
91	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	19	23

90	. *IEEE Journal of Solid-State Circuits*, **2019**, 54, 231-239	5.5	22
89	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	5.5	21
88	A 346 μm 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	5.5	21
87	A Low Ripple Switched-Capacitor Voltage Regulator Using Flying Capacitance Dithering. *IEEE Journal of Solid-State Circuits*, **2016**, 51, 919-929	5.5	19
86	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	5.5	19
85	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	2.5	19
84	Design Methodology for Voltage-Overscaled Ultra-Low-Power Systems. *IEEE Transactions on Circuits and Systems II: Express Briefs*, **2012**, 59, 952-956	3.5	18
83	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**,		17
82	A 5.58 nW Crystal Oscillator Using Pulsed Driver for Real-Time Clocks. *IEEE Journal of Solid-State Circuits*, **2016**, 51, 509-522	5.5	17
81	A 23pW, 780ppm/°C resistor-less current reference using subthreshold MOSFETs **2014**,		16
80	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	2.5	16
79	A statistical approach for full-chip gate-oxide reliability analysis **2008**,		16
78	A Self-Tuning IoT Processor Using Leakage-Ratio Measurement for Energy-Optimal Operation. *IEEE Journal of Solid-State Circuits*, **2020**, 55, 87-97	5.5	16
77	Circuit and System Designs of Ultra-Low Power Sensor Nodes With Illustration in a Miniaturized GNSS Logger for Position Tracking: Part I—Analog Circuit Techniques. *IEEE Transactions on Circuits and Systems I: Regular Papers*, **2017**, 64, 2237-2249	3.9	15
76	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	3.9	15
75	A 5.58nW 32.768kHz DLL-assisted XO for real-time clocks in wireless sensing applications **2012**,		15
74	A 1.85fW/bit ultra low leakage 10T SRAM with speed compensation scheme **2011**,		15
73	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	5.5	14

72	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	5.5	14
71	Small-area Si Photovoltaics for Low-Flux Infrared Energy Harvesting. *IEEE Transactions on Electron Devices*, **2017**, 64, 15-20	2.9	14
70	A 0.3V VDDmin 4+2T SRAM for searching and in-memory computing using 55nm DDC technology **2017**,		14
69	Battery Voltage Supervisors for Miniature IoT Systems. *IEEE Journal of Solid-State Circuits*, **2016**, 51, 2743-2756	5.5	13
68	An Efficient Piezoelectric Energy Harvesting Interface Circuit Using a Sense-and-Set Rectifier. *IEEE Journal of Solid-State Circuits*, **2019**, 54, 3348-3361	5.5	12
67	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	5.2	12
66	Variation-aware static and dynamic writability analysis for voltage-scaled bit-interleaved 8-T SRAMs **2011**,		11
65	Robust ultra-low voltage ROM design **2008**,		11
64	High-Efficiency Photovoltaic Modules on a Chip for Millimeter-Scale Energy Harvesting. *Progress in Photovoltaics: Research and Applications*, **2019**, 27, 540-546	6.8	10
63	A 0.19□0.17mm Wireless Neural Recording IC for Motor Prediction with Near-Infrared-Based Power and Data Telemetry.. *Digest of Technical Papers - IEEE International Solid-State Circuits Conference*, **2020**, 2020, 416-418	4	9
62	A 1.7nW PLL-assisted current injected 32KHz crystal oscillator for IoT **2017**,		9
61	**2019**,		8
60	Dual-slope capacitance to digital converter integrated in an implantable pressure sensing system **2014**,		8
59	The Internet of Tiny Things: Recent Advances of Millimeter-Scale Computing. *IEEE Design and Test*, **2019**, 36, 65-72	1.4	7
58	MBus: An Ultra-Low Power Interconnect Bus for Next Generation Nanopower Systems **2015**, 2015, 629-641		7
57	A 7.3 M Output Non-Zeros/J, 11.7 M Output Non-Zeros/GB Reconfigurable Sparse Matrix□Matrix Multiplication Accelerator. *IEEE Journal of Solid-State Circuits*, **2020**, 55, 933-944	5.5	7
56	MBus: A System Integration Bus for the Modular Microscale Computing Class. *IEEE Micro*, **2016**, 36, 60-70	1.8	7
55	A 1.02nW PMOS-only, trim-free current reference with 282ppm/□C from □40□C to 120□C and 1.6% within-wafer inaccuracy **2017**,		7

54	A 1.6-mm2 38-mW 1.5-Gb/s LDPC decoder enabled by refresh-free embedded DRAM **2012**,		7
53	Low complexity optical flow using neighbor-guided semi-global matching **2016**,		7
52	A Dual-Stage, Ultra-Low-Power Acoustic Event Detection System **2016**,		7
51	Using Low Cost Erasure and Error Correction Schemes to Improve Reliability of Commodity DRAM Systems. *IEEE Transactions on Computers*, **2016**, 65, 3766-3779	2.5	7
50	Subthreshold voltage reference with nwell/psub diode leakage compensation for low-power high-temperature systems **2017**,		6
49	Energy-optimized high performance FFT processor **2011**,		6
48	Millimeter-Scale Node-to-Node Radio Using a Carrier Frequency-Interlocking IF Receiver for a Fully Integrated 4 $times$ 4 $times$ 4 mm3 Wireless Sensor Node. *IEEE Journal of Solid-State Circuits*, **2020**, 55, 1128-1138	5.5	6
47	Bridging the"Last Millimeter" Gap of Brain-Machine Interfaces via Near-Infrared Wireless Power Transfer and Data Communications. *ACS Photonics*, **2021**, 8, 1430-1438	6.3	6
46	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	6.4	5
45	IoT2 □the Internet of Tiny Things: Realizing mm-Scale Sensors through 3D Die Stacking **2019**,		5
44	Infrared Energy Harvesting in Millimeter-Scale GaAs Photovoltaics. *IEEE Transactions on Electron Devices*, **2017**, 64, 4554-4560	2.9	5
43	**2012**,		5
42	Circuit and System Design Guidelines for Ultra-low Power Sensor Nodes. *IPSJ Transactions on System LSI Design Methodology*, **2013**, 6, 17-26	0.2	5
41	A 67-fsrms Jitter, □130 dBc/Hz In-Band Phase Noise, □256-dB FoM Reference Oversampling Digital PLL With Proportional Path Timing Control. *IEEE Solid-State Circuits Letters*, **2020**, 3, 430-433	2	5
40	A Reference Oversampling Digital Phase-Locked Loop with -240 dB FOM and -80 dBc Reference Spur **2019**,		5
39	A Noise-Efficient Neural Recording Amplifier Using Discrete-Time Parametric Amplification. *IEEE Solid-State Circuits Letters*, **2018**, 1, 203-206	2	5
38	Reference Oversampling PLL Achieving □256-dB FoM and □78-dBc Reference Spur. *IEEE Journal of Solid-State Circuits*, **2021**, 56, 2993-3007	5.5	5
37	**2019**,		4

36	Millimeter-scale computing platform for next generation of Internet of Things **2016**,		4
35	STEEL: A technique for stress-enhanced standard cell library design **2008**,		4
34	Transmuter **2020**,		4
33	A 0.3-V to 1.8□3.3-V Leakage-Biased Synchronous Level Converter for ULP SoCs. *IEEE Solid-State Circuits Letters*, **2020**, 3, 130-133	2	4
32	RRAM-DNN: An RRAM and Model-Compression Empowered All-Weights-On-Chip DNN Accelerator. *IEEE Journal of Solid-State Circuits*, **2021**, 56, 1105-1115	5.5	4
31	A 40-nm Ultra-Low Leakage Voltage-Stacked SRAM for Intelligent IoT Sensors. *IEEE Solid-State Circuits Letters*, **2021**, 4, 14-17	2	4
30	Victim Alignment in Crosstalk-Aware Timing Analysis. *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems*, **2010**, 29, 261-274	2.5	3
29	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	2.6	3
28	Dual-Junction GaAs Photovoltaics for Low Irradiance Wireless Power Transfer in Submillimeter-Scale Sensor Nodes. *IEEE Journal of Photovoltaics*, **2020**, 10, 1721-1726	3.7	3
27	Physical Layer Secret Key Generation Using Joint Interference and Phase Shift Keying Modulation. *IEEE Transactions on Microwave Theory and Techniques*, **2021**, 69, 2673-2685	4.1	3
26	A Light Tolerant Neural Recording IC for Near-Infrared-Powered Free Floating Motes. **2021**, 2021,		3
25	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	5.5	3
24	Achieving Ultralow Standby Power With an Efficient SCCMOS Bias Generator. *IEEE Transactions on Circuits and Systems II: Express Briefs*, **2013**, 60, 842-846	3.5	2
23	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	2.5	2
22	A 128kb high density portless SRAM using hierarchical bitlines and thyristor sense amplifiers **2011**,		2
21	Synchronization of ultra-low power wireless sensor nodes **2011**,		2
20	Standby power reduction techniques for ultra-low power processors **2008**,		2
19	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**, 1-1	5.5	2

18	Sample and Average Common-Mode Feedback in a 101 nW Acoustic Amplifier **2020**,		2
17	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	5.5	2
16	A 42nJ/conversion on-demand state-of-charge indicator for miniature IoT Li-ion batteries **2017**,		1
15	FOCUS: Key building blocks and integration strategy of a miniaturized wireless sensor node **2015**,		1
14	Circuits for ultra-low power millimeter-scale sensor nodes **2012**,		1
13	Demo: Ultra-constrained sensor platform interfacing **2012**,		1
12	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**, 1-1	5.5	1
11	Versa: A 36-Core Systolic Multiprocessor With Dynamically Reconfigurable Interconnect and Memory. *IEEE Journal of Solid-State Circuits*, **2022**, 1-1	5.5	1
10	Ultra-Low Power 32kHz Crystal Oscillators: Fundamentals and Design Techniques. *IEEE Open Journal of the Solid-State Circuits Society*, **2021**, 1, 79-93		1
9	AA-ResNet: Energy Efficient All-Analog ResNet Accelerator **2020**,		1
8	A 510-pW 32-kHz Crystal Oscillator With High Energy-to-Noise-Ratio Pulse Injection. *IEEE Journal of Solid-State Circuits*, **2021**, 1-1	5.5	1
7	Millimeter-sized smart sensors reveal that a solar refuge protects tree snail Partula hyalina from extirpation. *Communications Biology*, **2021**, 4, 744	6.7	0
6	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
5	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	5.5	
4	A 43 nW, 32 kHz, ±4.2 ppm Piecewise Linear Temperature-Compensated Crystal Oscillator With ΔΣ-Modulated Load Capacitance. *IEEE Journal of Solid-State Circuits*, **2022**, 1-1	5.5	
3	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	5.5	
2	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	5.5	
1	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	