Dennis Sylvester

List of Publications by Year
in descending order

104 papers	4,046 citations	201385 27 h-index	149479 56 g-index
104 all docs	104 docs citations	104 times ranked	3244 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.	16.4	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.	3.5	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.	3.5	165
4	A2: Analog Malicious Hardware. , 2016, , .		157
5	A Subthreshold Voltage Reference With Scalable Output Voltage for Low-Power IoT Systems. IEEE Journal of Solid-State Circuits, 2017, 52, 1443-1449.	3.5	156
6	Millimeter-scale nearly perpetual sensor system with stacked battery and solar cells. , 2010, , .		153
7	A Low-Voltage Processor for Sensing Applications With Picowatt Standby Mode. IEEE Journal of Solid-State Circuits, 2009, 44, 1145-1155.	3.5	147
8	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.	3.5	139
9	A highly resilient routing algorithm for fault-tolerant NoCs. , 2009, , .		136
10	A Variation-Tolerant Sub-200 mV 6-T Subthreshold SRAM. IEEE Journal of Solid-State Circuits, 2008, 43, 2338-2348.	3.5	116
11	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.	3.5	109
12	8.3 A 553F^2 2-transistor amplifier-based Physically Unclonable Function (PUF) with 1.67% native instability. , 2017, , .		84
13	Yield-Driven Near-Threshold SRAM Design. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2010, 18, 1590-1598.	2.1	79
14	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.	3.5	75
15	Swizzle-Switch Networks for Many-Core Systems. IEEE Journal on Emerging and Selected Topics in Circuits and Systems, 2012, 2, 278-294.	2.7	68
16	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.	3.5	61
17	Low-Power High-Throughput LDPC Decoder Using Non-Refresh Embedded DRAM. IEEE Journal of Solid-State Circuits, 2014, 49, 783-794.	3.5	57
18	SRAM for Error-Tolerant Applications With Dynamic Energy-Quality Management in 28 nm CMOS. IEEE Journal of Solid-State Circuits, 2015, 50, 1310-1323.	3.5	54

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19	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.	2.1	48
20	A 5.8 nW CMOS Wake-Up Timer for Ultra-Low-Power Wireless Applications. IEEE Journal of Solid-State Circuits, 2015, 50, 1754-1763.	3.5	47
21	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.	3.5	45
22	CAS-FEST 2010: Mitigating Variability in Near-Threshold Computing. IEEE Journal on Emerging and Selected Topics in Circuits and Systems, 2011, 1, 42-49.	2.7	41
23	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.	3.5	41
24	A Sub-nW Multi-stage Temperature Compensated Timer for Ultra-Low-Power Sensor Nodes. IEEE Journal of Solid-State Circuits, 2013, 48, 2511-2521.	3.5	38
25	Approximate SRAMs With Dynamic Energy-Quality Management. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2016, 24, 2128-2141.	2.1	37
26	A Resonant Current-Mode Wireless Power Receiver and Battery Charger With −32 dBm Sensitivity for Implantable Systems. IEEE Journal of Solid-State Circuits, 2016, 51, 2880-2892.	3.5	36
27	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.	3.5	35
28	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.	3.5	33
29	A Self-Tuning IoT Processor Using Leakage-Ratio Measurement for Energy-Optimal Operation. IEEE Journal of Solid-State Circuits, 2020, 55, 87-97.	3.5	33
30	A 5.58 nW Crystal Oscillator Using Pulsed Driver for Real-Time Clocks. IEEE Journal of Solid-State Circuits, 2016, 51, 509-522.	3.5	32
31	A 0.3V VDDmin 4+2T SRAM for searching and in-memory computing using 55nm DDC technology. , 2017, , .		32
32	A 23pW, 780ppm/&#x00B0;C resistor-less current reference using subthreshold MOSFETs. , 2014, , .		30
33	An Area-Efficient 128-Channel Spike Sorting Processor for Real-Time Neural Recording With <inline-formula> <tex-math notation="LaTeX">$0.175~mu$ </tex-math> </inline-formula>W/Channel in 65-nm CMOS. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2019, 27, 126-137.	2.1	30
34	SLC: Split-control Level Converter for dense and stable wide-range voltage conversion. , 2012, , .		29
35	An Efficient Piezoelectric Energy Harvesting Interface Circuit Using a Sense-and-Set Rectifier. IEEE Journal of Solid-State Circuits, 2019, 54, 3348-3361.	3.5	27
36	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

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37	A Low Ripple Switched-Capacitor Voltage Regulator Using Flying Capacitance Dithering. IEEE Journal of Solid-State Circuits, 2016, 51, 919-929.	3.5	26
38	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.	3.5	25
39	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.	3.5	25
40	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.	3.5	25
41	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.	1.9	23
42	Design Methodology for Voltage-Overscaled Ultra-Low-Power Systems. IEEE Transactions on Circuits and Systems II: Express Briefs, 2012, 59, 952-956.	2.2	23
43	Battery Voltage Supervisors for Miniature IoT Systems. IEEE Journal of Solid-State Circuits, 2016, 51, 2743-2756.	3.5	23
44	Low-Power-Design Space Exploration Considering Process Variation Using Robust Optimization. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2007, 26, 67-79.	1.9	20
45	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.	1.9	20
46	A 5.58nW 32.768kHz DLL-assisted XO for real-time clocks in wireless sensing applications. , 2012, , .		20
47	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.	3.5	20
48	A 1.85fW/bit ultra low leakage 10T SRAM with speed compensation scheme. , 2011, , .		19
49	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.	3.5	19
50	A statistical approach for full-chip gate-oxide reliability analysis. , 2008, , .		18
51	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.	3.5	18
52	RRAM-DNN: An RRAM and Model-Compression Empowered All-Weights-On-Chip DNN Accelerator. IEEE Journal of Solid-State Circuits, 2021, 56, 1105-1115.	3.5	18
53	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, , .		17
54	Parametric Yield Analysis and Optimization in Leakage Dominated Technologies. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2007, 15, 613-623.	2.1	16

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55	Robust ultra-low voltage ROM design. , 2008, , .		16
56	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.	2.7	15
57	Variation-aware static and dynamic writability analysis for voltage-scaled bit-interleaved 8-T SRAMs. , 2011, , .		15
58	Subthreshold voltage reference with nwell/psub diode leakage compensation for low-power high-temperature systems. , 2017, , .		14
59	Reference Oversampling PLL Achieving â~'256-dB FoM and â~'78-dBc Reference Spur. IEEE Journal of Solid-State Circuits, 2021, 56, 2993-3007.	3.5	12
60	A Dual-Stage, Ultra-Low-Power Acoustic Event Detection System. , 2016, , .		11
61	A 1.7nW PLL-assisted current injected 32KHz crystal oscillator for IoT. , 2017, , .		11
62	27.2 An Adiabatic Sense and Set Rectifier for Improved Maximum-Power-Point Tracking in Piezoelectric Harvesting with 541% Energy Extraction Gain. , 2019, , .		11
63	A 1.6-mm^2 38-mW 1.5-Gb/s LDPC decoder enabled by refresh-free embedded DRAM. , 2012, , .		10
64	NSF expedition on variability-aware software: Recent results and contributions. IT - Information Technology, 2015, 57, 181-198.	0.6	10
65	IoT^2 â€" the Internet of Tiny Things: Realizing mm-Scale Sensors through 3D Die Stacking. , 2019, , .		10
66	A 40-nm Ultra-Low Leakage Voltage-Stacked SRAM for Intelligent IoT Sensors. IEEE Solid-State Circuits Letters, 2021, 4, 14-17.	1.3	9
67	Circuit and System Design Guidelines for Ultra-low Power Sensor Nodes. IPSJ Transactions on System LSI Design Methodology, 2013, 6, 17-26.	0.5	8
68	Dual-slope capacitance to digital converter integrated in an implantable pressure sensing system. , 2014, , .		8
69	STEEL: A technique for stress-enhanced standard cell library design. , 2008, , .		7
70	Energy-optimized high performance FFT processor. , 2011, , .		7
71	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.	1.3	7
72	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.	3.5	7

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73	A Light Tolerant Neural Recording IC for Near-Infrared-Powered Free Floating Motes. , 2021, 2021, .		7
74	A Noise-Efficient Neural Recording Amplifier Using Discrete-Time Parametric Amplification. IEEE Solid-State Circuits Letters, 2018, 1, 203-206.	1.3	6
75	A Reference Oversampling Digital Phase-Locked Loop with -240 dB FOM and -80 dBc Reference Spur. , 2019, , .		6
76	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.	3.5	6
77	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.	1.3	6
78	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.	2.7	6
79	Standby power reduction techniques for ultra-low power processors. , 2008, , .		5
80	Victim Alignment in Crosstalk-Aware Timing Analysis. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2010, 29, 261-274.	1.9	5
81	Achieving Ultralow Standby Power With an Efficient SCCMOS Bias Generator. IEEE Transactions on Circuits and Systems II: Express Briefs, 2013, 60, 842-846.	2.2	5
82	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.	2.1	4
83	Synchronization of ultra-low power wireless sensor nodes. , 2011, , .		4
84	Millimeter-scale computing platform for next generation of Internet of Things. , 2016, , .		4
85	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.	3.5	4
86	An Analog-Assisted Digital LDO With Single Subthreshold Output pMOS Achieving 1.44-fs FOM. IEEE Solid-State Circuits Letters, 2021, 4, 154-157.	1.3	4
87	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.	1.9	3
88	FOCUS: Key building blocks and integration strategy of a miniaturized wireless sensor node. , 2015, , .		3
89	Sample and Average Common-Mode Feedback in a 101 nW Acoustic Amplifier. , 2020, , .		3
90	A 128kb high density portless SRAM using hierarchical bitlines and thyristor sense amplifiers. , 2011, , .		2

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91	A confidence-driven model for error-resilient computing. , 2011, , .		2
92	A dual-passband filter architecture for dual-band systems. , 2011, , .		2
93	AA-ResNet: Energy Efficient All-Analog ResNet Accelerator. , 2020, , .		2
94	A 192 nW 0.02 Hz High Pass Corner Acoustic Analog Front-End with Automatic Saturation Detection and Recovery. , 2021, , .		2
95	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.	3.5	2
96	Demo: Ultra-constrained sensor platform interfacing. , 2012, , .		1
97	Circuits for ultra-low power millimeter-scale sensor nodes. , 2012, , .		1
98	Ultra-Low Power 32kHz Crystal Oscillators: Fundamentals and Design Techniques. IEEE Open Journal of the Solid-State Circuits Society, 2021, 1, 79-93.	2.0	1
99	AmuProcessor Layer for mm-Scale Die-Stacked Sensing Platforms Featuring Ultra-Low Power Sleep Mode at 125Â°C. , 2020, , .		1
100	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.	3.5	1
101	Energy-Optimal Circuit Design. , 2007, , .		0
102	Introduction to the Special Section on Circuits and Systems for Energy-Autonomous Microsystems. IEEE Transactions on Circuits and Systems II: Express Briefs, 2013, 60, 825-826.	2.2	0
103	Supply boosting for high-performance processors in flip-chip packages. , 2016, , .		0
104	A start-up boosting circuit with 133Ã— speed gain for 2-transistor voltage reference. , 2017, , .		0