

## A. Journal Publications

1. Abhilash Karnatakam Nagabhushana and Haibo Wang, "Accelerating low-voltage SAR ADC operation via comparator timing assisted and circuit adaptive tuning techniques," in *IET Circuits, Devices & Systems*, vol. 14, no. 3, pp. 294-302, 5 2020
2. Haibo Wang, Abhilash Karnatakam Nagabhushana and Stefan Leitner, "Exploiting uncertain timing information in time-based SAR ADCs," in *IET Circuits, Devices & Systems*, vol. 14, no. 3, pp. 390-397, 5 2020
3. Yao Wang, Lijun Sun, Haibo Wang, Lavanya Gopalakrishnan, and Ronald Eaton, "Novel prioritized LRU circuits for shared cache in computer systems," *Modern Physics Letters B*, vol. 34, no. 23, 2020
4. Stefan Leitner and Haibo Wang, "Digital LDO modelling techniques for performance estimation at early design stage," in *IET Circuits, Devices & Systems*, vol. 12, no. 5, pp. 655-661, 9 2018
5. Stefan Leitner, Haibo Wang and Spyros Tragoudas, "Design of Scalable Hardware-Efficient Compressive Sensing Image Sensors," *IEEE Sensors Journal*, vol. 18, no. 2, pp. 641-651, Jan.15, 2018.
6. Yao Wang, Liang Rong, Haibo Wang, and Guangjun Wen, "One-Step Sneak-Path Free Read Scheme for Resistive Crossbar Memory," *ACM Journal on Emerging Technologies in Computing Systems*, Vol. 13, No. 2, February 2017.
7. Stefan Leitner, Haibo Wang, and Spyros Tragoudas, "Design Techniques for Direct Digital Synthesis Circuits with Improved Frequency Accuracy Over Wide Frequency Ranges," *Journal of Circuits, Systems, and Computers*, Vol. 26, No. 2, 2017
8. Stefan Leitner and Haibo Wang, "Current Compensation Techniques for Low-voltage High-performance Current Mirror Circuits," *Analog Integrated Circuits and Signal Processing*, Vol. 88, No. 1, July, 2016, pp. 79-88.
9. Yao Wang, Haibo Wang and Guanjun Wen, "A Low-Power Edge Detection Technique for Sensor Wake-Up Applications," *Journal of Circuits, Systems, and Computers*, Vol. 24, No. 10, 2015
10. Yao Wang, Haibo Wang and Guanjun Wen, "Design Techniques for Ultra-low Voltage Comparator Circuits," *Journal of Circuits, Systems, and Computers*, Vol. 24, No. 1, 2015
11. N. Abou-Qamar, C. Hatziaodoni, and H. Wang, "Speed Error Mitigation for a DSP-Based Resolver-to-Digital Converter Using Auto-Tuning Filters," *IEEE Transactions on Industrial Electronics*, vol. 62, no.2, pp.1134-1139, 2015
12. Jiwei Sun, Haibo Wang, and Pingshan Wang, "A Spatial Sampling Based on 13.3GS/S Sample-and-Hold Circuit," *Review of Scientific Instruments*, Vol. 85, 2014
13. M. Mohanty, B. Zhang, H. Wang, A. Mahajan, H. Akbari, Z. Bashir, S. Ramamoorthy, and J. Hirschi, "Development and Demonstration of an Automation and Control System for Coal Spirals," *International Journal of Coal Preparation and Utilization*, Vol. 34, pp. 157-171, 2014.
14. Saravanan Ramamoorthy and Haibo Wang, "Addressing Memory Effect for Rail-to-Rail Comparator with Near-threshold Supply Voltage," *Journal of Circuits, Systems, and Computers*, Vol. 22, No. 6, 2013
15. Yueran Gao, Haibo Wang, Ning Weng and Lucas Vespa, "Enhancing Sensor Network Data Quality via Collaborated Circuit and Network Operations," *Journal of Sensors and Actuator Networks*. Vol. 2, No. 2, 2013, pp. 196-212
16. Mallik Kandala and Haibo Wang, "A 0.5V High-speed comparator with rail-to-rail input range," *Analog Integrated Circuits and Signal Processing*, Vol. 73, No. 1, pp.415-421, September, 2012
17. Chenglong Zhang and Haibo Wang, "Reeducation of Parasitic Capacitance impact in low-power SAR ADC," *IEEE Transactions on Instrumentation and Measurement*, Vol.61, No.3, pp.587-594, March 2012

18. Yongtao Geng, Huan Zou, Chaojiang Li, Jiwei Sun, Haibo Wang and Pingshan Wang, "Short Pulse Generation With On-Chip Pulse-Forming Lines," *IEEE trans. on VLSI*, Vol. 20, No. 9, pp. 1553-1564, September 2012
19. Pingshan Wang, Haibo Wang, Yueran Gao, Yongtao Geng and George Thomas, "A High-Speed Sample-and-hold Circuit Based on CMOS Transmission Lines," *Analog Integrated Circuits and Signal Processing*, Vol. 66, No. 2, pp.245-254, February, 2011
20. B. Soewito, L. Vespa, N. Weng, and H. Wang, "Hybrid pattern matching for trusted intrusion detection," *Security and Communication Networks*, Vol. 4, No. 1, pp. 33-43, January, 2011
21. Mallik Kandala and Haibo Wang, "Low-power Circuit Techniques for Successive Approximation Register ADC Design," *Journal of Low-Power Electronics*, Vol. 6, No. 2, pp.300-310, August, 2010
22. Huan Zou, Hanqiao Zhang, Chunrong Song, Haibo Wang, Pingshan Wang, "Characterization and modeling of mitered coplanar waveguide bends on silicon substrates," *International Journal of Electronics*, Vol. 97, No. 6, pp. 715-727, October 2010
23. B. Soewito, L. Vespa, A. Mahajan, N. Weng and H. Wang, "Self Addressable Memory-based FSM (SAM-FSM): A Scalable Intrusion Detection Engine," *IEEE Network*, Vol. 23, No. 1, pp. 14 - 21, January, 2009
24. B. Soewito, A. Mahajan, N. Weng, and H. Wang, "High-speed String Matching for Network Intrusion Detection," *International Journal of Communication Networks and Distributed Systems (IJCNDS)*, Vol. 3, No. 4, pp. 319-339, December, 2009
25. A. Laknaur, R. Xiao, S. Durbha, and H. Wang, "Design of a Window Comparator with Adaptive Error Threshold for Online Testing Applications," *Microelectronics Journal*, Vol. 40, No. 9, pp. 1257-1263, September, 2009
26. R. Zakeri, C. Watts, H. Wang, and P. Kohli, "Synthesis and Characterization of Non-linear Nanopores in Alumina Films," *ACS Chemistry of Materials*, Vol. 19, 2007, pp. 1954-1963
27. A. Laknaur, S. Durbha, and H. Wang, "Built-in-Self-Testing Techniques for Programmable Capacitor Arrays," *Journal of Electronic Testing: Theory and Applications*, Vol. 22, No. 6, 2006, pp. 449-462
28. A. Laknaur and H. Wang, "A Methodology to Perform Online Self-Testing for Field Programmable Analog Array Circuits," *IEEE Trans. Instrumentation and Measurement*, Vol. 54, No. 5, 2005, pp. 1739-1750
29. H. Wang and S. B. K. Vrudhula, "Behavioral Synthesis of Field Programmable Analog Array Circuits," *ACM Transactions on Design Automation of Electronic Systems*, Vol. 7, October 2002, pp. 563-604
30. H. Wang and P. C. Liu, "Double-Edge-Triggered Address Pointer for Low Power High Speed FIFO Memories," *IEE Electronics Letters*, Vol. 33, No. 5, February 1997, pp. 387-389
31. H. Wang, P. C. Liu and K. T. Lau, "Low Power Dual-Port CMOS SRAM Macro Design," *IEE Electronics Letters*, Vol. 32, No. 15, July 1996, pp. 1354-1356

## **B. Peer Reviewed Conference Publications:**

1. David E Thompson, Md Kamruzzaman Shuvo, Haibo Wang, "Digital LDO Based Power Signature Generation Circuit for IoT Security," Proc. 63rd IEEE International Midwest Symposium on Circuits and Systems, Springfield, MA, 2020
2. Md Kamruzzaman Shuvo, David E Thompson, Haibo Wang, "MSB-First Distributed Arithmetic Circuit for Convolution Neural Network Computation," Proc. 63rd IEEE International Midwest Symposium on Circuits and Systems, Springfield, MA, 2020
3. David Thompson and Haibo Wang, "Extracting Power Signature from Low Dropout Voltage Regulator for IoT Security," 2020 21st International Symposium on Quality Electronic Design (ISQED), Santa Clara, CA, USA, 2020, pp. 198-198

4. Stefan Leitner, Haibo Wang and Spyros Tragoudas, "Compressive Image Sensor Technique with Sparse Measurement Matrix," Proc. 29<sup>th</sup> IEEE International System on Chip Conference, Seattle, WA, September 6-9, 2016, pp. 223-228.
5. Stefan Leitner, Paul West, Chao Lu and Haibo Wang, "Digital LDO Modeling for Early Design Space Exploration," Proc. 29<sup>th</sup> IEEE International System on Chip Conference, Seattle, WA, September 6-9, 2016, pp. 7-12.
6. Abhilash Karnatakam Nagabhushana and Haibo Wang, "A Comparator Timing Assisted SAR ADC Technique with Reduced Conversion Cycles," Proc. 29<sup>th</sup> IEEE International System on Chip Conference, Seattle, WA, September 6-9, 2016, pp. 200-205.
7. Abhilash K. Nagabhushana and Haibo Wang, "A Novel Time and Voltage Based SAR ADC Design With Self-Learning Technique," Proc. 53<sup>th</sup> Design Automation Conference, Austin, TX, June 5-9, 2016
8. Yao Wang, Lavanya Gopalakrishnan, Haibo Wang, and Ronald Eaton, "Design of Prioritized LRU Circuit for Shared Cache in Real-Time Computer Systems," Proc. 2016 International Conference on Solid-State and Integrated Circuit Technology, Hangzhou, China, October 25-28, 2016.
9. Suresh Koyada, Abhilash K. Nagabhushana, Stefan Leitner and Haibo Wang, "An A-SAR ADC circuit with adaptive auxiliary comparison scheme," Proc. 28<sup>th</sup> IEEE International System-on-Chip Conference (SOCC), Beijing, China, 2015, pp. 197-202.
10. Haibo Wang and Ram Harshvardhan Radhakrishnan, "An Accelerated Successive Approximation Technique for Analog to Digital Converter Design," Proceedings of the 27<sup>th</sup> IEEE International System-On-Chip Conference, Las Vegas, NV, September 2014, (Best Paper Award), pp. 236-241.
11. Adam Watkins, Venkata Naresh Mudhiredy, Haibo Wang, and Spyros Tragoudas, "Adaptive compressive sensing for low power wireless sensors," Proceedings of the 24<sup>th</sup> Great Lakes Symposium on VLSI (GLSVLSI '14), Houston, TX, May 2014, pp. 99-104.
12. Yao Wang, Haibo Wang and Guangjun Wen, "A Novel Envelope Edge Detector for Ultra-low Power Sensor Wake-up Circuit," Proc. 2013 International Symposium of Low Power Electronic Design, Beijing, China, Sept. 2013, pp. 371-376.
13. C. Zhang, H. Wang, and M. Yen, "Low Power Analog Circuit Design for RFID Sensing Circuits," *Proc. International Conference on RFID*, Orlando, FL, April, 2010, pp. 16-21
14. Pingshan Wang, Yongtao Geng, Huan Zou, Haibo Wang, and Chaojiang Li, "An on-chip power modulator," *2010 IEEE International Power Modulator and High Voltage Conference (IPMHVC)*, Atlanta, GA, pp.393-396, May 2010
15. Mallik Kandala, Ramgopal Sekar, Chenglong Zhang Haibo Wang, "A low power charge-redistribution ADC with reduced capacitor array," *Proc. International Symposium on Quality Electronic Design*, San Jose, CA, March, 2010, pp. 44-48
16. Venkata Mudhiredy, Sarvanan Ramamoorthy and Haibo Wang, "Implementing self-testing and self-repairable analog circuits on field programmable analog array platforms," *Proc. International Symposium on Quality Electronic Design*, San Jose, CA, March, 2010, pp. 81 – 86
17. Yueran Gao and Haibo Wang, "A Reconfigurable ADC Circuit with Online-Testing Capability and Enhanced Fault Tolerance," *Proc. 24<sup>th</sup> International of Symposium on Defects and Fault Tolerance on VLSI Systems*, October, 2009, Chicago, pp. 202-210
18. A. Mahajan, B. Soewito, S. K. Parsi, N. Weng and H. Wang, "Implementing High speed String Matching Hardware for Network Intrusion Detection Systems," *Proc. International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA)*, Las Vegas, NV, July, 2008, pp.157-163
19. S. Ramamoorthy, H. Wang, S. B. K. Vrudhula, "A Low-Power Double-Edge-Triggered Address Pointer Circuit for FIFO Memory Design," *Proc. International Symposium on Quality Electronic Design*, San Jose, CA, March, 2008, pp. 123-126
20. R. Xiao, A. Laknaur, H. Wang, "A Fully Programmable Analog Window Comparator," *Proc. International Symposium on Circuit and Systems*, New Orleans, LA, May, 2007, pp. 3872-3875

21. M. N. Skoufis, H. Wang, T. Haniotakis, S. Tragoudas, "Glitch Control with Dynamic Receiver Threshold Adjustment," *Proc. International Symposium on Quality Electronic Design*, San Jose, CA, March, 2007, pp. 410-415
22. A. Laknaur, R. Xiao, S. R. Durbha, H. Wang, "Design of a Window Comparator with Adaptive Error Threshold for Online Testing Applications," *Proc. International Symposium on Quality Electronic Design*, San Jose, CA, March, 2007, pp. 501-506
23. A. Laknaur, R. Xiao, H. Wang, "A Programmable Window Comparator for Analog Online Testing," *Proc. VLSI Test Symposium*, Berkeley, CA, May, 2007, pp. 119-124
24. M. Skoufis, H. Wang. And S. Tragoudas, "A Method to Cope with Soft Errors," *Proc. of 11<sup>th</sup> WSEAS International Conference on Circuits*, Crete Island, Greece, July, 2007, pp. 166-169
25. S. Durbha, A. Laknaur, and H. Wang, "Investigating the efficiency of Integrator-Based Capacitor Array Testing Techniques," *Proc. of 24<sup>th</sup> VLSI Test Symposium*, Berkeley, CA, May, 2006, pp. 320-325
26. A. Laknaur and H. Wang, "Design of Window Comparators for Integrator-Based Capacitor Array Testing Circuits," *Proc. of 7<sup>th</sup> International Symposium on Quality Electronic Design*, San Jose, CA, 2006, pp. 531-536
27. K. Raghuraman, H. Wang, and S. Tragoudas, "Minimizing FPGA Reconfiguration Data at Logic Level," *Proc. of 7<sup>th</sup> International Symposium on Quality Electronic Design*, San Jose, CA, 2006, pp. 219-224
28. A. Laknaur and H. Wang, "Built-In-Self-Testing Techniques for Programmable Capacitor Arrays," *Proc. of the 6<sup>th</sup> International Symposium on Quality Electronic Design*, San Jose, CA, 2005, pp. 434-439
29. Michael Welling, Spyros Tragoudas, and Haibo Wang, "A minimum cut based re-synthesis approach," *Proc. of 6<sup>th</sup> International Symposium on Quality Electronic Design*, San Jose, CA, March 2005, pp. 202-207
30. K. Raghuraman, H. Wang, and S. Tragoudas, "A Novel Approach to Minimizing Reconfiguration Cost for LUT-Based FPGAs," *Proc. of 18<sup>th</sup> International VLSI Design Conference*, January 2005, pp. 673 – 676
31. H. Wang, S. Kulkarni, and S. Tragoudas, "On-line Testing Field Programmable Analog Array Circuits," *Proc. of International Test Conference*, 2004, Charlotte, NC, pp. 1340-1348
32. H. Wang, S. Kulkarni, and S. Tragoudas, "Circuit Techniques for Field Programmable Analog Array On-line Testing," *Proc. of 10<sup>th</sup> International Mixed-Signal Testing Workshop*, Portland, OR, June 2004, pp.237-244
33. H. Wang, S. B. K. Vrudhula, and O. A. Palusinski, "Performance Driven Placement and Routing for Field Programmable Analog Arrays," *Proc. of the 8th International Conference on Mixed Design of Integrated Circuits and Systems*, 2001, Poland, pp.207-212
34. H. Wang, S. B. K. Vrudhula, and O. A. Palusinski, "Behavioral level analog synthesis for Field Programmable Analog Arrays," *Proc. of the 7th International Conference on Mixed Design of Integrated Circuits and Systems*, 2000, Poland
35. H. Wang and P. C. Liu, "A low power current sensing scheme for CMOS SRAM," *The Records of the IEEE International Workshop on Memory Technology, Design and Testing*, 1996, Singapore, pp.37-43
36. P. C. Liu, H. Wang and O. K. Tan, "A word-line automatic switching-off scheme for low power SRAM," *Proc. of the Sixth international Symposium on IC Technology, Systems & Applications*, 1995, Singapore, pp.224-228
37. P. C. Liu, B. Lee, E. A. Lian, G. C. Han and H. Wang, "The related effects on increased PN junction area on ESD protection capability," *Proc. of the 5th International Symposium on the Physical & Failure Analysis of Integrated Circuits*, 1995, Singapore, pp.116-120

### C. Patents:

1. Stefan Leitner, Haibo Wang and Spyros Tragoudas, "Systems and Methods for Compressive Image Sensor Techniques Utilizing Sparse Measurement Matrices," US Pat. No. 10,240,910, March, 26, 2019
2. M. Mohanty, A. Mahajan, H. Wang, and B. Zhang, "Automated System for Coal Spiral," Patent No.: US9126205B2, Sep. 8, 2015.