2014 IEEE Dallas Circuits and Systems Conference

(DCAS 2014)

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DCAS 2014 – Detailed Conference Program
(Technical Paper Presentation Tracks)

Track-1: Analog and Mixed Signal

2:00-5:00, Sunday, Oct. 12, TI Auditorium (ECSS-2.102)
Session Chair: Sidharth Balasubramanian

1.1	**2:00**	**A Loop-breaking method for the simulation of feedback circuits using a VCVS-Terminated Subnetwork Model** 1 Howard Russell, Ronald Carter, Alan Davis (University of Texas Arlington)
1.2	**2:04**	**28 nm Charge Sensitive Preamplifier Using 1 G Ohm Dual PMOS Feedback Resistor Operating in the Weak Inversion Region** 5 Mahmoud Hassan, Hazem W. Marar (Princess Sumaya University for Technology, Jordan)
1.3	**2:08**	**A 14-b, 0.1ps Resolution Coarse-Fine Time-to-Digital Converter in 45 nm CMOS** 8 Huihua Huang, Carl Sechen (University of Texas at Dallas)
1.4	**2:12**	**A Dual Positive Feedback Three-Stage Low Noise Amplifier** 12 Majid Jalalifar, Gyung-Su Byun (Southern Methodist University)
1.5	**2:16**	**A Low-Voltage, Process and Temperature Compensated Ring VCO Design** 16 Wu, Guoying, Ping Gui, Kexu Sun, Shita Guo, Tao Zhang, Tianzuo Xi (SMU)
	2:30 - 3:00	**Break / Poster Session**
1.6	**3:00**	**CMOS inverter-based voltage and current references in short channel technologies** 20 Raghunandan K.R., Viswanathan T.R. (University of Texas at Austin)
1.7	**3:20**	**Predicting ADC: A New Approach for Low Power ADC Design** 24 Nicholas Wood (UT Dallas), Nan Sun (UT Austin)
1.8	**3:40**	**Variation Resilient High Performance and Low Voltage Single Ended Sense Amplifier** 28 Raviprakash Rao (Texas Instruments Inc), Shahid Ali (Intel India Pvt. Ltd.)
1.9	**4:00**	**Integer-N Digital PLL Using ADC-Based Phase Detector** 32 Masoud Ensafdaran, Pratheep Bondalapati, Won Namgoong (UT Dallas)
1.10	**4:20**	**Zero Quiescent Current, Delay Adjustable, Power-on-Reset Circuit** 36 Rahul Prakash (Texas Instruments Inc.)

Track-2: High Performance and Energy-efficient Digital

2:00-5:00, Sunday, Oct. 12, ECSS-2.415
Session Chair: Rama Venkatasubramanian

2.1	**2:00**	**Enhancement in IEEE 1500 Standard for at-speed Test and Debug** 40 Ghazanfar Ali, Fawnizu Hussin, Noohul Ali, Nor Hamid (Universiti Teknologi PETRONAS), Raja Adnan (Intel)
2.2	**2:04**	**Efficient FPGA Implementations of Volterra DFEs for Optical Systems** 44 Andreas Emeretlis, Vassileios Kelefouras, George Theodoridis (University of Patras), George - Othon Glentis (University of Peloponnese, Greece)
2.3	**2:08**	**Energy-Efficient Imprecise Reconfigurable Computing through Probabilistic Domain Transformation** 48 Mohammed Alawad, Mingjie Lin (University of Central Florida)
2.4	**2:12**	**Effect of Switchbox Topologies and Net Ordering on 3D FPGA Routing-a study** 52 Girish Ramanand Deshpande, Dinesh Bhatia (University of Texas at Dallas)
2.5	**2:16**	**Reducing Leakage Power in Wearable Medical Devices Using Memory Nap Controller** 56 Oluleye Olorode, Mehrdad Nourani (University of Texas at Dallas)
	2:30 - 3:00	**Break / Poster Session**
2.6	**3:00**	**Radix-2^h Online Floating Point Multipliers** 60 Georgina Binoy Joseph (KCG College of Technology, India), Devanathan R. (Hindustan Institute of Technology & Science, Chennai, India)
2.7	**3:20**	**Implementation of a Low Complexity Low Latency Arbitrary Resampler on GPUs** 64 Scott Kim, Shuvra Bhattacharyya (University of Maryland, College Park)
2.8	**3:40**	**Minimum Energy Operation using Robust Asynchronous Logic with Sleep Transistors** 68 Akshay Sridharan, Carl Sechen (University of Texas at Dallas)
2.9	**4:00**	**Perils of Power Prediction in Early Power-Integrity Analysis** 73 Abhishek Arun, Shane Stelmach, Rama Venkatasubramanian, Jose Flores, Colin Jitlal, Frank Cano (Texas instruments Inc.)

Track-3: Sensors and Data Analytics

10:15-12:00, Monday, Oct. 13, TI Auditorium (ECSS-2.102)
Session Chair: Terry Blake

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3.2	**10:35**	**EMG Based Classification of Percentage of Maximum Voluntary Contraction Using Artificial Neural Networks** 83 Stephen Hickman, Rocio Alba-Flores, Mohammad Ahad (Georgia Southern University)
3.3	**10:55**	**Multi-HMM Classification for hand gesture recognition using two differing modality sensors** 87 Kui Liu, Chen Chen, Roozbeh Jafari, Nasser Kehtarnavaz (UTDallas)
3.4	**11:15**	**Real-time Active Noise Control of Multi-tones and MRI Acoustic Noise in fMRI bore with Signal Decomposition and Parallel Hybrid RLS-NLMS Adaptive Algorithms** 91 Sri Hari Krishna Vemuri*, Anshuman Ganguly issa Panahi (UT Dallas)
3.5	**11:35**	**Study on the Effectiveness of a Weighted Pseudo-Linear Approach to Emitter Location** 95 Michael Thompson*, Josh Stone Willis Troy (Baylor University)

Track-4: RF Techniques

1:00-3:00, Monday, Oct. 13, TI Auditorium (ECSS-2.102)
Session Chair: Oren Eliezer

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4.4	**1:08**	**Resonant Coupling Analysis for a Two-Coil Wireless Power Transfer System** 111 Rajiv Jay, Samuel Palermo (Texas A&M University)
4.5	**1:12**	**Modeling and Compensation of Antenna RF Switching Non-Idealities in OFDM Receivers** 115 Pratheep Bondalapati, Won Namgoong, Murat Torlak (University of Texas at Dallas)
4.6	**1:20**	**Digitally Intensive Wireless Transmitter Architecture Employing RF Pulse-Width Modulation** 119 Hyejeong Song, Ranjit Gharpurey (University of Texas at Austin)
4.7	**1:40**	**Signal Conditioning for Polar All-Digital OFDM Wireless Transmitters** 123 Suhas Illath veetil , Mohamed Helaoui (University of Calgary, Canada)
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4.10	**2:40**	**Techniques for Dynamic Range Enhancement in a Frequency-Folded Broadband Channelizer** 131 Wei-Gi Ho, Vineet Singh, Travis Forbes , Ranjit Gharpurey (UT Austin)
	3:00 - 3:15	**Break / Poster Session**

Track-5: Process and Technology

2:00-5:00, Sunday, Oct. 12, ECSS-2.415
Session Chair: Andrew Marshall

5.1	**2:24**	**Volume and Concentration Identification by Using an Electrowetting on Dielectric Device** 135 Yiyan Li, Hongzhong Li, and R. Jacob Baker (University of Nevada, Las Vegas)