

# **2015 IEEE Dallas Circuits and Systems Conference (DCAS 2015)**

**Dallas, Texas, USA**  
**12 – 13 October 2015**



IEEE Catalog Number: CFP15505-POD  
ISBN: 978-1-4673-7981-6

## TABLE OF CONTENTS

<b>A Highly Efficient and Reliable Electrowetting on Dielectric Device for Point-of-Care Diagnostics .....</b>	1
<i>Y. Li, R. Baker, D. Raad</i>	
<b>Precise EWOD Top Plate Positioning Using Inverse Preisach Model Based Hysteresis Compensation .....</b>	5
<i>Y. Li, R. Baker</i>	
<b>Acoustic Detection of Excessive Lung Water using Sub-band Features .....</b>	9
<i>K. Hong, W. Ser, Z. Lin, D. Foo</i>	
<b>A Simulation Method for Design and Optimization of RF Power Amplifiers with Digital Predistortion .....</b>	13
<i>H. Chauhan, M. Onabajo, M. McCormick, V. Kvartenko, R. Coxe</i>	
<b>A High Frequency Memristor Emulator Circuit .....</b>	17
<i>M. Chilukuri, S. Jung</i>	
<b>An Energy Efficient Wideband RF Front-End for a DVB-H/ISDB-T Receiver.....</b>	21
<i>S. Chakraborty, D. Sahu, S. Mukherjee</i>	
<b>Channelized Front-Ends for Broadband Signal Processing with Relaxed Anti-Aliasing Filtering .....</b>	25
<i>V. Singh, W. Ho, R. Gharpurey</i>	
<b>On-chip Transformers: A Circuit Designer's Perspective on the Loss and Bandwidth .....</b>	29
<i>S. Balasubramanian</i>	
<b>Novel Dithering-based Peak-to-Average Power Ratio Reduction System .....</b>	33
<i>E. Pisek, S. Abu-Surra, R. Taori</i>	
<b>Analysis of Phase Noise in CMOS Ring Oscillator Due to Substrate Noise .....</b>	37
<i>X. Deng, X. Lin, Y. Mo, M. Zhu</i>	
<b>Accelerating Massive MIMO Uplink Detection on GPU for SDR Systems .....</b>	41
<i>K. Li, B. Yin, M. Wu, J. Cavallaro, C. Studer</i>	
<b>Exploring Feedback Active Noise Control with Ambisonics.....</b>	45
<i>A. Ganguly, I. Panahi, F. Dufour</i>	
<b>Nonlinear Filtering of Narrowband Interference in a Wireless Synchronizer .....</b>	49
<i>Y. Liang, D. Rajan, O. Eliezer, T. Jung</i>	
<b>A Genetic Algorithm Based Approach to Pipelined Memory-Aware Scheduling on an MPSoC .....</b>	54
<i>H. Salamy, S. Aslan</i>	
<b>Improving Linear Feedback Shift Registers Using Similarity Transformations.....</b>	58
<i>N. Saraf, K. Bazargan</i>	
<b>GPU Based Implementation of a 64-Channel Polyphase Channalizer .....</b>	62
<i>A. Al-Safi, B. Bazuin</i>	
<b>A 1<math>\mu</math>A Linear Regulator with Programmable NMOS Pass Device .....</b>	66
<i>H. Roman, G. Serrano</i>	
<b>Determination of Transconductance-to-Drain-Current Dependent Flicker Noise Parameters .....</b>	70
<i>J. Ou</i>	
<b>Exponential Pulse Generator for a Time Domain Reflectometer .....</b>	74
<i>M. Ash, R. Flake, T. Viswanathan</i>	
<b>A Low-Power Switched-Capacitor Passive Sigma- Delta Modulator .....</b>	78
<i>A. Roy, R. Baker</i>	
<b>A 25-ppm/<math>^{\circ}</math>C, 9-bit Linear 11-53 MHz Tunable, 5 <math>\mu</math>A/MHz DCO in 90nm for Low Power Microcontrollers .....</b>	82
<i>R. Ramanan, T. Rajavelu, V. Mahadevan, S. Sreekiran</i>	
<b>Asynchronous SAR Logic Design Using Majority Vote Comparison for Configurable SAR ADCs .....</b>	86
<i>M. Ahmadi, W. Namgoong</i>	
<b>A 1pJ/bit 10Gbps Optical Carrier-Injection Ring Modulator and All-Digital Driver Circuit in 45nm SOI .....</b>	90
<i>K. Gupta</i>	
<b>Magneto-Electric Magnetic Tunnel Junction as Process Adder for Non-Volatile Memory Applications .....</b>	94
<i>N. Sharma, A. Marshall, J. Bird, P. Dowben</i>	
<b>A Multiple-Valued Logic Synthesis Tool for Optical Computing Elements .....</b>	98
<i>K. Smith, M. Thornton</i>	
<b>Author Index</b>	