

2013 IEEE 20th International Conference on Electronics, Circuits, and Systems

(ICECS 2013)

**Abu Dhabi, United Arab Emirates
8-11 December 2013**



IEEE Catalog Number: CFP13773-POD
ISBN: 978-1-4799-2453-0

TABLE OF CONTENTS

Session A1L-A: Analog Circuits I

Chair: Mourad Loulou, *University of Sfax*

Time: December 9, 2013, 11:20 - 13:00

Location: Room 1

| | |
|---|----|
| A 12 Gb/s Standard Cell based ECL 4:1 Serializer with Asynchronous Parallel Interface | 1 |
| <i>Oliver Schrape (IHP), Markus Appel (Humboldt University Berlin), Frank Winkler (Humboldt University Berlin), Miloš Krstić (IHP)</i> | |
| A Pulse Width Controlled PLL and its Automated Design Flow | 5 |
| <i>Norihito Tohge (University of Tokyo), Toru Nakura (University of Tokyo), Tetsuya Iizuka (University of Tokyo), Kunihiro Asada (University of Tokyo)</i> | |
| A Wideband Unity-Gain Buffer in 0.13-μm CMOS | 9 |
| <i>Kamyar Keikhosravy (University of British Columbia), Pouya Kamalinejad (University of British Columbia), Shahriar Mirabbasi (University of British Columbia), Victor Leung (University of British Columbia)</i> | |
| A 5-9 GHz CMOS Ultra-Wideband Power Amplifier Design using Load-Pull | 13 |
| <i>H. Mosalam (Egypt-Japan University of Science and Technology), A. Allam (Egypt-Japan University of Science and Technology), H. Jia (Kyushu University), R. Pokharel (Kyushu University), M. Ragab (Egypt-Japan University of Science and Technology), K. Yoshida (Kyushu University)</i> | |
| Design and Implementation of a 6-GHz Array of Two Differential Oscillators Coupled through a MOS Transistor Network | 17 |
| <i>Dorra Mellouli (University of Poitiers and University of Sfax), Hassene Mnif (University of Sfax), David Cordeau (University of Poitiers), Mourad Loulou (University of Sfax), Jean-Marie Paillot (University of Poitiers)</i> | |

Session A1L-B: Low-Power Circuits

Chair: Ricardo Reis, *Universidade Federal do Rio Grande do Sul*

Time: December 9, 2013, 11:20 - 13:00

Location: Room 2

| | |
|---|----|
| An Efficient Model of the CMOS Inverter for Nanometer Technologies | 21 |
| <i>Orestis Palampougioukis (Aristotle University of Thessaloniki), Spyridon Nikolaidis (Aristotle University of Thessaloniki)</i> | |
| Underlap Engineered Eight-Transistor SRAM Cell for Stronger Data Stability Enhanced Write Ability and Suppressed Leakage Power Consumption | 25 |
| <i>Shairfe Muhammad Salahuddin (Hong Kong University of Science and Technology), Volkan Kursun (Hong Kong University of Science and Technology)</i> | |
| On Schmitt Trigger and Other Inverters | 29 |
| <i>Walid Ibrahim (United Arab Emirates University), Valeriu Beiu (United Arab Emirates University), Mihai Tache (United Arab Emirates University), Fekri Kharbash (United Arab Emirates University)</i> | |

| | |
|--|----|
| Reducing Switching Activity in FIR Filters by Reordering the Coefficients through the use of Improved Heuristic Algorithm | 33 |
| <i>João G.N. Rahmeier (UNIPAMPA), Ângelo G. Luz (SENAC), Eduardo C. Costa (UCPel), Sidinei Ghissoni (UNIPAMPA)</i> | |
| Low-Power Design of Hybrid Digital Impedance Calibration for Process, Voltage, Temperature Compensations | 37 |
| <i>Yuan Fang (Technische Universitaet Darmstadt), Uzair Muhammad (Technische Universitaet Darmstadt), Ashok Jaiswal (Technische Universitaet Darmstadt), Klaus Hofmann (Technische Universitaet Darmstadt)</i> | |

Session A1L-C: Emerging Circuits and Systems

Chair: Valeriu Beiu, *UAEU*

Co-Chair: Lutfi Albasha, *American University in Sharjah*

Time: December 9, 2013, 11:20 - 13:00

Location: Room 3

| | |
|--|----|
| Embedded Memory Design using Memristor: Retention Time versus Write Energy | 41 |
| <i>Yasmin Halawani (Khalifa University of Science), Baker Mohammad (Khalifa University of Science), Dirar Homouz (Khalifa University of Science), Mahmoud Al-Qutayri (Khalifa University of Science), Hani Saleh (Khalifa University of Science)</i> | |

| | |
|--|----|
| Amplitude Characterization of Memristive Devices | 45 |
| <i>João Capela Duarte (University of Aveiro), Ernesto Ventura Martins (University of Aveiro), Luis Nero Alves (University of Aveiro)</i> | |

| | |
|--|----|
| Dual Sided Doped Memristor and it's Mathematical Modelling | 49 |
| <i>Anup Shrivastava (Indian Institute of Information Technology, Design and Manufacturing), Jawar Singh (Indian Institute of Information Technology, Design and Manufacturing)</i> | |

| | |
|---|----|
| Analytical Model to Estimate the Subthreshold Swing of SOI FinFET | 52 |
| <i>Azzedin Es-Sakhi (University of Missouri - Kansas City), Masud H. Chowdhury (University of Missouri - Kansas City)</i> | |

| | |
|--|----|
| Characteristics and Sensitivity Analysis of Gate Inside Junctionless Transistor (GI-JLT) | 56 |
| <i>Pankaj Kumar (Indian Institute of Information Technology, Design and Manufacturing), P.N. Kondekar (Indian Institute of Information Technology, Design and Manufacturing), Sangeeta Singh (Indian Institute of Information Technology, Design and Manufacturing), Ishu Agrawal (Indian Institute of Information Technology, Design and Manufacturing)</i> | |

Session A2P-G: MSc and PhD Forum

Chair: Ahmed Hasan Madian, *German University in Cairo*

Time: December 9, 2013, 11:20 - 13:00

Location: Poster Area

| | |
|---|----|
| Area Efficient 2.4 GHz Relaxation Oscillator with Nanoscale 2D-MOSFETs | 60 |
| <i>Soumyasanta Laha (Ohio University), Savas Kaya (Ohio University)</i> | |

WITHDRAWN

| | |
|--|----|
| Early Detection of Lung Cancer based on Sputum Color Image Analysis | 62 |
| <i>Fatma Taher (Khalifa University)</i> | |

| | |
|--|----|
| Ontology-Based Forensic Analysis of Mobile Devices | 64 |
| <i>Mohammed Alzaabi (Khalifa University of Science, Technology and Research)</i> | |

| | |
|---|----|
| Link Adaptation for Wireless Video Communication Systems | 66 |
| <i>Husameldin Mukhtar (Khalifa University)</i> | |

| | |
|---|----|
| Custom IP Cores for Robust Data Analysis and Pattern Recognition Algorithms used in Gas Applications | 68 |
| <i>Amine Ait Si Ali (University of the West of Scotland and Qatar University), Abbes Amira (University of the West of Scotland), Faycal Bensaali (Qatar University)</i> | |

| | |
|--|-----|
| A Multipurpose Testbed for Full-Duplex Wireless Communications | 70 |
| <i>Pavle Belanovic (École Polytechnique Fédérale de Lausanne), Alexios Balatsoukas-Stimming (École Polytechnique Fédérale de Lausanne), Andreas Burg (École Polytechnique Fédérale de Lausanne)</i> | |
| Efficient Power Management in Wireless Sensor Networks | 72 |
| <i>Yasmin Halawani (Khalifa University), Baker Mohammad (Khalifa University), Mahmoud Al-Qutayri (Khalifa University), Hani Saleh (Khalifa University)</i> | |
| Secure Smart Real Time Freight Tracking System for Radioactive Sources | 74 |
| <i>Mouza Ahmed Bani Shemaili (Khalifa University), WITHDRAWN (Khalifa University), Mohamed Jamal Zemerly (Khalifa University), Khalid Mubarak (Khalifa University)</i> | |
| Video Security Assurance Framework based on Efficient Joint Cryptography Compression Approach | 76 |
| <i>K. Al-Marashda (Khalifa University)</i> | |
| A Summary on Modified Carrier based Real-Time Selective Harmonic Elimination Technique | 78 |
| <i>Sri Nikhil Gupta Gouriseti (University of Arkansas), Hira Patangia (University of Arkansas)</i> | |
| Internet based Bilateral Teleoperation System for Quad-Rotor Flying Vehicles | 80 |
| <i>R.K. Ashour (Khalifa University), S. Islam (University of Ottawa), L.D. Seneviratne (King's College London), J. Dias (University of Coimbra)</i> | |
| Automated Real-Time Video Surveillance Algorithms for SoC Implementation: A Survey | 82 |
| <i>Ehab Salahat (Khalifa University of Science, Technology and Research), Hani Saleh (Khalifa University of Science, Technology and Research), Baker Mohammad (Khalifa University of Science, Technology and Research), Mahmoud Al-Qutayri (Khalifa University of Science, Technology and Research), Andrzej Sluzek (Khalifa University of Science, Technology and Research), Mohammad Ismail (Khalifa University of Science, Technology and Research)</i> | |
| Optimal Cooperative Primary user Localization in Cognitive Radio Networks | 84 |
| <i>Bassant Selim (Khalifa University), Sami Muhaidat (Khalifa University), Nayef Alsindi (Khalifa University), Mohammed Ismail El Naggar (Khalifa University)</i> | |
| Integrated Remote Sensing Image Fusion Framework for Target Detection | 86 |
| <i>Essa Basaeed (Khalifa University of Science, Technology and Research), Artur Łoza (Khalifa University of Science, Technology and Research), Mohammed Al-Mualla (Khalifa University of Science, Technology and Research)</i> | |
| Network-Aware Resource Allocation for Cloud Elastic Applications | 88 |
| <i>Fatima Mohammed Al Qayedi (Khalifa University of Science, Technology and Research), Khaled H. Salah (Khalifa University of Science, Technology and Research), M. Jamal Zemerly (Khalifa University of Science, Technology and Research)</i> | |
| Replacing Stringer Elements in Aircraft Fuselages with Sinusoidal Composite Sandwich Structures | n/a |
| <i>Kasturi Rangan (Khalifa University of Science, Technology and Research), James Wesley Cantwell (Khalifa University of Science, Technology and Research)</i> | |
| File Carving of Fragmented Video Files | 90 |
| <i>Khawla Alghafli (Khalifa University of Science, Technology and Research), WITHDRAWN (Khalifa University), Thomas Anthony Martin (Khalifa University of Science, Technology and Research)</i> | |
| The Revolution of Glucose Monitoring Methods and Systems: A Survey | 92 |
| <i>Nourhan Bayasi (Khalifa University of Science, Technology and Research), Hani Saleh (Khalifa University of Science, Technology and Research), Baker Mohammad (Khalifa University of Science, Technology and Research), Mohammad Ismail (Khalifa University of Science, Technology and Research)</i> | |
| Efficient Non-Coherent Detection Techniques for Broadband Cooperative Networks | 94 |
| <i>Sara Al Maeeni (Khalifa University), Sami Muhaidat (Khalifa University), Ibrahim Abualhaol (Khalifa University)</i> | |

| | |
|--|-----|
| Towards Collaborative Support System for Teamwork between Robots and Human in Hazard Incidents | 96 |
| <i>H. Al-Tair (Khalifa University), J. Dias (Khalifa University), M. Al-Qutayri (Khalifa University)</i> | |
| Survey of Wireless Baseband SoC for Biomedical Application | 98 |
| <i>Temesghen Tekeste (Khalifa University), Hani Saleh (Khalifa University), Baker Mohammad (Khalifa University), Mahmoud Al-Qutayri (Khalifa University), Mohammad Ismail (Khalifa University)</i> | |
| Theorem Proving Verification of Privacy in WBSN for Healthcare Systems | 100 |
| <i>Hussam M.N. Al Hamadi (Khalifa University), A. Gawanmeh (Khalifa University), M.A. Al-Qutayri (Khalifa University)</i> | |
| Visual Analytics in the Web of Data | 102 |
| <i>Maryam Al Shehhi (Khalifa University), Marcello Leida (Khalifa University), Benjamin Hirsch (Khalifa University), Paul D. Yoo (Khalifa University), Kamal Taha (Khalifa University)</i> | |
| High Performance 4H-SiC Emitter Coupled Logic Circuits | 104 |
| <i>Hazem Elgabra (Khalifa University of Science, Technology and Research), Shakti Singh (Khalifa University of Science, Technology and Research)</i> | |
| Device-to-Device Communication Underlying Cellular Communications Systems | V/' |
| <i>Rawan Alkurd (Khalifa University)</i> | |
| Mapping for Unknown Environment using Incremental Triangulation | 106 |
| <i>Amna Al Dahak (Khalifa University), Lakmal Seneviratne (Khalifa University)</i> | |

Session A2P-H: Advances in Test and Reliability

Chair: Zebo Peng, *Linkoping University*

Time: December 9, 2013, 11:20 - 13:00

Location: Poster Area

| | |
|---|-----|
| X-Aware Verification: A Different Perspective! | 108 |
| <i>Khaled Nouh (Mentor Graphics Corporation), Haytham Saafan (Mentor Graphics Corporation), Ahmed Ismail (Mentor Graphics Corporation)</i> | |
| Design and Construction of a Low Cost Single-Phase Induction Motor Test Bench | 113 |
| <i>A.A. Adly (Cairo University), O.A. Mahgoub (Cairo University), S.K. Abd-El-Hafiz (Cairo University)</i> | |
| Redundant Circuits with Latchup Protection | 117 |
| <i>V. Petrović (IHP), G. Schoof (IHP), Z. Stamenković (IHP)</i> | |
| Single Event Transient Mitigation through Pulse Quenching: Effectiveness at Circuit Level | 121 |
| <i>Samuel N. Pagliarini (Télécom ParisTech), Lirida A. de B. Naviner (Télécom ParisTech), Jean-François Naviner (Télécom ParisTech)</i> | |
| Combining Fault Tolerance and Serialization Effort to Improve Yield in 3D Networks-on-Chip | 125 |
| <i>Anelise Kologeski (Universidade Federal do Rio Grande do Sul), Caroline Concatto (Universidade Federal do Rio Grande do Sul), Débora Matos (Universidade Federal do Rio Grande do Sul), Daniel Grehs (Universidade Federal do Rio Grande do Sul), Tiago Motta (Universidade Federal do Rio Grande do Sul), Felipe Almeida (Universidade Federal do Rio Grande do Sul), Fernanda Lima Kastensmidt (Universidade Federal do Rio Grande do Sul), Altamiro Susin (Universidade Federal do Rio Grande do Sul), Ricardo Reis (Universidade Federal do Rio Grande do Sul)</i> | |

Session A2P-J: Amplifiers and Filters

Chair: Eric Kerhervé, *University of Bordeaux*

Time: December 9, 2013, 11:20 - 13:00

Location: Poster Area

- Filter Design with Simultaneous Magnitude and Phase Specifications** 129
Sidnei Noceti Filho (Federal University of Santa Catarina), *Ciro André Pitz (Federal University of Santa Catarina),* *Aurencio Sanczczak Farias (Federal University of Santa Catarina)*
- Delayed Feedback Amplifiers with Maximum Flat Group Delay** 133
Dinka Milovančev (University of Aveiro), *Luis Nero Alves (University of Aveiro)*
- A 0.5-V 85-nW Rail-to-Rail Operational Amplifier with a Cross-Coupled Output Stage** 137
Akihiro Tanaka (Saitama Institute of Technology), *Zhigang Qin (Saitama Institute of Technology),* *Hirokazu Yoshizawa (Saitama Institute of Technology)*

Session A3L-A: Data Converters I

Chair: Hervé Barthelemy, *IM2NP*

Time: December 9, 2013, 14:10 - 15:50

Location: Room 1

- A Portable Redundancy Algorithm for Capacitive/Resistive SAR A/D Converters** 141
Marco Zamprognio (ST-Ericsson), *Alberto Minuti (ST-Ericsson),* *Francesca Girardi (ST-Ericsson),* *Daniele Devecchi (ST-Ericsson),* *Germano Nicollini (ST-Ericsson)*
- A Compensation Technique for SAR ADC Comparator Noise** 145
Xiao Liu (École Polytechnique Fédérale de Lausanne), *Catherine Dehollain (École Polytechnique Fédérale de Lausanne)*
- Highly-Linear Voltage-to-Time Converter (VTC) Circuit for Time-Based Analog-to-Digital Converters (T-ADCs)** 149
Hassan Mostafa (Cairo University and American University in Cairo), *Yehea I. Ismail (American University in Cairo)*
- A Fast Two-Step Coarse-Fine Calibration (CFC) Technique for Precision Comparator Design** 153
Islam T. Abougindia (University of Idaho), *Ismail Cevik (University of Idaho),* *Suat U. Ay (University of Idaho),* *Fadi Nessir Zghoul (Jordan University of Science and Technology)*
- A Programmable 8-Bit, 10MHz BW, 6.8mW, 200MSample/Sec, 70dB SNDR VCO-Based ADC using SC Feedback for VCO Linearization** 157
Waleed El-Halwagy (Ain Shams University and Misr International University), *Mohammed Dessouky (Ain Shams University and Mentor Graphics Corp.),* *Hassan El-Ghitani (Misr International University)*

Session A3L-B: Video Systems: Hardware and Coding

Chair: Andrzej Sluzek, *Khalifa University UAE*

Time: December 9, 2013, 14:10 - 15:50

Location: Room 2

- High Throughput Hardware Design for the HEVC Fractional Motion Estimation Interpolation Unit** 161
Henrique Maich (Federal University of Pelotas), *Vladimir Afonso (Federal University of Pelotas and Sul-rio-grandense Federal Institute),* *Denis Franco (Federal University of Pelotas),* *Bruno Zatt (Federal University of Pelotas),* *Marcelo Porto (Federal University of Pelotas),* *Luciano Agostini (Federal University of Pelotas)*
- Inter-View Prediction of Coding Tree Depth for HEVC-Based Multiview Video Coding** 165
Thaísa Leal da Silva (University of Coimbra), *Luis A. da Silva Cruz (University of Coimbra),* *Luciano V. Agostini (Federal University of Pelotas)*

| | |
|---|-----|
| Hardware-Oriented Stereo Vision Algorithm based on 1-D Guided Filtering and its FPGA Implementation | 169 |
| <i>Katsuki Ohata (Keio University), Yuki Sanada (Hokkaido University), Tetsuro Ogaki (Keio University), Kento Matsuyama (Hokkaido University), Takanori Ohira (Hokkaido University), Satoshi Chikuda (Hokkaido University), Masaki Igarashi (Hokkaido University), Masayuki Ikebe (Hokkaido University), Tetsuya Asai (Hokkaido University), Masato Motomura (Hokkaido University), Tadahiro Kuroda (Keio University)</i> | |

| | |
|---|-----|
| High Performance Median FPGA Implementation for Machine Vision Applications | 173 |
| <i>Calliope-Louisa Sotiropoulou (Aristotle University of Thessaloniki), Christos Gentsos (Aristotle University of Thessaloniki), Spyridon Nikolaidis (Aristotle University of Thessaloniki)</i> | |

| | |
|---|-----|
| Realizing Hardware Accelerated AVS Video Playback on the Godson Platform | 177 |
| <i>Shuangshuang Zhang (Chinese Academy of Sciences), Zhenya Fan (Chinese Academy of Sciences), Liwei Chen (Chinese Academy of Sciences and Loongson Technology Corp. Ltd.), Cheng Qian (Chinese Academy of Sciences and Loongson Technology Corp. Ltd.), Xiang Gao (Chinese Academy of Sciences and Loongson Technology Corp. Ltd.)</i> | |

Session A3L-C: Sensing and Sensor Networks

Chair: Mounir Boukadoum, *University of Quebec*

Time: December 9, 2013, 14:10 - 15:50

Location: Room 3

| | |
|---|-----|
| All Digital On-Chip Temperature Sensor using Dual Ring Oscillators | 181 |
| <i>Jiwoong Jang (Korea University), Jinse Kim (Korea University), Reum Oh (Korea University), Man Young Sung (Korea University)</i> | |

| | |
|---|-----|
| Robust Control of Oscillating NEMS Sensors | 185 |
| <i>Christian Kauth (École Polytechnique Fédérale de Lausanne), Marc Pastre (École Polytechnique Fédérale de Lausanne), Maher Kayal (École Polytechnique Fédérale de Lausanne)</i> | |

| | |
|---|-----|
| Investigation of a Hybrid Localization Technique using Received Signal Strength and Direction of Arrival | 189 |
| <i>A.R. Kulaib (Khalifa University), R.M. Shubair (Khalifa University), M.A. Al-Qutayri (Khalifa University), Jason W.P. Ng (Etisalat BT Innovation Centre)</i> | |

| | |
|--|-----|
| Object Shape Perception in Blind Robot Grasping using a Wrist Force/Torque Sensor | 193 |
| <i>Hussam Al Hussein (Khalifa University of Science, Technology and Research), Tiago Caldeira (Khalifa University of Science, Technology and Research), Dongming Gan (Khalifa University of Science, Technology and Research), Jorge Manuel Miranda Dias (University of Coimbra), Lakmal Seneviratne (King's College London)</i> | |

Session A3L-D: Wireless Communications Systems

Chair: Raed M. Shubair, *KUSTAR*

Time: December 9, 2013, 14:10 - 15:50

Location: Room 4

| | |
|--|-----|
| Non-Coherent Detection for Cooperative OFDM-Based System Over Time-Varying Fading Channels | 197 |
| <i>Sara Al Maeeni (Khalifa University), Sami Muhaidat (Khalifa University), Ibrahim Abualhaol (Khalifa University)</i> | |

| | |
|---|-----|
| Error Rate Performance Analysis of Cooperative MRC Receivers Over Generalized Fading Channels | 201 |
| <i>Rawan Alkurd (Khalifa University of Science, Technology and Research), Raed. M. Shubair (Khalifa University of Science, Technology and Research), Ibrahim Abualhaol (Khalifa University of Science, Technology and Research)</i> | |

| | |
|---|-----|
| Performance and EXIT Chart Analysis of BICM-ID for Physical Layer Network Coding | 205 |
| <i>Alaa A.S. Al-Rubaie (Newcastle University), C.C. Tsimenidis (Newcastle University), M. Johnston (Newcastle University), B. Sharif (Khalifa University)</i> | |

| | |
|--|-----|
| Optimized Resource Allocation Strategy for a Single-Cell Downlink AMC-OFDMA Systems | 209 |
| <i>Muayad S. Al-Janabi (University of Technology), Charalampos C. Tsimenidis (Newcastle University), Bayan S. Sharif (Newcastle University and Khalifa University), Stéphane Y. Le Goff (Newcastle University)</i> | |

| | |
|---|-----|
| COTS based Multichannel FM Receiver and Recorder using SDR Concept | 213 |
| <i>Rizwana Shaher Bano (National University of Computer and Emerging Sciences), Rashad Ramzan (United Arab Emirates University)</i> | |

Session A3L-E: Nonlinear Systems, Maps and Networks

Chair: Alberto Oliveri, *University of Genoa*

Time: December 9, 2013, 14:10 - 15:50

Location: Room 5

| | |
|--|-----|
| An Algorithm for Automatic Domain Partitioning of Piecewise-Affine Model Predictive Control Laws | 217 |
| <i>Alberto Oliveri (University of Genoa), Alessio Canepa (University of Genoa), Leonardo Queirolo (University of Genoa), Marco Storace (University of Genoa)</i> | |

| | |
|---|-----|
| The Multi 2D Systolic Design and Implementation of Convolutional Neural Networks | 221 |
| <i>Shefa A. Dawwd (University of Mosul)</i> | |

| | |
|--|-----|
| MCDM Method based on Improved Fuzzy Decision Map | 225 |
| <i>Basem Mohamed Elomda (Central Laboratory for Agricultural Expert Systems, ARC), Hesham Ahmed Hefny (Cairo University), Hesham Ahmed Hassan (Cairo University)</i> | |

| | |
|---|-----|
| Pairing Frequency Experiments in Visual Cortex Reproduced in a Neuromorphic STDP Circuit | 229 |
| <i>Mostafa Rahimi Azghadi (University of Adelaide), Said Al-Sarawi (University of Adelaide), Derek Abbott (University of Adelaide), Nicolangelo Iannella (University of Adelaide)</i> | |

| | |
|---|-----|
| Intelligent Computational Technique with CGA Approach for Optimal Solutions | 233 |
| <i>Othman M.K. Alsmadi (University of Jordan), Zaer S. Abo-Hammoud (University of Jordan), Adnan M. Al-Smadi (Yarmouk University)</i> | |

Session A4L-A: Bioengineering Circuits and Systems I

Chair: Mohamad Sawan, *Polytechnique Montreal*

Time: December 9, 2013, 16:10 - 17:50

Location: Room 1

| | |
|---|-----|
| Dimensionality Reduction using Asynchronous Sampling of First Derivative Features for Real-Time and Computationally Efficient Neural Spike Sorting | 237 |
| <i>Majid Zamani (University College London), Andreas Demosthenous (University College London)</i> | |

| | |
|--|-----|
| Suitable Compensation Circuits for On-Chip Interference Reduction in Neural Tripolar Recordings | 241 |
| <i>Clemens Eder (University College London), Syeda Sabeeka Zehra (University College London), Majid Zamani (University College London), Andreas Demosthenous (University College London)</i> | |

| | |
|---|-----|
| Resistorless BiCMOS Voltage Reference with Isolated Substrate Potential for Biomedical Implants | 245 |
| <i>Christian Brendler (University of Ulm), Naser Pour Aryan (University of Ulm), Viola Rieger (University of Ulm), Albrecht Rothermel (University of Ulm)</i> | |

| | |
|---|-----|
| CMOS Analog Power Meter and Delay Line for Automatic Efficiency Optimization in Medical Power Transmitters | 249 |
| <i>Virgilio Valente (University College London), Andreas Demosthenous (University College London)</i> | |

| | |
|--|-----|
| Wavelet Compression Inspired Implementation for High Performances and Low Complexity ECG Removal in Wireless sEMG Electrodes | 253 |
| <i>Mohamed El Fares Djellatou (Université du Québec à Trois-Rivières), Daniel Massicotte (Université du Québec à Trois-Rivières), Mounir Boukadoum (Université du Québec à Montréal)</i> | |

Session A4L-B: DSP Algorithms and Multimedia Systems

Chair: Thomas Rauber, *Universidade Federal do Espírito Santo*

Time: December 9, 2013, 16:10 - 17:50

Location: Room 2

| | |
|--|-----|
| Correlation Tuning in Compressive Sensing based on Rakeness: A Case Study | 257 |
| <i>Nicola Bertoni (University of Ferrara), Mauro Mangia (University of Bologna), Fabio Pareschi (University of Ferrara), Riccardo Rovatti (University of Bologna), Gianluca Setti (University of Ferrara)</i> | |
| An Improved Particle Swarm Optimization Algorithm for FIR Filter Design | 261 |
| <i>Xia Yuanhai (King Fahd University of Petroleum and Minerals)</i> | |
| Feature Models and Condition Visualization for Rotating Machinery Fault Diagnosis | 265 |
| <i>Thomas W. Rauber (Universidade Federal do Espírito Santo), Francisco de Assis Boldt (Universidade Federal do Espírito Santo), Flávio M. Varejão (Universidade Federal do Espírito Santo), Marcos Pellegrini Ribeiro (Petróleo Brasileiro S.A. - Petrobras, CENPES/PDP/TE)</i> | |
| Affine-Invariant Description of Keypoint Bundles for Detecting Partial Near-Duplicates in Random Images | 269 |
| <i>Andrzej Sluzek (Khalifa University)</i> | |
| Multiresolution Convolutional Blind Source Separation using Adaptive Lifting Scheme | 273 |
| <i>Jamel Hattay (University of Monastir), Samir Belaid (University of Monastir), Wady Naanaa (University of Monastir)</i> | |

Session A4L-C: Process Variations

Chair: Ricardo Reis, *Universidade Federal do Rio Grande do Sul*

Time: December 9, 2013, 16:10 - 17:50

Location: Room 3

| | |
|--|-----|
| Negative Capacitance Circuits for Process Variations Compensation and Timing Yield Improvement | 277 |
| <i>Hassan Mostafa (Cairo University and American University in Cairo), Mohab Anis (American University of Cairo), Mohamed Elmasry (University of Waterloo)</i> | |
| Current Source based Standard-Cell Model for Accurate Timing Analysis of Combinational Logic Cells | 281 |
| <i>Mohamed Mahmoud (Nile University), Amr Wassal (Nile University), Alaa El-Rouby (Mentor Graphics Corporation), Rafik Guindi (Nile University)</i> | |
| Adaptive Data Model for Efficient Constraint Handling in AMS IC Design | 285 |
| <i>Andreas Krinke (Dresden University of Technology), Goeran Jerke (Robert Bosch GmbH), Jens Lienig (Dresden University of Technology)</i> | |
| New Hybrid Battery Model that takes into Account both Electric Circuit Characteristics and Non-Linear Battery Properties | 289 |
| <i>Naglaa El Agroudi (American University in Cairo), Yehea Ismail (American University in Cairo)</i> | |
| Variability Mitigation using Correction Function Technique | 293 |
| <i>Shady Agwa (American University in Cairo), Eslam Yahya (American University in Cairo and Benha University), Yehea Ismail (American University in Cairo)</i> | |

Session A4L-D: Memristive Devices and Systems

Chair: Georgios Ch Sirakoulis, *University of Thrace*

Co-Chair: Eero Lehtonen, *University of Turku, Finland*

Time: December 9, 2013, 16:10 - 17:50

Location: Room 4

| | |
|--|-----|
| Is Spiking Logic the Route to Memristor-Based Computers? | 297 |
| <i>Ella Gale (University of the West of England), Ben de Lacy Costello (University of the West of England), Andrew Adamatzky (University of the West of England)</i> | |
| Ideal Memristors as Reciprocal Elements | 301 |
| <i>Panayiotis S. Georgiou (Imperial College London), Mauricio Barahona (Imperial College London), Sophia N. Yaliraki (Imperial College London), Emmanuel M. Drakakis (Imperial College London)</i> | |
| Organic Memristive Devices: Architecture, Properties and Applications in Neuromorphic Networks | 305 |
| <i>Victor Erokhin (Università degli Studi di Parma)</i> | |
| On the Analog Computational Characteristics of Memristive Networks | 309 |
| <i>Ioannis Vourkas (Democritus University of Thrace), Georgios Ch. Sirakoulis (Democritus University of Thrace)</i> | |
| Memristive Realization of a Bipolar Memcapacitor | V ° |
| <i>Eero Lehtonen (University of Turku), Jacek Flak (VTT), Jussi Poikonen (University of Turku), Mika Laiho (University of Turku), Mika Prunnila (VTT), Jonne Poikonen (University of Turku)</i> | |

Session A4L-E: Real-Time Algorithms and Reconfigurable Architectures

Chair: Naeem Ramzan, *University of West of Scotland*

Co-Chair: Abbes Amira, *University of the West of Scotland*

Time: December 9, 2013, 16:10 - 17:50

Location: Room 5

| | |
|--|-----|
| MeshCloud: Integrated Cloudlet and Wireless Mesh Network for Real-Time Applications | 317 |
| <i>Kashif A. Khan (University of the West of Scotland), Qi Wang (University of the West of Scotland), Christos Grecos (University of the West of Scotland), Chunbo Luo (University of the West of Scotland), Xinheng Wang (University of the West of Scotland)</i> | |
| Evaluation of SVC for Adaptive P2P Video Streaming | 321 |
| <i>Naeem Ramzan (University of the West of Scotland), Abbes Amira (University of the West of Scotland), Christos Grecos (University of the West of Scotland)</i> | |
| Automatic Number Plate Recognition on FPGA | 325 |
| <i>Xiaojun Zhai (University of Essex), Faycal Bensaali (Qatar University), Klaus McDonald-Maier (University of Essex)</i> | |
| Modeling and FPGA Implementation of Reconfigurable Transcoder for Real Time Video Adaptation | 329 |
| <i>Eric Dabellani (University of Lorraine), Hassan Rabah (University of Lorraine), Nicolas Marques (University of Lorraine), Yves Berviller (University of Lorraine), Slavisa Jovanovic (University of Lorraine), Serge Weber (University of Lorraine)</i> | |
| QoE Assessment for SVC Live Distribution and Adaptation: ENVISION Case Study | 333 |
| <i>Abbas Bradai (University of Bordeaux-1), Toufik Ahmed (University of Bordeaux-1), Samir Medjiah (University of Bordeaux-1)</i> | |

Keynote Speaker

Time: December 10, 2013, 9:00 - 10:00

Location: Room 1

Analog Design Procedures for Channel Lengths Down to 20 nm 337
Willy Sansen (K.U. Leuven)

Session B1L-A: Analog Circuits II

Chair: Mourad Loulou, *University of Sfax*

Time: December 10, 2013, 10:00 - 11:40

Location: Room 1

A 470 μ A Direct Readout Circuit for Electret and MEMS Digital Microphones 341
Andrea Barbieri (ST-Ericsson), Germano Nicollini (ST-Ericsson)

Ultra Low-Power Low-Noise Transimpedance Amplifier for MEMS-Based Reference Oscillators 345
*Rania H. Mekky (McGill University), Paul-Vahe Cicek (McGill University),
Mourad N. El-Gamal (McGill University)*

A 3 μ W 500 kb/s Ultra Low Power Analog Decoder with Digital I/O in 65 nm CMOS 349
*Reza Meraji (Lund University), John B. Anderson (Lund University), Henrik Sjöland (Lund University),
Viktor Öwall (Lund University)*

Design of an On-Chip Linear-Assisted DC-DC Voltage Regulator 353
*Jordi Cosp-Vilella (Technical University of Catalonia - BarcelonaTech),
Herminio Martínez-García (Technical University of Catalonia - BarcelonaTech)*

Generic Integrated Circuit for Signal Conditioning 357
*Cleber Almeida (SENAI CIMATEC), Andrea Barretto (SENAI CIMATEC), Luciano de Lacerda (SENAI CIMATEC),
Rodrigo Tutu (SENAI CIMATEC), Valmiro Galvis (SENAI CIMATEC), Júlio Aguiar (SENAI CIMATEC),
João Souza (SENAI CIMATEC)*

Session B1L-B: Low-Power Architectures II

Chair: Thanos Stouraitis, *University of Patras*

Time: December 10, 2013, 10:00 - 11:40

Location: Room 2

Asynchronous High Throughput NoC Under High Process Variation 361
*Rabab Ezz-Eldin (Bani-suef University), Magdy A. El-Moursy (Mentor Graphics Corporation),
Hesham F.A. Hamed (Minia University)*

An Ant Colony Metaheuristic for Energy Aware Application Mapping on NoCs 365
*Max Farias (Universidade Federal de Pernambuco), Edna Barros (Universidade Federal de Pernambuco),
Abel Filho (Universidade Federal de Pernambuco), André Araújo (Universidade Federal de Pernambuco),
André Silva (Universidade Federal de Pernambuco), João Melo (Universidade Federal de Pernambuco)*

FPGA Implementation of AES-Based Crypto Processor 369
*Hassan Anwar (University of Turku), Masoud Daneshtalab (University of Turku), Masoumeh Ebrahimi (University
of Turku), Juha Plosila (University of Turku), Hannu Tenhunen (University of Turku)*

On the Short-Term Predictability of Fully Digital Chaotic Oscillators for Pseudo-Random Number Generation 373
*A.G. Radwan (Cairo University), Abhinav S. Mansingka (King Abdullah University of Science and Technology),
M. Affan Zidan (King Abdullah University of Science and Technology), K.N. Salama (King Abdullah
University of Science and Technology)*

| | |
|---|-----|
| Transmitter Equalizer Training based on Pilot Signal and Peak Detection | 377 |
| <i>Yuan Fang (Technische Universitaet Darmstadt), Ling Chen (Technische Universitaet Darmstadt), Ashok Jaiswal (Technische Universitaet Darmstadt), Klaus Hofmann (Technische Universitaet Darmstadt)</i> | |

Session B1L-C: Renewable Energy Systems and Harvesting

Chair: Valeriu Beiu, *UAEU*

Co-Chair: Fekri Kharbash, *UAEU*

Time: December 10, 2013, 10:00 - 11:40

Location: Room 3

| | |
|---|-----|
| A Survey of Thermal Energy Harvesting Techniques and Interface Circuitry | 381 |
|---|-----|

Mohammad Alhawari (Khalifa University of Science, Technology and Research), Baker Mohammad (Khalifa University of Science, Technology and Research), Hani Saleh (Khalifa University of Science, Technology and Research), Mohammed Ismail (Khalifa University of Science, Technology and Research)

| | |
|--|-----|
| An Efficient Boost Converter Control for Thermoelectric Energy Harvesting | 385 |
|--|-----|

Janko Katic (KTH Royal Institute of Technology), Saul Rodriguez (KTH Royal Institute of Technology), Ana Rusu (KTH Royal Institute of Technology)

| | |
|---|-----|
| VHDL Implementation of Maximum Power Point Tracking Algorithms | 389 |
|---|-----|

Ahmed A. Rezk (American University in Cairo), Amr Helmy (American University in Cairo), Ahmed Abdallah (American University in Cairo), Yehea Ismail (American University in Cairo)

| | |
|---|-----|
| Voltage Boosters for On-Chip Solar Cells on Focal-Plane Processors | 393 |
|---|-----|

V.M. Brea (University of Santiago de Compostela), M. Suárez (University of Santiago de Compostela), J. Illade-Quinteiro (University of Santiago de Compostela), P. López (University of Santiago de Compostela), D. Cabello (University of Santiago de Compostela), G. Doménech-Asensi (Universidad Politécnica de Cartagena)

| | |
|--|-----|
| TPQA: Three Point Quadrature Approximation MPPT Algorithm | 397 |
|--|-----|

Ahmad M. Marzouk (American University in Cairo), Ahmed A. Abdelmoaty (American University in Cairo), Amr Helmy (American University in Cairo), Yehea Ismail (American University in Cairo)

Session B1L-D: Test and Reliability

Chair: Lirida Naviner, *Telecom ParisTech*

Time: December 10, 2013, 10:00 - 11:40

Location: Room 4

| | |
|--|-----|
| Enhancing Dictionary based Test Data Compression using the ATE Repeat Instruction | 401 |
|--|-----|

Panagiotis Sismanoglou (University of Patras), Dimitris Nikolos (University of Patras)

| | |
|--|-----|
| Temperature-Gradient based Test Scheduling for 3D Stacked ICs | 405 |
|--|-----|

Nima Aghaee (Linkoping University), Zebo Peng (Linkoping University), Petru Eles (Linkoping University)

| | |
|---|-----|
| Using Body Bias when Upsizing Length for Maximizing the Static Noise Margins of CMOS Gates | 409 |
|---|-----|

Fekri Kharbash (United Arab Emirates University), Valeriu Beiu (United Arab Emirates University), Mihai Tache (United Arab Emirates University), Walid Ibrahim (United Arab Emirates University)

| | |
|--|-----|
| Impact of Transistor Aging on RF Low Noise Amplifier Performance of 28nm Technology: Reliability Assessment | 413 |
|--|-----|

Swaraj Mahato (Katholieke Universiteit Leuven), Georges Gielen (Katholieke Universiteit Leuven)

| | |
|--|-----|
| An SRAM based Testing Methodology for Yield Analysis of Semiconductor ICs | 417 |
|--|-----|

Jannah Al-Hashimi (Princess Sumaya University for Technology), Seepsa Tomoq (Princess Sumaya University for Technology), Khaldoun Abugharbieh (Princess Sumaya University for Technology), Yazan Al-Qudah (Princess Sumaya University for Technology), Mustafa Shihadeh (Princess Sumaya University for Technology)

Session B1L-E: Signal Processing for Biometric and Security Applications

Chair: Andrzej Sluzek, *Khalifa University UAE*

Time: December 10, 2013, 10:00 - 11:40

Location: Room 5

- Multimodal Biometric Systems by Fusion of Palmprint and Finger-Knuckle-Print using Hidden Markov Model** 421
Abdallah Meraoumia (Université Kasdi Merbah Ouargla), Salim Chitroub (University of Sciences and Technology Houari Boumediene), Ahmed Bouridane (Northumbria University)
- Interpolation of Low Resolution Images for Improved Accuracy in Human Face Recognition** 425
Abbas Elazhari (University of Windsor), Majid Ahmadi (University of Windsor)
- A New Multi Watermarking Algorithm based on DWT and Hash Functions for Color Satellite Images** 429
Alavi Kunhu (Khalifa University of Science), Hussain Al-Ahmad (Khalifa University of Science)
- The IP Core Design of Eye States Recognition based on EHMM** 433
Huabiao Qin (South China University of Technology), Ximin Tong (South China University of Technology), Ronghua Chen (South China University of Technology)

Session B2P-G: Data Converters II

Chair: Ahmed Hasan Madian, *German University in Cairo*

Time: December 10, 2013, 12:00 - 13:00

Location: Poster Area

- A 40-nm CMOS, 1.1-V, 101-dB DR, 1.7-mW Continuous-Time $\Sigma\Delta$ ADC for a Digital Closed-Loop Class-D Amplifier** 437
Achille Donida (University of Pavia), Piero Malcovati (University of Pavia), Angelo Nagari (ST-Ericsson), Rémy Cellier (University of Lyon), Andrea Baschiroto (University of Milano-Bicocca)
- Design of a Current Steering DAC for a High Speed Current Mode SAR ADC** 441
Abdelrahman Elkafrawy (University of Ulm), Jens Anders (University of Ulm), Timon Brückner (University of Ulm), Maurits Ortmanns (University of Ulm)
- Low-Noise CMOS Analog-to-Digital Interface for MEMS Resistive Microphone** 445
J. Nebhen (Aix-Marseille University), E. Savary (Aix-Marseille University), W. Rahajandraibe (Aix-Marseille University), C. Dufaza (Aix-Marseille University), S. Meillère (Aix-Marseille University), F. Haddad (Aix-Marseille University), E. Kussener (Aix-Marseille University), H. Barthélémy (Aix-Marseille University), J. Czarny (CEA-LETI), A. Walther (CEA-LETI)
- A Monolithic 12-Bit Digitally Calibrated D/A Converter** 449
Hong Liu (Chinese Academy of Sciences), Ning Tang (47th Research Institute of China Electronics Technology Group Corporation), Mingliang Wang (Chinese Academy of Sciences), Zhao Xia (Chinese Academy of Sciences), Ke Zhang (Chinese Academy of Sciences), Tian Tong (Chinese Academy of Sciences)
- Design of a Rail-to-Rail 460 kS/s 10-Bit SAR ADC for Capacitive Sensor Interface** 453
Shenjie Wang (École Polytechnique Fédérale de Lausanne), Catherine Dehollain (École Polytechnique Fédérale de Lausanne)

Session B2P-H: Bioengineering Circuits and Systems II

Chair: Ahmed Abdelgawad, *Central Michigan University*

Time: December 10, 2013, 12:00 - 13:00

Location: Poster Area

- A 10-Bit Current-Steering D/A Converter for Active Pixel Sensor Control** 457
Viola Rieger (University of Ulm), Christian Brendler (University of Ulm), Naser Pour Aryan (University of Ulm), Albrecht Rothermel (University of Ulm)

Design and Comparison of Class-C and Class-D Power Amplifiers for Remotely Powered Systems 461
Enver G. Kilinc (École Polytechnique Fédérale de Lausanne), Kerim Ture (École Polytechnique Fédérale de Lausanne), Franco Maloberti (Università degli Studi di Pavia), Catherine Dehollain (École Polytechnique Fédérale de Lausanne)

Wireless Power Delivery for a Biomedical Retinal Prosthesis 465
Christian Brendler (University of Ulm), Naser Pour Aryan (University of Ulm), Viola Rieger (University of Ulm), Albrecht Rothermel (University of Ulm)

A Dedicated Electrode Driving ASIC for Epidural Spinal Cord Stimulation in Rats 469
Vasiliki Giagka (University College London), Clemens Eder (University College London), Virgilio Valente (University College London), Anne Vanhoostenberghe (University College London), Nick Donaldson (University College London), Andreas Demosthenous (University College London)

Session B2P-J: Digital Signal Processing

Chair: Naeem Ramzan, *University of West of Scotland*

Time: December 10, 2013, 12:00 - 13:00

Location: Poster Area

FPGA Implementation of a Parameterized Fourier Synthesizer 473
R. Yang (ENSTA Bretagne), J.G. Wang (Ocean University of China), B. Clement (ENSTA Bretagne), A. Mansour (ENSTA Bretagne)

Computational Intelligence for Automatic Diagnosis of Submersible Motor Pump Conditions in Offshore Oil Exploration 477
Thomas W. Rauber (Universidade Federal do Espírito Santo), Francisco de Assis Boldt (Universidade Federal do Espírito Santo), Flávio M. Varejão (Universidade Federal do Espírito Santo), Marcos Pellegrini Ribeiro (Petróleo Brasileiro S.A. - Petrobras, CENPES/PDP/TE)

Adaptive Multichannel LMS Signal Decoupling 481
Tarek I. Haweel (Majmaah University), Mohammad T. Haweel (Egyptian Russian University) **WITHDRAWN**

Session B2P-K: VLSI Systems, Applications and Computer-Aided Design

Chair: Ashraf Salem, *Mentor*

Time: December 10, 2013, 12:00 - 13:00

Location: Poster Area

MogaMap: An Application of Multi-Objective Genetic Algorithm for LUT-Based FPGA Technology Mapping 485
V.L. Souza (Federal University of Pernambuco), A.G. Silva-Filho (Federal University of Pernambuco)

Multi-Level MPSoC Modeling for Reducing Software Development Cycle 489
Marcelo G. Mandelli (Pontifícia Universidade Católica do Rio Grande do Sul), Felipe R. da Rosa (Universidade Federal do Rio Grande do Sul), Luciano Ost (Laboratoire d'Informatique, de Robotique et de Microélectronique de Montpellier), Gilles Sassatelli (Laboratoire d'Informatique, de Robotique et de Microélectronique de Montpellier), Fernando G. Moraes (Pontifícia Universidade Católica do Rio Grande do Sul)

An FPGA Implementation of NIST 256 Prime Field ECC Processor 493
H. Marzouqi (Khalifa University), M. Al-Qutayri (Khalifa University), K. Salah (Khalifa University)

1-to-Many and Many-to-1 Communication in Hybrid Wireless Network-on-Chip 497
Tao Jin (Nanjing University), Shuai Wang (Nanjing University)

Distributed Arithmetic Architecture of Discrete Wavelet Transform (DWT) with Hybrid Method 501
Noor Huda Ja'afar (Universiti Tun Hussein Onn Malaysia), Afandi Ahmad (Universiti Tun Hussein Onn Malaysia), Abbes Amira (University of the West of Scotland)

Session B2P-L: Sensing and Control

Chair: Mounir Boukadoum, *University of Quebec*

Time: December 10, 2013, 12:00 - 13:00

Location: Poster Area

| | |
|---|-----|
| Simulated Analysis and Hardware Implementation of Voiceband Circular Microphone Array | 508 |
| <i>M. Sami Zitouni (Khalifa University of Science, Technology and Research), M. Luai Hammadih (Khalifa University of Science, Technology and Research), Abdulla Al Shehhi (Khalifa University of Science, Technology and Research), Saif Al Kindi (Khalifa University of Science, Technology and Research), Nazar Ali (Khalifa University of Science, Technology and Research), Luis Weruaga (Khalifa University of Science, Technology and Research)</i> | |
| Controlling a VTOL in 2-DOF Subspaces | 512 |
| <i>Aydin Yesildirek (American University of Sharjah), Bahgat Elmaghrabi (American University of Sharjah)</i> WITHDRAWN | |
| Feedback Control of Membrane Displacement in RF-MEMS Switches | 516 |
| <i>Omar Awad (American University of Sharjah), A.H. El Sinawi (American University of Sharjah), Maher Bakri-Kassem (American University of Sharjah), Taha Landolsi (American University of Sharjah)</i> | |
| Comparison between Open-Loop and Closed-Loop Accelerometers | 520 |
| <i>AbdulRahman Akkawi (Petroleum Institute), Muhamad Alkhatib (Petroleum Institute), Ali Hakam (Khalifa University), Ehab Salahat (Khalifa University)</i> WITHDRAWN | |
| Nanotips Characterization, Modeling and Simulation | 523 |
| <i>Ahmed Ali (Khalifa University of Science Technology & Research), Moh'd Rezeq (Khalifa University of Science Technology & Research), Hassan Barada (Khalifa University of Science Technology & Research)</i> | |

Session B2P-M: Biomedical Devices and Algorithms

Chair: Majid Ahmadi, *University of Windsor*

Time: December 10, 2013, 12:00 - 13:00

Location: Poster Area

| | |
|--|-----|
| Low-Voltage Fully Differential CMOS Neural Amplifier based on CFOA | 526 |
| <i>Mona El Guindy (University in Cairo), Ahmed H. Madian (University in Cairo)</i> | |
| Modified Maximum and Minimum Spread Estimation Method for Detection of Neural Spikes | 530 |
| <i>Nan Li (Polytechnique Montreal), Hicham Semmaoui (Polytechnique Montreal), Mohamad Sawan (Polytechnique Montreal)</i> | |
| Connecting Spiking Neurons to a Spiking Memristor Network Changes the Memristor Dynamics | 534 |
| <i>Deborah Gater (Khalifa University of Science, Technology and Research), Attya Iqbal (University of the West of England), Jeffrey Davey (University of the West of England), Ella Gale (University of the West of England)</i> | |
| Automated Image Assessment of Posterior Capsule Opacification using Hölder Exponents | 538 |
| <i>Aruna Vivekanand (Khalifa University of Science and Technology), Naoufel Werghi (Khalifa University of Science and Technology), Hussain Al-Ahmad (Khalifa University of Science and Technology)</i> | |
| System for Exercise Analysis | 542 |
| <i>M. Jacobson (United Arab Emirates University), F.C. Howarth (United Arab Emirates University)</i> | |

Session B3L-A: Sigma Delta Modulators

Chair: Mourad Loulou, *University of Sfax*

Time: December 10, 2013, 14:10 - 15:50

Location: Room 1

| | |
|--|-----|
| An Advanced Unscented Kalman Filter Algorithm for Parameter Estimation in Continuous-Time Sigma-Delta Modulators | 545 |
| <i>Matthias Lorenz (University of Ulm), Timon Brückner (University of Ulm), Jens Anders (University of Ulm), Maurits Ortmanns (University of Ulm)</i> | |
| Discrete-Time Simulation of Continuous-Time $\Sigma\Delta$ Modulators with Arbitrary Input Signals | 549 |
| <i>Timon Brückner (University of Ulm), Martin Kiebler (University of Ulm), Matthias Lorenz (University of Ulm), Christoph Zorn (Leibniz University of Hanover), Jens Anders (University of Ulm), Wolfgang Mathis (Leibniz University of Hanover), Maurits Ortmanns (University of Ulm)</i> | |
| Simulating Nonlinear Capacitors in Sigma-Delta Modulators | 553 |
| <i>Sylvain Maréchal (École Polytechnique Fédérale de Lausanne), François Krummenacher (École Polytechnique Fédérale de Lausanne), Maher Kayal (École Polytechnique Fédérale de Lausanne)</i> | |
| Impact of Subband Quantization on DPD Correction Performance | 557 |
| <i>Dang-Kiên Germain Pham (LTCl - Télécom ParisTech), Patricia Desgreys (LTCl - Télécom ParisTech), Mazen Abi Hussein (ESYCOM - ESIEE Paris), Patrick Loumeau (LTCl - Télécom ParisTech), Olivier Venard (LaMIPS - ESIEE Paris)</i> | |
| Rapid Prototyping of Higher Order Incremental $\Sigma\Delta$-ADC Topologies and NTFs | 561 |
| <i>Johannes Uhlig (Technische Universität Dresden), Stefan Haenzsche (Technische Universität Dresden), René Schüffny (Technische Universität Dresden), Thomas Reichel (ZMD AG Dresden), Lars Göpfert (ZMD AG Dresden), Valeri Razhenikov (ZMD AG Dresden)</i> | |

Session B3L-B: Low-Power Architectures I

Chair: Majid Ahmadi, *University of Windsor*

Time: December 10, 2013, 14:10 - 15:50

Location: Room 2

| | |
|--|-----|
| Fast Parallel-Prefix Ling-Carry Adders in QCA Nanotechnology | 565 |
| <i>A. Thanos (University of Patras), H.T. Vergos (University of Patras)</i> | |
| Design of a Low-Power Asynchronous Elliptic Curve Cryptography Coprocessor | 569 |
| <i>Steffen Zeidler (IHP), Michael Goderbauer (IHP), Miloš Krstić (IHP)</i> | |
| An Energy-Efficient Hardware Design for Lossless Reference Frame Compression in Video Coders | 573 |
| <i>Dieison Silveira (Federal University of Pelotas), Guilherme Povala (Federal University of Pelotas), Lívia Amaral (Federal University of Pelotas), Bruno Zatt (Federal University of Pelotas), Luciano Agostini (Federal University of Pelotas), Marcelo Porto (Federal University of Pelotas)</i> | |
| A Flexible Soft IP Core for Standard Implementations of Elliptic Curve Cryptography in Hardware | 577 |
| <i>Bruno F. Ferreira (Pontifical Catholic University of Rio Grande do Sul), Ney L.V. Calazans (Pontifical Catholic University of Rio Grande do Sul)</i> | |
| Low Area ECC Implementation on FPGA | 581 |
| <i>Zia Uddin Ahamed Khan (University of Sheffield), M. Benaissa (University of Sheffield)</i> | |

Session B3L-C: Nonlinear Systems, Methods and Applications

Chair: Riccardo Rovatti, *University of Bologna*

Time: December 10, 2013, 14:10 - 15:50

Location: Room 3

| | |
|---|-----|
| Memory Polynomial with Shaped Memory Delay Profile and Modeling the Thermal Memory Effect | 585 |
| <i>A.H. Yuzer (Karabuk University), S.A. Bassam (University of Calgary), F.M. Ghannouchi (University of Calgary), S. Demir (Middle East Technical University)</i> | |
| Coding of Stereo Signals by a Single Digital $\Delta\Sigma$ Modulator | 589 |
| <i>Sergio Callegari (University of Bologna)</i> | |
| Nonlinear Behavioral Model Extraction of RF Power Amplifier Devices from Manufacturer's Data | 593 |
| <i>Paul Fisher (University of Adelaide and Radio Frequency Industries Pty. Ltd.)</i> | |
| Attitude Control of Quad-Rotor UAVs using an Intuitive Kinematics Model | 597 |
| <i>Dongming Gan (Khalifa University of Science, Technology and Research), Guowei Cai (Khalifa University of Science, Technology and Research), Jorge Dias (University of Coimbra), Lakmal Seneviratne (King's College London)</i> | |
| Utilizing LFSR and Feistel Networks in Image Encryption | 601 |
| <i>Sherif H. Abd El Haleem (Cairo University), Ahmed G. Radwan (Cairo University), Salwa K. Abd-El-Hafiz (Cairo University)</i> | |

Session B3L-D: NOC, SOC and Multi-Core ICs

Chair: Ricardo Reis, *Universidade Federal do Rio Grande do Sul*

Time: December 10, 2013, 14:10 - 15:50

Location: Room 4

| | |
|---|-----|
| Active On-Chip Voltage Regulator based on Second Generation Current Conveyor | 605 |
| <i>Emeshaw Ashenafi (University of Missouri - Kansas City), Masud H. Chowdhury (University of Missouri - Kansas City)</i> | |
| Security Mechanisms to Improve the Availability of a Network-on-Chip | 609 |
| <i>Sidnei Baron (University of Vale do Itajaí), Michelle Silva Wangham (University of Vale do Itajaí), Cesar Albenes Zeferino (University of Vale do Itajaí)</i> | |
| New Methodology Design for Future Generation of Optical Network on Chip "ONoC" | 613 |
| <i>Malek Channoufi (Université Cergy-Pontoise and University of Carthage), Pierre Lecoy (Université Cergy-Pontoise), Bruno Delacressonniere (Laboratory of Microelectronics and Physics of Semiconductors), Rabah Attia (University of Carthage)</i> | |
| Multi-Core SoC Architecture Exploration with Radar Digital System based on Dataflow Graph Method | 617 |
| <i>Zhiyuan Lu (Tsinghua University), Yuanyi Shen (Tsinghua University), Hu He (Tsinghua University)</i> | |
| Hardware Implementation and Evaluation of the Flexible Router Architecture for NoCs | 621 |
| <i>Hossam El-Sayed (Egypt-Japan University of Science and Technology), Mohammed Ragab (Egypt-Japan University of Science and Technology), Mohammed S. Sayed (Egypt-Japan University of Science and Technology), Victor Goulart (Egypt-Japan university of Science and Technology and Kyushu University)</i> | |

Session B5P-G: Analog Circuits III

Chair: Hervé Barthelemy, *IM2NP*

Time: December 10, 2013, 16:10 - 17:10

Location: Poster Area

| | |
|---|-----|
| Low Pass Filter-Less Pulse Width Controlled PLL with Zero Phase Offset using Pulse Width Accumulator | 625 |
| <i>Tomohiko Yano (University of Tokyo), Toru Nakura (University of Tokyo), Kunihiro Asada (University of Tokyo)</i> | |

| | |
|---|-----|
| The DTMOS based UHF RF to DC Conversion | 629 |
| <i>Shailesh Singh Chouhan (Aalto University), Kari Halonen (Aalto University)</i> | |
| Studies on Die-to-Substrate Interconnects for High-Q PCB Inductors | 633 |
| <i>Mohammadreza Pourakbar (Victoria University), Lance Linton (Victoria University), Francois Rivet (University of Bordeaux), Michael Faulkner (Victoria University)</i> | |
| A 2.4GHz to 6GHz Active Balun in GaN Technology | 637 |
| <i>Victor Dupuy (University of Bordeaux), Eric Kerhervé (University of Bordeaux), Nathalie Deltimple (University of Bordeaux), Benoit Mallet-Guy (Thales Systèmes Aéroportés), Yves Mancuso (Thales Systèmes Aéroportés), Patrick Garrec (Thales Systèmes Aéroportés)</i> | |
| A Digital-RF Converter Architecture for IQ Modulator with Discrete-Time Low Resolution Quadrature LO | 641 |
| <i>M. Reza Sadeghifar (Linköping University), Nadeem Afzal (Linköping University), J. Jacob Wikner (Linköping University)</i> | |

Session B5P-H: Image Processing

Chair: Thomas Rauber, *Universidade Federal do Espírito Santo*

Time: December 10, 2013, 16:10 - 17:10

Location: Poster Area

| | |
|--|-----|
| Android-Based Object Recognition for the Visually Impaired | 645 |
| <i>Nada N. Saeed (German University in Cairo), Mohammed A.-M. Salem (Ain Shams University), Alaa Khamis (Suez University)</i> | |
| Comparison of Hopfield Neural Network and Mean Shift Algorithm in Segmenting Sputum Color Images for Lung Cancer Diagnosis | 649 |
| <i>Fatma Taher (Khalifa University), Naoufel Werghi (Khalifa University), Hussain Al-Ahmad (Khalifa University)</i> | |
| Image Encryption using Generalized Tent Map | 653 |
| <i>Ahmed G. Radwan (Cairo University), Salwa K. Abd-El-Hafiz (Cairo University)</i> | |
| Automated Image Recognition of Public Lighting Luminaries | 657 |
| <i>Raphael Santos Broetto (Federal University of Espírito Santo), José Gonçalves Pereira Filho (Federal University of Espírito Santo), Flávio Miguel Varejão (Federal University of Espírito Santo), André Bernadi Candeia (EDP Escelsa)</i> | |
| Non-Destructive Detection of Irradiated Apple using Image Processing | V |
| <i>H.M. Nada (National Center for Radiation and Research Technology), A.A. Arafa (National Center for Radiation and Research Technology), I.F. Tarrad (Al Azhar University), M. Ashour (National Center for Radiation and Research Technology)</i> | |

Session B5P-J: Communication Systems

Chair: Luis Nero Alves, *University of Aveiro*

Time: December 10, 2013, 16:10 - 17:10

Location: Poster Area

| | |
|--|-----|
| A Low-Power Reconfigurable GFSK RF Transceiver with Sub-1GHz Band for Short Range Applications | 666 |
| <i>Qi Zhang (Chinese Academy of Sciences), Ning Wang (Chinese Academy of Sciences), Dunshan Yuan (Chinese Academy of Sciences), Guohong Li (Chinese Academy of Sciences), Hui Wang (Chinese Academy of Sciences), Songlin Feng (Chinese Academy of Sciences)</i> | |
| Performance Comparison of Wireless Networks over IPv6 and IPv4 Under Several Operating Systems | 670 |
| <i>Hossam M.A. Fahmy (Ain Shams University), Salma A. Ghoneim (Ain Shams University)</i> | |

| | |
|---|-----|
| Impulsive Noise Reduction in MIMO-OFDM Systems using Adaptive Receiver Structures | 674 |
| <i>Ali Hakam (Khalifa University), Noha Abou Aly (Khalifa University), Mohammed Khalid (Khalifa University), Shihab Jimaa (Khalifa University), Saleh Al-Araji (Khalifa University)</i> | |
| Modulation Identification of Digital M-Ary QAM Signals by Hilbert-Huang Transform | 678 |
| <i>Yesim Hekim Tanc (Istanbul University), Aydin Akan (Istanbul University)</i> | |
| Atomic Clock Comparison over Optical Network | 682 |
| <i>Jiří Dostál (Czech Technical University in Prague), Vladimír Smotlacha (CESNET)</i> | |
| Clustering based Self-Optimization of Pilot Power in Dense Femtocell Deployments using Genetic Algorithms | 686 |
| <i>Lina Mohjazi (Khalifa University), Mahmoud Al-Qutayri (Khalifa University), Hassan Barada (Khalifa University), Kin Fai Poon (Etisalat-BT Innovation Centre)</i> | |

Session B5P-K: Low Power

Chair: Fatma Taher, *KUSTAR*

Time: December 10, 2013, 16:10 - 17:10

Location: Poster Area

| | |
|---|-----|
| Performability Measurement of Coding Algorithms for Network on Chip | 691 |
| <i>Ayman A. Salem (German University in Cairo), Mohamed A. Abd El Ghany (German University in Cairo & Technische Universität Darmstadt), Klaus Hofmann (Technische Universität Darmstadt)</i> | |
| A Method for Image Processing and Distance Measuring based on Laser Distance Triangulation | 695 |
| <i>Saulo Vinicius Ferreira Barreto (University of Pernambuco), Remy Eskinazi Sant'Anna (University of Pernambuco), Marcílio André Félix Feitosa (University of Pernambuco)</i> | |
| Low-Cost Auto-Calibration of Passive Polyphase Filter in Image Reject Receiver | 699 |
| <i>F. Haddad (IM2NP – Aix-Marseille University), W. Rahajandraibe (IM2NP – Aix-Marseille University), H. Aziza (IM2NP – Aix-Marseille University), K. Castellani-Coulié (IM2NP – Aix-Marseille University), J-M. Portal (IM2NP – Aix-Marseille University), J. Nebhen (IM2NP – Aix-Marseille University), H. Barthélemy (IM2NP – Aix-Marseille University)</i> | |
| High Performance 4H-SiC Emitter Coupled Logic Circuits | 703 |
| <i>Shakti Singh (Khalifa University of Science, Technology and Research), Nourhan El Sayed (Khalifa University of Science, Technology and Research), Hazem Elgabra (Khalifa University of Science, Technology and Research), Tamador El Boshra (Khalifa University of Science, Technology and Research), Maisam Wahbah (Khalifa University of Science, Technology and Research), Mariam Al Zaabi (Khalifa University of Science, Technology and Research)</i> | |
| Hardware PCA for Gas Identification Systems using High Level Synthesis on the Zynq SoC | 707 |
| <i>Amine Ait Si Ali (Qatar University and University of the West of Scotland), Abbes Amira (University of the West of Scotland), Faycal Bensaali (Qatar University), Mohieddine Benammar (Qatar University)</i> | |

Session B5P-L: Low-Energy Devices, Circuits and Energy Sources

Chair: Majid Ahmadi, *University of Windsor*

Time: December 10, 2013, 16:10 - 17:10

Location: Poster Area

| | |
|---|-----|
| Accurate Subthreshold Leakage Model for Nanoscale MOSFET Transistor | 711 |
| <i>Abdoul Rjoub (Jordan University of Science and Technology), Nedal R. Al-Taradeh (Jordan University of Science and Technology), Mamoun F. Al-Mistarihi (Jordan University of Science and Technology)</i> | |
| A Novel Approach to Reduce Power Consumption in Level Shifter for Multiple Dynamic Supply Voltage | 715 |
| <i>Marco Terres (Universidade Federal do Rio Grande do Sul), Cristina Meinhardt (Universidade Federal do Rio Grande do Sul), Guilherme Bontorin (Universidade Federal do Rio Grande do Sul), Ricardo Reis (Universidade Federal do Rio Grande do Sul)</i> | |

Modeling of STT-MTJ for Low Power Embedded Memory Applications: A Comparative Review 719
Yasmin Halawani (Khalifa University), Baker Mohammad (Khalifa University), Mahmoud Al-Qutayri (Khalifa University), Hani Saleh (Khalifa University)

Variability Analysis of a 28nm Near-Threshold Synchronous Voltage Converter 723
Temesghen Tekeste (Masdar Institute of Science and Technology), Ayman Shabra (Masdar Institute of Science and Technology), Duane Boning (Massachusetts Institute of Technology), Ibrahim Elfadel (Masdar Institute of Science and Technology)

A Simplified Computational Model for Solid-State Lithium Microbatteries 727
Mohammed Shemsu Nesro (Masdar Institute of Science and Technology), Ibrahim M. Elfadel (Masdar Institute of Science and Technology)

Session B5P-M: Models, Circuits and Systems

Chair: Ahmed Abdelgawad, *Central Michigan University*

Time: December 10, 2013, 16:10 - 17:10

Location: Poster Area

A New Non-Coherent Pulse Compression based on Binary Codes for On-Off Keying (NCPC-BC-OOK) 731
Ashraf Seleyem (October 6 University)

Fast Algorithm for Restoration of Foggy Images 735
Artur Loza (Khalifa University of Science, Technology and Research), Harish Bhaskar (Khalifa University of Science, Technology and Research), Mohammed Al-Mualla (Khalifa University of Science, Technology and Research), David Bull (University of Bristol)

A 5.2nV/VHz Noise Density Third-Order FDNR Filter for DVB-H Mobile-TV Receiver 739
Soliman Mahmoud (University of Sharjah), Aisha Abdallah (University of Sharjah), Sara Khalid (University of Sharjah)

Modeling Photovoltaic Modules using N-Channel MOS Transistor 743
Heba N. Mohamed (Khalifa University), Soliman A. Mahmoud (University of Sharjah)

Temperature Dependence in Modeling Photovoltaic Arrays 747
Heba N. Mohamed (Khalifa University), Soliman A. Mahmoud (University of Sharjah)

A Fitness Guided Mutation Operator for Improved Performance of MOEAs 751
K. Metaxiotis (University of Piraeus), K. Liagkouras (University of Piraeus)

Session C1L-A: RF Circuits and Systems I

Chair: Ivan Grech, *University of Malta*

Time: December 11, 2013, 10:00 - 11:40

Location: Room 1

An Agile Matching Network using Phase Detection for Antenna Tuning 755
Alexandre Robichaud (Université du Québec à Montréal), Abdul Hafiz Alameh (Université du Québec à Montréal), Frederic Nabki (Université du Québec à Montréal), Dominic Deslandes (Université du Québec à Montréal)

Fast Power Switching Low-Noise Amplifier for 6-10 GHz Ultra-Wideband Applications 759
I. Benamor (Aix-Marseille University), N. Dehaese (Aix-Marseille University), J. Gaubert (Aix-Marseille University), S. Bourdel (Aix-Marseille University), O. Ramos (Aix-Marseille University), S. Meillère (Aix-Marseille University), H. Barthélemy (Aix-Marseille University)

Design of a Class EF2 Power Oscillator for RF Communication Application 763
Heider Madureira (University of Bordeaux and University of Brasília), Nathalie Deltimple (University of Bordeaux), Eric Kerhervé (University of Bordeaux), Sandro Haddad (University of Brasília)

| | |
|---|-----|
| Wide-Band Rejection of Interfering Signals | 767 |
| <i>Francois Rivet (University of Bordeaux), Francois Fadhuile (University of Bordeaux), Yann Deval (University of Bordeaux), Thierry Taris (University of Bordeaux)</i> | |

| | |
|---|-----|
| RF System Level Design for a Spectrum Sensing Receiver | 771 |
| <i>Filipe D. Baumgratz (Rio Grande do Sul Federal University), Sandro B. Ferreira (Rio Grande do Sul Federal University), Sergio Bampi (Rio Grande do Sul Federal University)</i> | |

Session C1L-B: Design and Architectures for Signal Processing

Chair: Yasser Ismail, *University of Bahrain*

Time: December 11, 2013, 10:00 - 11:40

Location: Room 2

| | |
|--|-----|
| An Improved Switching and Reset Architecture for Linear Phase Recursive Filters | 775 |
| <i>Firas Hassan (Ohio Northern University), Sami Khorbotly (Valparaiso University)</i> | |

| | |
|---|-----|
| Design of an Efficient FPGA-Based Interference Canceller Structure using NLMS Adaptive Algorithm | 779 |
| <i>Eduardo da Costa (Catholic University of Pelotas), Sérgio Almeida (Catholic University of Pelotas)</i> | |

| | |
|---|-----|
| Hardware Implementation of IIR Digital Filters for Programmable Devices | 783 |
| <i>Ramsey Hourani (John Hopkins University - APL), Hazem Alassaly (Abu Dhabi Education Council), Winsor Alexander (North Carolina State University)</i> | |

| | |
|--|-----|
| Block-Floating-Point Enhanced MMSE Filter Matrix Computation for MIMO-OFDM Communication Systems | 787 |
| <i>C. Senning (École Polytechnique Fédérale de Lausanne), A. Burg (École Polytechnique Fédérale de Lausanne)</i> | |

| | |
|---|-----|
| Low-Power and High-Speed DRAM Readout Scheme | 791 |
| <i>Sherif M. Sharroush (Port Said University)</i> | |

Session C1L-C: Energy Harvesting

Chair: Mounir Boukadoum, *University of Quebec*

Time: December 11, 2013, 10:00 - 11:40

Location: Room 3

| | |
|--|-----|
| Piezo Electric Energy Harvester and its Interface Circuit: Opportunities and Challenges | 795 |
| <i>Maisam Wahbah (Khalifa University of Science, Technology and Research), Baker Mohammad (Khalifa University of Science, Technology and Research)</i> | |

| | |
|---|-----|
| Efficiency Analysis of Harvester Circuits | 799 |
| <i>K. Ibrahim (American University of Sharjah), E.A. El Ghanam (American University of Sharjah), M. Ali (American University of Sharjah), L. Albasha (American University of Sharjah), N. Qaddoumi (American University of Sharjah)</i> | |

| | |
|--|-----|
| Enhanced Efficiency Threshold-Cancellation based Rectifier for RF Energy Harvesting Applications | 803 |
| <i>M. Ali (American University of Sharjah), N. Obaid (American University of Sharjah), L. Albasha (American University of Sharjah), N. Qaddoumi (American University of Sharjah)</i> | |

| | |
|--|-----|
| Accurate Detection and Estimation of Radio Signals using a 2D Novel Smart Antenna Array | 807 |
| <i>A. Hakam (Khalifa University), R.M. Shubair (Khalifa University and University of Waterloo)</i> | |

Session C1L-D: Emerging Circuit Design Techniques

Chair: Ayman Shabra, *Masdar Institute of Technology*

Co-Chair: Valeriu Beiu, *UAEU*

Time: December 11, 2013, 10:00 - 11:40

Location: Room 4

- Stability Analysis and Design of Hysteretic Current-Mode Switched-Inductor Buck DC-DC Converters** 811
Carlos J. Solis (Georgia Institute of Technology), Gabriel A. Rincón-Mora (Georgia Institute of Technology)
- A Nano Quiescent Current Power Management for Autonomous Wireless Sensor Network** 815
F. Todeschini (STMicroelectronics and Supelec), C. Planat (STMicroelectronics), P. Milazzo (STEricsson), S. Tricomi (STEricsson), P. Urard (STMicroelectronics), P. Benabes (Supelec)
- A MEMS Resonator Tank for an RF VCO Application** 819
Daniel Zammit (University of Malta), Owen Casha (University of Malta), Ivan Grech (University of Malta), Edward Gatt (University of Malta), Joseph Micallef (University of Malta)
- Remote Powering Link for a Passive UHF RFID Tag for Capacitive Sensor Applications** 823
Kerem Kapucu (École Polytechnique Fédérale de Lausanne), Catherine Dehollain (École Polytechnique Fédérale de Lausanne)
- Shock Rejection and Ambient Temperature Compensation Mechanism for Uncooled Microcantilever Thermal Detector** 827
H.H. Tawfik (McGill University), M.N. El-Gamal (McGill University), F. Nabki (Université du Québec à Montréal)

Session C2L-A: RF Circuits and Systems II

Chair: Yann Deval, *University of Bordeaux*

Time: December 11, 2013, 14:10 - 15:50

Location: Room 1

- Bandwidth Improvements in Transimpedance Amplifiers for Visible-Light Receiver Front-Ends** 831
José Luis Cura (University of Aveiro), Luis Nero Alves (University of Aveiro)
- A Frequency Synthesizer based on Zero-Crossing Digital Phaselocked Loop** 835
Ehab Salahat (Khalifa University), Saleh R. Al-Araji (Khalifa University), Mahmoud Al-Qutayri (Khalifa University)
- A Variable Gain Wideband CMOS Low-Noise Amplifier for 75 MHz - 3 GHz Wireless Receivers** 839
Chrysoula Vassou (Aristotle University of Thessaloniki), Fotis Plessas (University of Thessaly), Nikolaos Terzopoulos (Oxford Brookes University)

Session C2L-B: Simulation, Verification and Design Automation

Chair: El Mostapha Aboulhamid,

Time: December 11, 2013, 14:10 - 15:50

Location: Room 2

- Pre-Silicon Verification of Multiprocessor SoCs: The Case for On-the-Fly Coherence/Consistency Checking** 843
Olav P. Henschel (Federal University of Santa Catarina), Luiz C.V. dos Santos (Federal University of Santa Catarina)
- Efficient Standard Cell Abutment Checker** 847
Juang-Ying Chueh (Advanced Micro Devices, Inc.), Chuck Tung (Advanced Micro Devices, Inc.)

Oscad: An Open Source EDA Tool for Circuit Design, Simulation, Analysis and PCB Design 851
Yogesh Dilip Save (IBM), Rakhi Rajalekshmi (Indian Institute of Technology Bombay), Shambhulingayya N.D. (Indian Institute of Technology Bombay), Ambikeshwar Srivastava (Indian Institute of Technology Bombay), Manas Ranjan Das (Indian Institute of Technology Bombay), Saket Choudhary (Indian Institute of Technology Bombay), Kannan M. Moudgalya (Indian Institute of Technology Bombay)

Instruction-Driven Timing CPU Model for Efficient Embedded Software Development using OVP 855
Felipe Rosa (CNRS-University of Montpellier II and UFRGS - Instituto de Informática - PGMicro/PPGC), Luciano Ost (CNRS-University of Montpellier II), Ricardo Reis (UFRGS - Instituto de Informática - PGMicro/PPGC), Gilles Sassatelli (CNRS-University of Montpellier II)

Synthesizable Assertion Checkers in High Levels of Abstraction 859
Bahram Najafi Uchevler (Norwegian University of Science and Technology), Kjetil Svarstad (Norwegian University of Science and Technology)

Session C2L-C: Communication Techniques

Chair: Alex Balatsoukas-Stimming, EPFL

Time: December 11, 2013, 14:10 - 15:50

Location: Room 3

Joint Secured and Robust Technique for OFDM Systems 865
A. Al-Dweik (University of Guelph and Khalifa University), M. Mirahmadi (Western University), A. Shami (Western University), B. Sharif (Khalifa University), R. Hamila (Qatar University)

Weighted Minimax Design of Sharpened CIC Filters 869
Goran Molnar (University of Zagreb), Mladen Vucic (University of Zagreb)

Digital Front-End Design for Carrier Aggregation in Next-Generation Cellular user Equipment 873
Harald Kröll (ETH Zurich), Sandro Belfanti (ETH Zurich), Pirmin Vogel (ETH Zurich), Luca Bettini (ETH Zurich), Christian Benkeser (ETH Zurich), Qiuting Huang (ETH Zurich)

Design of Pseudo Random Keystream Generator using Fractals 877
Sherif H. Abd El Haleem (Cairo University), Ahmed G. Radwan (Cairo University), Salwa K. Abd-El-Hafiz (Cairo University)

Efficient MFSK Demodulation using TDTL with Fast Acquisition 881
O. Al-Kharji Al-Ali (Telecommunications Regulatory Authority), S.R. Al-Araji (Khalifa University), M.A. Al-Qutayri (Khalifa University), N.A. Anani (Manchester Metropolitan University)

Session C2P-G: Analog Circuits IV

Chair: Eric Kerhervé, University of Bordeaux

Time: December 11, 2013, 12:00 - 13:00

Location: Poster Area

A Novel LTPS-TFT Pixel Circuit for Mobile AMOLED Display 885
WITHDRAWN
Zhiqing Chen (Chinese Academy of Sciences), Qi Zhang (Chinese Academy of Sciences), Hui Wang (Chinese Academy of Sciences), Songlin Feng (Chinese Academy of Sciences)

Microscale Solar Energy Harvesting for Wireless Sensor Networks based on Exponential Maximum Power Locking Technique 889
Ayman Eltaliawy (American University in Cairo), Hassan Mostafa (American University in Cairo and Cairo University), Yehea Ismail (American University in Cairo)

A Micro-Power 4.8 ppm/°C CMOS Voltage Reference Circuit for Linear Drop Out Regulator used in RFID 893
Shailesh Singh Chouhan (Aalto University), Kari Halonen (Aalto University)

Design of a Sub 1-V MOSFET based Voltage Reference Circuit Operating in Subthreshold Region 897
Mahmoud Mohammed (Princess Sumaya University for Technology), Khaldoon Abugharbieh (Princess Sumaya University for Technology), Sanad Kawar (Princess Sumaya University for Technology)

Session C2P-H: RF Design and Simulation Techniques

Chair: Francois Rivet,

Time: December 11, 2013, 12:00 - 13:00

Location: Poster Area

A Novel Simplified Approach for Overcoming the Constraints of Antenna Systems through Capacitively-Loaded Loop Structures 901
Belgacem Aouadi (University of Carthage), Jamel Belhadj Tahar (University of Carthage) **WITHDRAWN**

Dispersive-Mode Characterization of Ferrite Microwave Circuits with Arbitrary DC Magnetic Field Polarization 905
Mohamed Lamine Tounsi (University of Science and Technology Houari Boumediene), Youcef Gaceb (University of Science and Technology Houari Boumediene), Mustapha C.E Yagoub (University of Ottawa)

A 14.7GHz Wideband 28nm CMOS Ring VCO 909
Ibrahim Abdo (Princess Sumaya University for Technology), Khaldoon Abugharbieh (Princess Sumaya University for Technology)

A 21 GHz Wide Frequency Tuning Range LC VCO with Low KVCO 913
Mahmoud Abdelfattah (Princess Sumaya University for Technology), Abdullah Hamkari (Princess Sumaya University for Technology), Khaldoon Abugharbieh (Princess Sumaya University for Technology)

Session C2P-J: Emerging Technologies

Chair: Walid Ibrahim, UAEU

Co-Chair: Lutfi Albasha, American University in Sharjah

Time: December 11, 2013, 12:00 - 13:00

Location: Poster Area

A TSV-Based Bandpass Filter Design 917
Khaled Salah (Mentor Graphics) **WITHDRAWN**

A Novel Power Harvesting Scheme for Sensor Networks in Advanced Avionic Applications 921
Jinying Zhang (Polytechnique Montreal), Saeid Hashemi (Polytechnique Montreal), Masood Karimian (Polytechnique Montreal), Zied Koubaa (Polytechnique Montreal), Mohamad Sawan (Polytechnique Montreal)

A High-Speed DC-DC Converter with High Efficiency at Wide Loading Range 925
Chu-Hsiang Chia (National Chung Hsing University), Pui-Sun Lei (National Chung Hsing University), Robert Chen-Hao Chang (National Chung Hsing University), Tzu-Ying Kao (National Chung Hsing University)

Indoor Localization and Navigation using Smartphones Augmented Reality and Inertial Tracking 929
Buti Al Delail (Khalifa University), Luis Weruaga (Khalifa University), M. Jamal Zemerly (Khalifa University), Jason W.P. Ng (Etisalat BT Innovation Center)

Session C2P-K: Multimedia

Chair: Naeem Ramzan, University of West of Scotland

Time: December 11, 2013, 12:00 - 13:00

Location: Poster Area

A Multi-Classifer Image based Vacant Parking Detection System 933
Junzhao Liu (King Fahd University of Petroleum and Minerals), Mohamed Mohandes (King Fahd University of Petroleum and Minerals), Mohamed Deriche (King Fahd University of Petroleum and Minerals)

Computational Complexity Control for HEVC based on Coding Tree Spatio-Temporal Correlation 937
Guilherme Correa (Instituto de Telecomunicações and University of Coimbra), Pedro Assuncao (Instituto de Telecomunicações and Polytechnic Institute of Leiria), Luis A. da Silva Cruz (Instituto de Telecomunicações and University of Coimbra), Luciano Agostini (Federal University of Pelotas)

ES&IS: Enhanced Spread and Iterative Search Hardware-Friendly Motion Estimation Algorithm for the HEVC Standard 941
Gustavo Sanchez (Federal University of Pelotas), Bruno Zatt (Federal University of Pelotas), Marcelo Porto (Federal University of Pelotas), Luciano Agostini (Federal University of Pelotas)

Session C2P-L: Processing Module and System Design

Chair: Fatma Taher, *KUSTAR*

Time: December 11, 2013, 12:00 - 13:00

Location: Poster Area

Fast Co-Processor for Real Time Video Transmission 945
Yasser Ismail (University of Bahrain), Wael El-Medany (University of Bahrain), Hessa Al-Junaid (University of Bahrain), Ahmed Abdelgawad (Central Michigan University)

Netlist Partitioning Method Suitable for Adaptive Computing Systems 950
Nabil F. Kerkiz (Intel Corporation), Amr Elchouemi (Abu Dhabi Education Council)

Ultra Compact, Quadratic Power Proxies for Multi-Core Processors 954
Muhammed Yasin (Masdar Institute of Science and Technology), Anas Shahrour (Masdar Institute of Science and Technology), Ibrahim Elfadel (Masdar Institute of Science and Technology)

An RNS Modular Multiplication Algorithm 958
Dimitrios Schinianakis (University of Patras), Thanos Stouraitis (University of Patras)

Integration of Thermal Management and Floorplanning based on Three-Dimensional Layout Representations 962
Puskar Budhathoki (Masdar Institute of Science and Technology), Johann Knechtel (Dresden University of Technology), Andreas Henschel (Masdar Institute of Science and Technology), Ibrahim M. Elfadel (Masdar Institute of Science and Technology)