

# **2016 14th IEEE International New Circuits and Systems Conference (NEWCAS 2016)**

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26 – 29 June 2016**



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## Tutorials

Sunday Morning, June 26

Point Grey Room

**9:00 to 12:00**

Tiny Inductively powered Battery Chargers, by Professor Gabriel Rincon-Mora (Georgia Institute of Technology).....N/A

Ambleside I

**9:00 to 12:00**

Development of Massively-Parallel Multimedia Algorithms and Applications in the Integrated Multi-Core/GPU Platform by Saeid Nooshabadi (Michigan Technological University).....N/A

<b>10:15 to 10:30 - Coffee Break</b>
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<b>12:00 to 13:30 - Lunch (Pinnacle Ballroom)</b>
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Sunday Afternoon, June 26

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**13:30 to 16:30**

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Ambleside I

**13:30 to 16:30**

Optimizing NanoCMOS Circuits by Using Transistor Networks by Professor Ricardo Reis, Universidade Federal do Rio Grande do Sul (UFRGS).....N/A

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**17:30 to 20:00 - Welcome Reception (Point Grey Room)**

## Technical Sessions

### Session 1 - Formal Opening and Plenary Session

Monday Morning, June 27, Pinnacle Ballrooms II and III

**8:30 Formal Opening**

**9:00 Keynote**



**Professor Behzad Razavi**, University of California, Los Angeles

**Title:** Design for Low Power: The Next Frontier

### 10:00 to 10:30 - Coffee Break (Shaughnessy Salon)

### Session 2 - UWB Radios: Advances and Perspectives

Monday Morning, June 27, Pinnacle II Ballroom

Session Chair: Domenico Zito, University College Cork & Tyndall National Institute

Yann Deval, IMS Laboratory

**10:30**      **UWB Radios - the Maturity Age?**, Domenico Zito<sup>1</sup>, Dominique Morche<sup>2</sup>,  
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<sup>2</sup>Politecnico di Torino, Italy.....17

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Eric Kerherve, IMS Laboratory

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<b>Panel Discussion</b>
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Monday Afternoon, June 27, (15:30 – 17:00)

Organized by IEEE Women in Circuits and Systems (WiCAS) and Young Professionals (YP)

Panelists:     Dr. Magdy Bayoumi, University of Louisiana,  
                    Dr. Neda Parnian, Intel,  
                    Dr. Mohamad Sawan, Polytechnique Montréal  
                    Dr. Shahram Tafazoli, Motion Metrics,  
                    Dr. Rabab Ward, University of British Columbia,

**18:00 to 20:00**  
**Social Event (Cruise)**



**Tuesday, JUNE 28, 2016**

**Session 8 – Plenary Session**

Tuesday Morning, June 28, Pinnacle Ballrooms II and III

**9:00 Keynote**



**Professor Massimo Alioto**, National University of Singapore

**Title:** Designing (Relatively) Reliable Systems with (Highly) Unreliable Components

**10:00 to 10:30 - Coffee Break (Shaughnessy Salon)**

**Session 9 - Sensors and Circuits for Health and Environmental Monitoring**

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Benoit Gosselin - Université Laval

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<sup>1</sup>Macquarie University, Australia, <sup>2</sup>Nanyang Technological University,  
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Mounir Boukadoum, Université du Québec à Montréal  
Yann Deval, IMS Lab, Université de Bordeaux  
Wolfgang Richter, EPIC Semiconductors  
Zhihua Wang, Tsinghua University

## 15:00 to 15:30 - Coffee Break (Shaughnessy Salon)

## Session 12 - High Performances ADC

Tuesday Afternoon, June 28, Pinnacle Ballroom II

Session Chair: Nima Maghari - University of Florida  
Patricia Desgreys - Télécom ParisTech

- |                       |   |
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- 15:30**      **A Low-Power Continuous-Reset CMOS Charge-Sensitive Amplifier for**  
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Beikahmadi<sup>2</sup>, Krzysztof Iniewski<sup>1</sup>, Shahriar Mirabbasi<sup>2</sup>, <sup>1</sup>Redlen  
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- 15:48**      **Sub-Nanosecond Gated Photon Counting for High Spatial Resolution**  
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- 16:06**      **Line Buffer Reduction for LUT-Based Real-Time Image Inverse**  
**13-3**      **Warping,** Yufeng Lu<sup>2</sup>, Xiaohua Luo<sup>2</sup>, Yimu Wang<sup>1</sup>, Luc Claesen<sup>1</sup>, <sup>1</sup>Hasselt  
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**13-5**      **Algorithm for Horizontal Imaging,** Solmaz Hajmohammadi, Saeid  
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**18:00 to 20:00**

**Social Event at the University of British Columbia (UBC)**  
**Sponsored by**  
**Department of Electrical and Computer Engineering (UBC)**



Wednesday, JUNE 29, 2016

**Session 14 – Plenary Session**

Tuesday Morning, June 28, Pinnacle Ballrooms II and III

**9:00 Keynote**



**Professor Ali Niknejad**, University of California, Berkeley

**Title:** mm-Wave CMOS to the Rescue: 5G and Beyond (xG) Communication and Enhanced BioSensing

**10:00 to 10:30 - Coffee Break (Shaughnessy Salon)**

**Session 15 - Signal Conditioning and MEMS Control**

Wednesday Morning, June 29, Pinnacle Ballroom II

Session Chair: Luc Hebrard - University of Strasbourg

Mohamad Sawan - Polytechnique Montréal

- 10:30**      **Wideband LNA with 1.9 dB Noise Figure in 0.18  $\mu$ m CMOS for High**  
**15-1**      **Frequency Ultrasound Imaging Application**, Yuxuan Tang<sup>2</sup>, Yulang  
Feng<sup>2</sup>, Zhiheng Zuo<sup>2</sup>, Qingjun Fan<sup>2</sup>, Cheng Fang<sup>1</sup>, Jun Zou<sup>1</sup>, Jinghong Chen<sup>2</sup>,  
<sup>1</sup>Texas A&M University, United States, <sup>2</sup>University of Houston, United  
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- 10:48**      **Ultra-High Sensitivity, Low-Power Dual Chopper Signal Conditioning**  
**15-2**      **Circuit for Integrated Sensors**, Parisa Vejdani<sup>1</sup>, Karim Allidina<sup>2</sup>, Frederic  
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- 11:06**      **Mixed-Mode Self-Calibrated Amplitude Control Scheme for MEMS**  
**15-3**      **Vibratory Gyroscopes**, Ahmed Sawaby, Amr Ahmed, Mohamed Abozeid,  
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- 11:24**      **3-Axis High Q MEMS Accelerometer with Simultaneous Damping**  
**15-4**      **Control**, Lavinia Elena Ciotirca<sup>1</sup>, Olivier Bernal<sup>2</sup>, Hélène Tap<sup>2</sup>, Jérôme  
Enjalbert<sup>3</sup>, Thierry Cassagnes<sup>3</sup>, <sup>1</sup>NXP Semiconductors, <sup>2</sup>Ecole Nationale  
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- 11:42**      **Tracking BTI and HCI Effects at Circuit-Level in Adaptive Systems**,  
**15-5**      **Mauricio Altieri<sup>1</sup>, Suzanne Lesecq<sup>1</sup>, Edith Beigne<sup>1</sup>, Olivier Heron<sup>2</sup>, Diego**  
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## Session 16 - Silicon-Based RF Front-End Circuits

Wednesday Morning, June 29, Pinnacle Ballroom III

Session Chair: Frederic Nabki – UQAM  
Jose-Luiz Gonzales - CEA-LETI

- 10:30  
16-1**      **A Broad-Band 55-nm BiCMOS T/R Switch for mmW 5G Small Cell Access Point**, Vincent Puyal<sup>1</sup>, Alexandre Siligaris<sup>1</sup>, José-Luis González-Jiménez<sup>2</sup>, Cédric Dehos<sup>1</sup>, Frédéric Hameau<sup>1</sup>, Aurélien Larie<sup>1</sup>, Laurent Dussopt<sup>1</sup>, Eric Mercier<sup>1</sup>, <sup>1</sup>CEA-Leti, France, <sup>2</sup>Université Grenoble Alpes, France.....309
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16-2**      **A 0.3 nJ/Bit Super-Regenerative Pulse UWB Receiver with Track and Detection**, Joshua Kim<sup>1</sup>, Michael Green<sup>2</sup>, <sup>1</sup>Boeing Company, United States, <sup>2</sup>University of California, Irvine, United States.....313
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16-3**      **A Concurrent Transmitter in CMOS 28nm FDSOI Technology Based on Walsh Sequences Generator**, Nassim Bouassida<sup>1</sup>, François Rivet<sup>1</sup>, Yann Deval<sup>1</sup>, David Duperray<sup>2</sup>, Andreia Cathelin<sup>2</sup>, <sup>1</sup>Laboratoire de l'Intégration du Matériau au Système/Université de Bordeaux, France, <sup>2</sup>STMicroelectronics, France.....317
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Session Chair: Eric Kerherve – IMS

- E-1**      **A Dual Gm-Mode LC-Tank VCO with Programmable-in-Size-and-Current Active Core and Pseudo-Exponential Tank Capacitance**, Mehran Bakhshiani, Pedram Mohseni, Case Western Reserve University, United States.....329

- E-2 Channel Aware Receiver Front End for Low Power 2.4 GHz Wireless Sensor Network - a System Level Analysis**, Jennifer Zaini<sup>1</sup>, Frédéric Hameau<sup>1</sup>, Thierry Taris<sup>3</sup>, Dominique Morche<sup>1</sup>, Le Quang Vinh Tran<sup>2</sup>, Patrick Audebert<sup>1</sup>, <sup>1</sup>CEA-Leti, France; <sup>2</sup>ERCOM TELECOM, France; <sup>3</sup>University of Bordeaux, France.....333
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- F-2 Toward Sub-pJ Per Classification in Body Area Sensor Networks**, Paul Chollet, Kevin Colombier, Cyril Lahuec, Matthieu Arzel, Fabrice Seguin, Telecom Bretagne, France.....349
- F-3 A Low-Cost Camera-Based Transducer Tracking System for Freehand Three-Dimensional Ultrasound**, Mohammad Baba<sup>1</sup>, Otmane Ait Mohamed<sup>1</sup>, Falah Awwad<sup>2</sup>, Mohammad Daoud<sup>3</sup>, <sup>1</sup>Concordia University, Canada, <sup>2</sup>United Arab Emirates University, U.A.E <sup>3</sup>German Jordanian University, Jordan.....353

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Wednesday Afternoon, June 29, Shaughnessy Salon, (13:00 - 15:00)

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- G-2 High Speed Serial Interface Transceiver Controller Based on JESD204B**, Zhaoming Wu, Chun Zhang, Fule Li, Zhihua Wang, Tsinghua University, China.....361
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Session Chair: Jeffrey Walling - University of Utah

- K-1 PEVaS: Power and Execution-Time Variation-Aware Scheduling for MPSoC**, Komei Nomura<sup>1</sup>, Yasuhiro Takashima<sup>1</sup>, Yuichi Nakamura<sup>2</sup>, <sup>1</sup>University of Kitakyushu, Japan, <sup>2</sup>NEC Corporation, Japan.....373

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Session Chair: Benoit Gosselin - Laval University

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Jean-Baptiste Begueret - IMS Laboratory

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