

14th IEEE International NEWCAS Conference



June 26th – 29th, 2016

Vancouver Marriott Pinnacle Downtown Hotel. Vancouver, Canada

Conference Program

Conference Venue Layout



Organizing Committee

General Program Co-Chairs

Mohammad Sawan, Polytechnique Montréal Montréal QC, Canada
Shahriar Mirabbasi, University of British Columbia, Vancouver, BC, Canada

Technical Program Co-Chairs

Ljiljana Trajkovic, Simon Fraser University, Burnaby, BC, Canada
Sudip Shekhar, University of British Columbia, Vancouver, BC, Canada
Luc Hébrard, University of Strasbourg, Strasbourg, France

Tutorial Co-Chairs

Benoit Gosselin, Université Laval, Québec City, QC, Canada
Patricia Desgreys, Telecom ParisTech, Paris, France
Jean-Baptiste Begueret, University of Bordeaux, Talence, France

Special Session Co-Chairs

Thierry Taris, Bordeaux INP, and IMS Lab, University of Bordeaux, Talence, France
Carlos Saavedra, Queen's University, Kingston, ON, Canada
Roman Genov, University of Toronto, Toronto, ON, Canada

Publicity Co-Chairs

Zhihua Wang, Tsinghua University, Beijing, China
Ricardo Reis, Federal University of Rio Grande do Sul, Porto Alegre, Brazil
Magdy Bayoumi, University of Louisiana, Lafayette, LA, USA

Industry Liaison Co-Chairs

Peter Stokes, CMC Microsystems, Kingston, ON, Canada
Bob Gill, British Columbia Institute of Technology, Burnaby, BC, Canada

Finance Chair

Steven McClain, British Columbia Institute of Technology, Burnaby, BC, Canada

Media/Web Site Chair

Stephen Makonin, Simon Fraser University, Burnaby, BC, Canada

Technical Program Committee

Track 1: Analog and Mixed-Signal Circuits

Jean-Baptiste Begueret, University of Bordeaux, Talence, France **(Track Lead)**
Danilo Demarchi, Politecnico di Torino, Italy
Günhan Dündar, Boğaziçi University, Turkey
Jorge Fernandes, INESC-ID, Instituto Superior Técnico, Univ. de Lisboa, Portugal
Igor Filanovsky, University of Alberta, Edmonton, AB, Canada
Manideep Gande, Linear Technologies, San Jose, CA, USA
Erkan Isa, Fraunhofer-Gesellschaft, Munich, Germany
Gilles Jacquemod, University of Nice, France
Nima Maghari, University of Florida, Gainesville, FL, USA
Marcello de Matteis, University of Milano-Bicocca, Milan, Italy
Reza Molavi, University of British Columbia, Vancouver, Canada
Salvatore Pennisi, DIEES, University of Catania, Italy
Wenceslas Rahajandraibe, Aix-Marseille University, France
He Tang, University of Electronic Science and Technology of China, Chengdu, China

Track 2: Biomedical Circuits and Systems

Parisa Behnamfar, Fortinet, Technologies, Burnaby, BC, Canada
Benoit Gosselin, Université Laval, Québec City, QC, Canada **(Track Lead)**
Subhanshu Gupta, Washington State University, Pullman, WA, USA
Edith Kussener, IM2NP, ISEN, Toulon, France
Morgan Madec, ICube, University of Strasbourg, France

Track 3: CAD, EDA, and Design Tools

Marie Minerve Louërat, Université Pierre & Marie Curie, Paris, France
Haidar Harmanani, Lebanese American University, Byblos Campus, Lebanon
Roni Khazaka, McGill University, Montréal, QC, Canada
Ian O'Connor, Ecole Centrale de Lyon, France **(Track Lead)**
François Pecheux, University Pierre et Marie Curie, Paris, France
Leonid Goldgeisser, Mentor Graphics Corporation, Wilsonville, Oregon, USA

Track 4: Communication Circuits and Systems

Leonid Belostotski, University of Calgary, Calgary, AB, Canada
José Luis Gonzales, CEA-LETI, France
Eric Kerhervé, IMS Lab, Bordeaux, France **(Track Lead)**
Masum Hossain, University of Alberta, Edmonton, AB, Canada
Chadi Jabbour, Telecom ParisTech, Paris, France
Frédéric Nabki, Université du Québec à Montréal, Montréal, Canada
Jeff Walling, University of Utah, Salt Lake City, UT, USA

Track 5: Digital and Computing Circuits and Architectures

Massimo Alioto, National University of Singapore, Singapore **(Track Lead)**
Jean-Frederic Christmann, CEA-LETI, Lyon, France
Pasquale Corsonello, University of Calabria, Italy
Olivier Sentieys, IRISA, Lannion, France

Track 6: Digital Signal Processing and Multimedia

Sergio Bampi, UFRGS, Porto Alegre, Brazil

Luc Claesen, U Hasselt, Flanders, Belgium

Dietmar Fey, University of Erlangen-Nürnberg, Erlangen, Germany

Fabrice Monteiro, University of Lorraine, Metz, France

Yvon Savaria, Polytechnique Montréal, Montréal, QC, Canada **(Track Lead)**

Track 7: Embedded Systems

Michael Huebner, Ruhr-Universität Bochum, Bochum, Germany

Suzanne Lesecq, CEA-LETI, Grenoble, France **(Track Lead)**

Sébastien Pillement, University of Nantes, Nantes, France

Track 8: Energy Harvesting Circuits and Power Management

Cécile Belleudy, University of Nice, Nice, France

Vincent Frick, ICube Lab, Université de Strasbourg Strasbourg, France

Aldo Romanialdo, University of Bologna, Cesena, Italy

Aida Todri-Sanial, LIRMM, Montpellier, France **(Track Lead)**

Track 9: Microsystems, Imaging, & Sensory Circuits & Systems

Derek Ho, City University of Hong Kong, Hong Kong

Pascal Nouet, Université Montpellier II, Montpellier, France

Joris Pascal, FHNW, Muttens, Switzerland

Wilfried Uhring, ICube, Université de Strasbourg Strasbourg, France **(Track Lead)**

Track 10: Test and Verification

Patrick Girard, LIRMM, Montpellier, France **(Track Lead)**

Nicola Nicolici, McMaster University, Hamilton, ON, Canada

Sofiène Tahar, Concordia University, Montréal, QC, Canada

Osman Hasan, NUST, Islamabad, Pakistan

Track 11: Technology Trends

Sylvain Blayac, École des Mines de Saint-Étienne, Saint-Étienne, France

Jacques-Olivier Klein, IEF, University Paris Sud, Orsay, France **(Track Lead)**

Track 12: Special Sessions

Roman Genov, University of Toronto, Toronto, ON, Canada

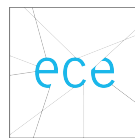
Carlos Saavedra, Queen's University, Kingston, ON, Canada

Thierry Taris, Bordeaux INP, and IMS Lab, University of Bordeaux, Talence, France

Sponsors



IEEE VANCOUVER SECTION



Electrical and
Computer
Engineering



a place of mind

THE UNIVERSITY OF BRITISH COLUMBIA



VANCOUVER
SPECTACULAR BY NATURE™

Show Your Badge:

Convention delegates are eligible to receive exclusive discounts at these participating member businesses. Please note many offers require you to book in person at Tourism Vancouver Visitor Centres. For more information, please visit:

<http://www.tourismvancouver.com/meetings/plan/show-your-badge/>

Welcome Message from the NEWCAS Committee

On behalf of the organizing committee, we are delighted to welcome you to the 14th IEEE International NEWCAS Conference (June 26 to 29, 2016) in Vancouver, BC, Canada. The Conference venue is the Vancouver Marriott Pinnacle Downtown Hotel. NEWCAS 2016 will continue the conference tradition to have a rich mix of technical and social programs. This year's program includes excellent tutorials, outstanding plenary talks, superb technical sessions, and wonderful networking and social events.

Conference highlights include:

Tutorials (Sunday, June 26, 2016):

- Tiny Inductively powered Battery Chargers,
by **Professor Gabriel Rincon-Mora** (Georgia Institute of Technology)
- Phase-Locked Clock Generation for SoC: Circuit and System Design Aspects
by **Professor Woogeun Rhee** (Tsinghua University)
- Development of Massively-Parallel Multimedia Algorithms and Applications in the Integrated Multi-Core/GPU Platform
by **Professor Saeid Nooshabadi** (Michigan Technological University)
- Optimizing NanoCMOS Circuits by Using Transistor Networks
by **Professor Ricardo Reis** (Universidade Federal do Rio Grande do Sul)

Plenary Talks (June 27 to 29, 2016):

- Design for Low Power: The Next Frontier
by **Professor Behzad Razavi**, UCLA
- Designing (Relatively) Reliable Systems with (Highly)Unreliable Components
by **Professor Massimo Alioto**, National University of Singapore
- mm-Wave CMOS to the Rescue: 5G and Beyond (xG) Communication and Enhanced BioSensing
by **Professor Ali Niknejad**, University of California, Berkeley

Technical Program (June 27 to 29, 2016): 18 technical sessions consisting of lecture sessions (2 parallel sessions each day) and one poster session per day on Tuesday and Wednesday.

Two panel discussions: "From RFID to IoT: Dreams and Reality" and the session organized by IEEE Women in Circuits and Systems (WiCAS) and Young Professionals (YP) groups.

Social and Networking Events (June 26 to 28, 2016): in the evening of Sunday, Monday, and Tuesday.

This year, a total of 225 technical papers were submitted to NEWCAS from 31 countries in Americas, Africa, Asia, and Europe. The technical program committee members solicited and received 739 expert reviews (average of 3.3 reviews per paper) in a timely manner. We would like to take this opportunity to warmly thank the Technical Program Committee members and all the reviewers.

After a rigorous selection for maintaining the high level of the conference, 101 regular papers were accepted (acceptance rate of 46.75% for regular papers). Furthermore, 9 contributions were accepted in two special sessions. During the conference, the committee will select a few top quality papers and will invite their authors to submit an extended version of their papers to the special issue of Analog Integrated Circuits and Signal Processing Journal published by Springer.

NEWCAS 2016 would not have been possible without the time and effort of many people. We would like to thank the Organizing Committee members, the Technical Program Committee members, the reviewers, the authors, the Special Sessions Organizers, Tutorial Organizers, Panel Organizers, the tutorial speakers, and keynote speakers. We would also wish to genuinely thank numerous volunteers who helped us with the organization of the conference. We sincerely thank all our sponsors for their generous support of the conference: IEEE Circuits and Circuits Society, IEEE Vancouver Section, le Regroupement Stratégique en Microsystème du Québec (ReSMiQ), Consulate General of France in Vancouver, Department of Electrical and Computer Engineering at the University of British Columbia, CMC Microsystems, e-Silicon, and Tourism Vancouver.

Enjoy NEWCAS 2016 conference and your stay in Vancouver.

Luc Hebrard, Sudip Shekhar, and Ljiljana Trajković
Technical Program Co-Chairs

Mohamad Sawan and Shahriar Mirabbasi
General Co-Chairs

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)

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)

10:15 to 10:30 - Coffee Break

12:00 to 13:30 – Lunch (Pinnacle Ballroom)

Sunday Afternoon, June 26

Point Grey Room

13:30 to 16:30

Phase-Locked Clock Generation for SoC: Circuit and System Design Aspects by Professor Woogeun Rhee (Tsinghua University)

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)

15:15 to 15:30 - Coffee Break

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 Zito¹, Dominique Morche²,
2-1 ¹Innovations for High Performance Microelectronics, Ireland; ²CEA-Leti, France

10:48 **Low-Power High-Speed Wireless Transceivers and Antennas for**
2-2 **Large-Scale Neural Implants**, Masoud Rezaei, Benoit Gosselin, Université Laval, Canada

11:06 **Design of Pulse Synthesizers for the Convergence of IR-UWB**
2-3 **Solutions**, Remy Vauché¹, Sylvain Bourdel³, Eloi Muhr¹, Jean Gaubert¹, Nicolas Dehaese¹, Frédéric Hameau², Hervé Barthelemy¹, ¹Aix-Marseille Université / Institut Matériaux Microélectronique Nanosciences de Provence, France; ²CEA-Leti, France; ³Université Grenoble Alpes, France

11:24 **Remote Monitoring of Vital Signs Using a CMOS UWB Radar**
2-4 **Transceiver**, Dag Wisland, Kristian Granhaug, Jan Roar Pley, Nikolaj Andersen, Stig Støa, Håkon Hjortland, Novelda AS, Norway

11-42 **Low-Latency Asynchronous Networking for the IoT: Routing Analog**
2-5 **Pulse Delays Using IR-UWB**, Marco Crepaldi¹, Alessandro Sanginario¹, Paolo Motto Ros¹, Danilo Demarchi², ¹Istituto Italiano di Tecnologia, Italy; ²Politecnico di Torino, Italy

Session 3 - Amplifiers

Monday Morning, June 27, Pinnacle III Ballroom

Session Chair: Igor Filanovsky, University of Alberta
Eric Kerherve, IMS Laboratory

- 10:30** **A Compact 90W Broadband Doherty Amplifier**, Al Freundorfer, Justin
3-1 Chan, Carlos Saavedra, Queen's University, Canada
- 10:48** **Top-Down Design and Synthesis of Inherently-Stable Integrator-**
3-2 **Based High-Order Amplifiers**, Aly Shoukry, Gordon Roberts, McGill
University, Canada
- 11:06** **Analysis and Design of Differential LNAs with on-Chip Transformers**
3-3 **in 65-nm CMOS Technology**, Takao Kihara, Shigesato Matsuda, Tsutomu
Yoshimura, Osaka Institute of Technology, Japan
- 11:24** **A Low-Power High-Speed Charge-Steering Comparator for High-Speed**
3-4 **Applications**, Ali Hassan, Mohamed Aboudina, Mohamed Refky, Cairo
University, Egypt
- 11:42** **A Digitally Programmable 50-150dB DC Gain Operational**
3-5 **Transconductance Amplifier in 130nm CMOS**, Ming Yang, Gordon
Roberts, McGill University, Canada

12:00 to 13:30 - Lunch Break (Pinnacle Ballroom I)

Session 4 - Digital Circuits and Systems I

Monday Afternoon, June 27, Pinnacle II Ballroom

Session Chair: Yvon Savaria - Ecole Polytechnique de Montreal
Ricardo Reis - UFRGS

- 13:30** **Byte-Based Partial-Match Instruction and Data Compression for High-**
4-1 **Performance and Low-Power Interconnects**, Sujan Kumar Saha, Jiangjiang Liu,
Lamar University, United States
- 13:48** **A Modified RNS-to-Binary Converter Scheme for**
4-2 **$\{2^{2n+1} - 1, 2^{2n+1}, 2^{2n} - 1\}$ Moduli Set**, Edem Bankas, Ohio University,
Ghana
- 14:06** **Redundant STT-MTJ-Based Nonvolatile Flip-Flops for Low Write-**
4-3 **Error-Rate Operations**, Naoya Onizawa, Takahiro Hanyu, Tohoku

Session 5 - Energy Harvesting Circuits I

Monday Afternoon, June 27, Pinnacle Ballroom III

Session Chair: Thierry Taris - IMS Laboratory
Dominique Morche - CEA LETI

- 13:30** **An ULP and Very Efficient Adaptively Biased LDO Regulator for Harvesting Application**, Nicola Verrascina¹, Jean-Baptiste Begueret¹, Mattia Borgarino², ¹University of Bordeaux, France, ²Università degli Studi di Modena e Reggio Emilia, Italy
- 13:48** **Optimally Pre-Damped Switched-Inductor Piezoelectric Energy-Harvesting Charger**, Siyu Yang, Gabriel Rincon-Mora, Georgia Institute of Technology, United States
- 14:06** **Multiple Energy-Shot Load Interface for Electrostatic Vibrational Energy Harvesters**, Mohammed Bedier¹, Dimitri Galayko², ¹Université Pierre-et-Marie-Curie / Université Paris-Sorbonne, France, ²Université Pierre-et-Marie-Curie / Sorbonne University, France
- 14:24** **Efficient Power Management Circuit for RF Energy Harvesting with 74.27% Efficiency at 623 nW Available Power**, Gaurav Saini, Soumik Sarkar, Mahima Arrawatia, Maryam Shojaei Baghini, Indian Institute of Technology Bombay, India
- 14:42** **Analysis, Design, and Characterization of Wireless Power Transfer Systems Using Conical Coils**, Parinaz Hadadtehrani¹, Soroush Dehghani¹, Reza Molavi¹, Vasudevan Janarthanan², Thomas Johnson¹, Shahriar Mirabbasi¹, ¹University of British Columbia, Canada, ²Fairleigh Dickinson University, Canada

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

Session 6 - CAD, EDA & Design Tools

Monday Morning, June 27, Pinnacle Ballroom II

Session Chair: Luc Hebrard - University of Strasbourg
Ljiljana Trajkovic - Simon Fraser University

- 15:30** **An Efficient Algorithm for 3D-IC TSV Assignment**, Cong Hao, Nan Ding,

- 6-1** Takeshi Yoshimura, Waseda University, Japan
- 15:48** **Sizing and Layout Integrated Optimizer for 28nm Analog Circuits**
6-2 **Using Digital PnR Tools**, François Stas, Gueric de Streel, David Bol, Université catholique de Louvain, Belgium
- 16:06** **Discrete-Time Modelling and Experimental Validation of an All-Digital PLL for Clock-Generating Networks**, Eugene Koskin¹, Elena Blokhina¹, Chuan Shan², Eldar Zianbetov³, Orla Feely¹, Dimitri Galayko², ¹University College Dublin, Ireland, ²Université Pierre-et-Marie-Curie/Sorbonne University, France, ³Spintronique et Technologie des Composants - Inac - CEA, France
- 16:24** **Improving Placement Algorithms by Using Visualization Tools**, Mateus Fogaça, Guilherme Flach, Marcelo Johann, Ricardo Reis, Universidade Federal do Rio Grande do Sul, Brazil
- 16:42** **High-Level Simulation of a PID Controller Based on Memristor**, Carlos Sánchez-López, Francisco Epimenio Morales-López, Miguel Angel Carrasco-Aguilar, Autonomous University of Tlaxcala, Mexico

Session 7 - CMOS and BiCMOS Circuits for High Data Rate Communication
--

Monday Afternoon, June 27, Pinnacle Ballroom III

Session Chair: Thierry Taris - IMS Laboratory
Yann Deval - IMS Laboratory

- 15:30** **10 Gbps, 560 fJ/B TIA and Modulator Driver for Optical Networks-on-Chip in CMOS 65nm**, José-Luis González-Jiménez¹, Robert Polster², Guillaume Waltener¹, Yvain Thonnart¹, Eric Cassan³, ¹Université Grenoble Alpes, France, ²Columbia University, United States, ³Université Paris-Sud, France
- 15:48** **0.3-42.5 GHz Wideband Common Emitter Amplifier Driver Unit in 55 nm SiGe BiCMOS for 60 Gb/s Silicon Photonic Mach-Zehnder Modulator**, Jérémie Prades¹, Eric Kerhervé¹, Anthony Ghiotto¹, Denis Pache², ¹University of Bordeaux, France, ²STMicroelectronics, France
- 16:06** **0.18-µm CMOS Driver Optimization for Maximum Data Rate Under Power and Area Constraints**, Audrey Michard¹, Pietro Maris Ferreira¹, Jean-François Carpentier², ¹CentraleSupélec/Université Paris-Saclay, France, ²STMicroelectronics, France
- 16:24** **A Digitally Tunable Stabilization Technique for Transimpedance**

7-4 Amplifiers in Optical Wireless and Visible Light Communication Links, Bassem Fahs, Asif Chowdhury, Mona Hella, Rensselaer Polytechnic Institute, United States

16:42 PM 7-5 A 180 GHz Frequency Multiplier in a 130nm SiGe BiCMOS Technology, Thomas Girg¹, Christopher Beck¹, Marco Dietz¹, Amelie Hagelauer¹, Dietmar Kissinger², Robert Weigel¹, ¹Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany; ²Technische Universität Berlin / Innovations for High Performance Microelectronics, Germany

Panel Discussion

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. Shahram Tafazoli, Motion Metrics,
Dr. Rabab Ward, University of British Columbia,
TBD

**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

Tuesday Morning, June 28, Pinnacle Ballroom II

Session Chair: Amine Miled - Université Laval
Benoit Gosselin - Université Laval

- 10:30** **A Current-Controlled Transceiver IC for Structural Health Monitoring,**
9-1 Hossein Zamani, Cheng Chen, Xinyao Tang, Pedram Mohseni, Soumyajit Mandal, Case Western Reserve University, United States
- 10:48** **Microfluidic Platform with Integrated Thin-Film Optical Oxygen**
9-2 **Sensors for Transient Hypoxia,** Samantha Grist, Jonathan Schmok, Andrea Díaz Gaxiola, Karen Cheung, University of British Columbia, Canada
- 11:06** **Low-Power and Low-Noise Fully Differential Difference Amplifier for**
9-3 **Sub-Nanoampere on-Chip Potentiostat,** Elnaz Ghodsevali¹, Mounir Boukadoum², Benoit Gosselin³, Amine Miled¹, ¹Laval University, Canada; ²Université du Québec à Montréal, Canada; ³Université Laval, Canada
- 11:24** **Hybrid Wiener and Partial Differential Equations Filter for**
9-4 **Biomedical Image Denoising,** Salim Lahmiri¹, Mounir Boukadoum², ¹École de Technologie Supérieure, Canada; ²Université du Québec à Montréal, Canada
- 11:42** **A Palmtop Platform for Miniaturized Dielectric Spectroscopy from**
9-5 **MHz to GHz,** Mehran Bakhshiani, Michael Suster, Pedram Mohseni, Case Western Reserve University, United States

Session 10 - DSP and multimedia

Tuesday Morning, June 28, Pinnacle Ballroom III

Session Chair: Michael Green - University of California Irvine
Yvon Savaria - Ecole Polytechnique de Montreal

- 10:30** **Digital Direct-Driven Speaker Architecture Using Segmented Pulse**
10-1 **Shaping Technique**, Go Harumi, Satoshi Saikatsu, Michitaka Yoshino, Akira Yasuda, Hosei University, Japan
- 10:48** **Improved Alias Rejection Using Interleaved CIC Decimation Filter**,
10-2 Karthikeyan Saravanan, Dinesh Ganesan, Binsu Kailath, Indian Institute of Information Technology Design and Manufacturing Kancheepuram, India
- 11:06** **Performance Characterization of an SCMA Decoder**, Roya Alizadeh,
10-3 Normand Bélanger, Yvon Savaria, François-Raymond Boyer, Polytechnique Montréal, Canada
- 11:24** **Using Adder Compressors for Power-Efficient 2-D Approximate**
10-4 **Discrete Tchebichef Transform**, Guilherme Paim², Eduardo Costa¹,
¹Universidade Católica de Pelotas, Brazil; ²Universidade Federal de Pelotas, Brazil
- 11:42** **Adjusting Video Tiling to Available Resources in a Per-Frame Basis in**
10-5 **High Efficiency Video Coding**, Giovanni Malossi², Daniel Palomino²,
Claudio Diniz¹, Altamiro Susin², Sergio Bampi², ¹Universidade Católica de Pelotas, Brazil; ²Universidade Federal do Rio Grande do Sul, Brazil

12:00 to 13:30 – Lunch Break (Pinnacle Ballroom I)

Poster Session - Analog and Mixed Circuit Building Blocks

Tuesday Afternoon, June 28, Shaughnessy Room, (13:00 - 15:00)

Session Chair: Luc Hebrard - University of Strasbourg
Yvon Savaria - Ecole Polytechnique de Montreal

- A-1** **Data Transient Insensitive Phase-Locked Loops**, Durand Jarrett-Amor, Fei Yuan, Ryerson University, Canada
- A-2** **A Start-Up Free 200nW Bandgap Voltage Reference**, Chundong Wu², Wang Ling Goh², Yongkui Yang², Alan Chang³, Xi Zhu¹, Lei Wang³,
¹Macquarie University, Australia, ²Nanyang Technological University, Singapore, ³Nanyang Technological University / NXP Semiconductors Singapore Pte Ltd, Singapore

- A-3 A 1.15 μ W, 90dB PSRR, 4 dBm EMI Resistant, NMOS-Only Voltage Reference**, David Cordova¹, Pedro Toledo¹, Hamilton Klimach², Sergio Bampi², Eric Fabris², ¹NSCAD Microeletronica, Brazil, ²Universidade Federal do Rio Grande do Sul, Brazil
- A-4 A 28-Gb/s Transmitter with 3-Tap FFE and T-Coil Enhanced Terminal in 65-nm CMOS Technology**, Naiwen Zhou, Linghan Wu, Ziqiang Wang, Xuqiang Zheng, Weidong Cao, Chun Zhang, Fule Li, Zhihua Wang, Tsinghua University, China
- A-5 A Programmable CMOS Feedback IC for Reconfigurable MEMS-Referenced Oscillators**, Hesam Khanmohammad, Peng Wang, Christopher Babecki, Philip Feng, Soumyajit Mandal, Case Western Reserve University, United States
- A-6 A Comparative Study of Body Biased Time-to-Digital Converters Based on Stochastic Arbiters and Stochastic Comparators**, James Tandon², Satoshi Komatsu³, Takahiro Yamaguchi¹, Kunihiro Asada³, ¹Advantest Corporation, Japan, ²California State University, East Bay, United States, ³University of Tokyo, Japan
- A-7 Aperture Error Reduction Technique for Subrange SAR ADC**, Ying Ju, Fule Li, Xiuju He, Chun Zhang, Zhihua Wang, Tsinghua University, China
- A-8 Digital Compensation of DC-DC Converter Voltage Ripple for Switched-Capacitor Power Amplifiers**, Stefan Trampitsch³, Daniel Gruber¹, Michael Lunglmayr², Edwin Thaller¹, Mario Huemer², ¹Intel Austria GmbH, Austria, ²Johannes Kepler University Linz, Austria, ³Johannes Kepler University Linz / Intel Austria GmbH, Austria
- A-9 Statistical Computational Methods for Mixed-Signal Performance Metrics Under Process Variations and Noise Models**, Mani Soma, Tong Zhang, Jacques Rudell, University of Washington, United States
- A-10 A Fixed Window Level Crossing ADC with Activity Dependent Power Dissipation**, Austin Ogwen, Patrick Degenaar, Victor Khomenko, Alex Yakovlev, Newcastle University, United Kingdom
- A-11 Adaptive UHF RFID Analog Front End for Communication Range Improvement**, Damien Jausseran², Emmanuel Bergeret¹, Jean Gaubert¹, Christophe Moreaux³, Gary Seigneuret³, ¹Aix-Marseille Université / Institut Matériaux Microélectronique Nanosciences de Provence, France, ²Institut Matériaux Microélectronique Nanosciences de Provence, France, ³INVIA, France

Poster Session - Digital Circuits and Systems II

Tuesday Afternoon, June 28, Shaughnessy Room, (13:00 - 15:00)

Session Chair: Yvon Savaria - Ecole Polytechnique de Montreal
Luc Hebrard - University of Strasbourg

- B-1** **A Correction Code for Multiple Cells Upsets in Memory Devices for Space Applications**, Helano Castro, Jarbas da Silveira, Alexandre Coelho, Felipe e Silva, Philippe Magalhães, Otávio de Lima Jr., Universidade Federal do Ceará, Brazil
- B-2** **A Study of a Top-Down Error Correction Technique Using Recurrent-Neural-Network-Based Learning**, Masanori Natsui, Naoto Sugaya, Takahiro Hanyu, Tohoku University, Japan
- B-3** **A Versatile Quaternion Multiplier Based on Sparse-Iteration 4D CORDIC**, Marek Parfieniuk¹, Sang Yoon Park², ¹Bialystok University of Technology, Poland; ²Myongji University, Korea, South
- B-4** **Design of an Area-Efficient Partial-Sum Architecture for Polar Decoders Based on New Matrix Generator**, Yun-Nan Chang, National Sun Yat-sen, Taiwan

Poster Session - Energy Harvesting Circuits II

Tuesday Afternoon, June 28, Shaughnessy Room, (13:00 - 15:00)

Session Chair: Yvon Savaria - Ecole Polytechnique de Montreal
Luc Hebrard - University of Strasbourg

- C-1** **A Battery-Less, Self-Sustaining RF Energy Harvesting Circuit with TFETs for μ W Power Applications**, David Cavalheiro², Francesc Moll², Stanimir Valtchev¹, ¹Faculdade de Ciências e Tecnologia da Universidade Nova de Lisboa, Portugal; ²Universitat Politècnica de Catalunya, Spain
- C-2** **A Fully-Synthesizable 0.6V Digital LDO with Dual-Loop Control Using Digital Standard Cells**, Jun Liu, Nima Maghari, University of Florida, United States
- C-3** **Loss Analysis of Flyback in Discontinuous Conduction Mode for Sub-mW Harvesting Systems**, Armande Capitaine¹, Gaël Pillonnet¹, Thibaut Chailloux¹, Firas Khaled², Olivier Ondel², Bruno Allard², ¹Université Grenoble Alpes, France, ²Université de Lyon / Institut National des Sciences Appliquées de Lyon, France

Poster Session - Technology Trends

Tuesday Afternoon, June 28, Shaughnessy Room, (13:00 - 15:00)

Session Chair: Yvon Savaria - Ecole Polytechnique de Montreal

Luc Hebrard - University of Strasbourg

D-1 **Innovative Device Source/Drain and Channel Implantation for MOS Transistors in Ultra Low Power Subthreshold Circuit Applications,** Munem Hossain, Masud Chowdhury, University of Missouri-Kansas City, United States

D-2 **Novel Ising Model Using Dimension-Control for High-Speed Solver for Ising Machines,** Kenta Someya, Ryoto Ono, Takayuki Kawahara, Tokyo University of science, Japan

Session 11 - Biomedical Circuits and Systems 1

Tuesday Afternoon, June 28, Pinnacle Ballroom II

Session Chair: Benoit Gosselin - Université Laval

Amine Miled - Université Laval

13:30 **Design of High-Voltage-Tolerant Level Shifter in Low Voltage CMOS**
11-1 **Process for Neuro Stimulator,** Zhicong Luo, Ming-Dou Ker, National Chiao-Tung University, Taiwan

13:48 **A Small-Footprint Body Channel Communication Transceiver Using**
11-2 **Only One Phase-Locked Loop as Modulator and Demodulator,** Bo Wang, Haibin Shao, Chaoxun Wang, Peking University Shenzhen Graduate School, China

14:06 **SAW Resonator Oscillator Based Injection Locked OOK Transmitter**
11-3 **for MedRadio Spectrum,** Abhishek Srivastava, Devarshi Das, Dinesh Kumar Sharma, Maryam Shojaei Baghini, Indian Institute of Technology Bombay, India

14:24 **A Precise 360°-Range Phase Detector Based on an N-Path Filter,**
11-4 **Siavash Yazdi, Michael Green, University of California, Irvine, United States**

14:42 **Low Emission, Open Loop MAC Protocol Compliant Implantable FSK**
11-5 **Modulator,** Ruchir Saraswat, Esther Rodriguez-Villegas, Zhou Jiang, Imperial College London, United Kingdom

Panel Session - From RFID to IoT, Dreams and Reality

Tuesday Afternoon, June 28, Pinnacle Ballroom III (13:30 – 15:00)

Organized by: Magdy Bayoumi, University of Luisiana

Panelists: Massimo Alioto, National University of Singapore
Wolfgang Richter, EPIC Semiconductors
Zhihua Wang, Tsinghua University
TBD
TBD

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

- 15:30** **A 77.1dB/108.9dB SNDR Dual-Mode Delta-Sigma Modulator**, Ning Yan,
12-1 Dongmei Li, Guolin Li, Zhihua Wang, Tsinghua University, China
- 15:48** **A 96.4 dB High-Pass Delta-Sigma Modulator with Dynamic Biasing**
12-2 **and Tree-Structured DEM**, Nikola Ivanisevic, Saul Rodriguez, Ana Rusu,
KTH Royal Institute of Technology, Sweden
- 16:06** **An 11-Bit 200MS/s Subrange SAR ADC with Charge-Compensation-**
12-3 **Based Reference Buffer**, Shushu Wei, Ying Ju, Fule Li, Zhihua Wang,
Tsinghua University, China
- 16:24** **A Multi-Channel Sigma-Delta Modulator for Subband Digital**
12-4 **Predistortion with LTE Signals**, Kelly Tchambake, Dang-Kiên Germain
Pham, Chadi Jabbour, Patricia Desgreys, Patrick Loumeau, Télécom
ParisTech, France
- 16:42** **SMASH-MASH Delta-Sigma Modulator Using Noise-Shaping**
12-5 **Quantizers**, Changsok Han, Taewook Kim, Nima Maghari, University of
Florida, United States

Session 13 - Image and Radiation Sensors

Tuesday Afternoon, June 28, Pinnacle Ballroom III

Session Chair: Ming-Dou Ker - National Chiao-Tung University
Frédéric Nabki - Université du Québec à Montréal

- 15:30** **A Low-Power Continuous-Reset CMOS Charge-Sensitive Amplifier for**
13-1 **the Readout of Solid-State Radiation Detectors,** Mohammad
Beikahmadi², Krzysztof Iniewski¹, Shahriar Mirabbasi², ¹Redlen
Technologies Inc., Canada; ²University of British Columbia, Canada
- 15:48** **Sub-Nanosecond Gated Photon Counting for High Spatial Resolution**
13-2 **CMOS Imagers,** Octavian Maciu, Wilfried Uhring, Jean-Baptiste Kammerer,
Jean-Pierre Le Normand, Norbert Dumas, Foudil Dadouche, Luc Hebrard,
Université de Strasbourg / ICube, France
- 16:06** **Line Buffer Reduction for LUT-Based Real-Time Image Inverse**
13-3 **Warping,** Yufeng Lu², Xiaohua Luo², Yimu Wang¹, Luc Claesen¹, ¹Hasselt
University, Belgium; ²Zhejiang University, China
- 16:24** **A 100MHz, 1.2V, $\pm 1V$ Peak-to-Peak Output, Double-Bus Single Ended-**
13-4 **to-Differential Switched-Capacitor Amplifier for Multi-Column CMOS**
Image Sensors, Ali Zadeh, University of Southern California, United States
- 16:42** **Parallel Hybrid Bispectrum-Multiframe Blind Deconvolution**
13-5 **Algorithm for Horizontal Imaging,** Solmaz Hajmohammadi, Saeid
Nooshabadi, Michigan Technological University, United States

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 μ m CMOS for High**
15-1 **Frequency Ultrasound Imaging Application**, Yuxuan Tang², Yulang
Feng², Zhiheng Zuo², Qingjun Fan², Cheng Fang¹, Jun Zou¹, Jinghong Chen²,
¹Texas A&M University, United States, ²University of Houston, United
States
- 10:48** **Ultra-High Sensitivity, Low-Power Dual Chopper Signal Conditioning**
15-2 **Circuit for Integrated Sensors**, Parisa Vejdani¹, Karim Allidina², Frederic
Nabki¹, ¹Université du Québec à Montréal, Canada, ²MEMS Vision
International Inc, Canada
- 11:06** **Mixed-Mode Self-Calibrated Amplitude Control Scheme for MEMS**
15-3 **Vibratory Gyroscopes**, Ahmed Sawaby, Amr Ahmed, Mohamed Abozeid,
Hassan Ali, Mohamed Aboudina, Cairo University, Egypt
- 11:24** **3-Axis High Q MEMS Accelerometer with Simultaneous Damping**
15-4 **Control**, Lavinia Elena Ciotirca¹, Olivier Bernal², Hélène Tap², Jérôme
Enjalbert³, Thierry Cassagnes³, ¹NXP Semiconductors, ²Ecole Nationale
Supérieure d'Electrotechnique, d'Electronique, d'Informatique, d'
Hydraulique et des, France, ³NXP Semiconductors, France

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 Puyal¹, Alexandre Siligaris¹, José-Luis González-Jiménez², Cédric Dehos¹, Frédéric Hameau¹, Aurélien Larie¹, Laurent Dussopt¹, Eric Mercier¹, ¹CEA-Leti, France, ²Université Grenoble Alpes, France
- 10:48
16-2** **A 0.3 nJ/Bit Super-Regenerative Pulse UWB Receiver with Track and Detection**, Joshua Kim¹, Michael Green², ¹Boeing Company, United States, ²University of California, Irvine, United States
- 11:06
16-3** **A Concurrent Transmitter in CMOS 28nm FDSOI Technology Based on Walsh Sequences Generator**, Nassim Bouassida¹, François Rivet¹, Yann Deval¹, David Duperray², Andreia Cathelin², ¹Laboratoire de l'Intégration du Matériau au Système/Université de Bordeaux, France, ²STMicroelectronics, France
- 11:24
16-4** **A Transformer Combined Quadrature Switched Capacitor Power Amplifier in 65nm CMOS**, Vladimir Aparin¹, Jeremy Dunworth¹, Lee Seward¹, Wen Yuan², Jeffrey Walling², ¹Qualcomm Inc., United States; ²University of Utah, United States
- 11:42
16-5** **EPC Gen-2 UHF RFID Tags with Low-Power CMOS Temperature Sensor Suitable for Gas Applications**, Mohamed Zgaren¹, Saqib Mohamad², Abbes Amira³, Mohamad Sawan¹, ¹Polytechnique Montréal, Canada, ²Hong Kong University of Science and Technology, Hong Kong, ³Qatar University, Qatar

12:00 to 13:30 – Lunch Break (Pinnacle Ballroom I)

Poster Session - Analog and Mixed Circuit Building Blocks

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

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

- E-2 Channel Aware Receiver Front End for Low Power 2.4 GHz Wireless Sensor Network - a System Level Analysis**, Jennifer Zaini¹, Frédéric Hameau¹, Thierry Taris³, Dominique Morche¹, Le Quang Vinh Tran², Patrick Audebert¹, ¹CEA-Leti, France; ²ERCOM TELECOM, France; ³University of Bordeaux, France
- E-3 A Half-Rate 100 Gb/s Injection-Locked Clock/Data Recovery Circuit**, Behzad Samavaty, Michael Green, University of California, Irvine, United States
- E-4 PLL Based BFSK Subcarrier Generator for FM-UWB Transmitter**, Mohamed Ali¹, Mohamad Sawan¹, Heba Shawkey², Abdelhalim Zekry³, ¹Polytechnique Montréal, Canada, ²Electronics Research Institute, Egypt, ³Polytechnique Montréal, Canada

Poster Session - Biomedical Circuits and Systems 2

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

Session Chair: Benoit Gosselin - Laval University

- F-1 A Charge-Pump Based Multi-Mode Stimuli Generator for Cardiac Pacemaking**, Ali Esmailian, Ali Shaker, Iman Ghotbi, Omid Shoaie, University of Tehran, Iran
- 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
- F-3 A Low-Cost Camera-Based Transducer Tracking System for Freehand Three-Dimensional Ultrasound**, Mohammad Baba¹, Otmane Ait Mohamed¹, Falah Awwad², Mohammad Daoud³, ¹Concordia University, Canada, ²United Arab Emirates University, U.A.E ³German Jordanian University, Jordan

Poster Session - Communication Circuits and Systems
--

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

Session Chair: Jeffrey Walling - University of Utah

- G-1 A Fast Systolic Priority Queue Architecture for a Flow-Based Traffic Manager**, Imad Benacer, François-Raymond Boyer, Normand Bélanger,

Yvon Savaria, Polytechnique Montréal, Canada

- G-2 High Speed Serial Interface Transceiver Controller Based on JESD204B**, Zhaoming Wu, Chun Zhang, Fule Li, Zhihua Wang, Tsinghua University, China
- G-3 Quad-Level Carrier Width Modulation Demodulator for Micro-Implants**, Aref Trigui¹, Mohamed Ali¹, Ahmed Chiheb Ammari², Yvon Savaria¹, Mohamad Sawan¹, ¹Polytechnique Montréal, Canada, ²King Abdulaziz University, Saudi Arabia
- G-4 Towards LTE Physical Layer Virtualization on a COTS Multicore Platform with Efficient Scheduling**, Michel Gémieux, Yvon Savaria, Guchuan Zhu, Jean-François Frigon, Polytechnique Montréal, Canada

Poster Session - Design Tools

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

Session Chair: Jeffrey Walling - University of Utah

- K-1 PEVaS: Power and Execution-Time Variation-Aware Scheduling for MPSoC**, Komei Nomura¹, Yasuhiro Takashima¹, Yuichi Nakamura², ¹University of Kitakyushu, Japan, ²NEC Corporation, Japan

Poster Session - Digital Signal Processing and Embedded Systems
--

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

Session Chair: Jeffrey Walling - University of Utah

- M-1 ORVD-Trellis Based MIMO Detection**, Dominik Auras, Rainer Leupers, Gerd Ascheid, Rheinisch-Westfälische Technische Hochschule Aachen, Germany
- M-2 Image Super-Resolution with Multi-Channel Convolutional Neural Networks**, Yu Kato, Shinya Ohtani, Nobutaka Kuroki, Tetsuya Hirose, Masahiro Numa, Kobe University, Japan
- M-3 An Evaluation Framework of OS-Level Power Managements for the big.LITTLE Architecture**, Hideki Takase¹, Kazumi Aono¹, Yutaka Matsubara², Kazuyoshi Takagi¹, Naofumi Takagi¹, ¹Kyoto University, Japan; ²Nagoya University, Japan

Poster Session - Microsystems and Sensory Circuits & Systems

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

Session Chair: Benoit Gosselin - Laval University

- T-1 Optimization of in-Plane SiC Capacitive Accelerometers Design Parameters**, Ahmad Alfaifi¹, Ibrahim Alhomoudi², Mourad El-Gamal¹,
¹McGill University, Canada, ²King Abdulaziz City for Science and Technology, Saudi Arabia
- T-2 An Integrated Full-Bridge Class-DE Ultrasound Transducer Driver for HIFU Applications**, Ruiqi Song, Carlos Christoffersen, Samuel Pichardo, Laura Curiel, Lakehead University, Canada
- T-3 Design of a DCO Based on Worst-Case Delay of a Self-Timed Counter and a Digitally Controllable Delay Path**, Oyinkuro Benafa, Austin Ogwen, Delong Shang, Alex Yakovlev, Newcastle University, United Kingdom
- T-4 Monitoring SRAM BTI Degradation by Current-Based Tracking Technique**, Peyman Pouyan, Esteve Amat, Antonio Rubio, Universitat Politècnica de Catalunya, Spain

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

Session 17 - Analog Building Blocks

Wednesday Afternoon, June 29, Pinnacle Ballroom II

Session Chair: Danilo Demarchi - Politecnico di Torino
Jean-Baptiste Begueret - IMS Laboratory

- 15:30 Differential Integrator Pixel Architecture for Dark Current Compensation in CMOS Image Sensors**, Marzieh Mehri Dehnavi, Yves Audet, Elham Khamsehashari, Polytechnique Montréal, Canada
- 17-1**
- 15:48 CMOS Implementation of a Low Power Absolute Value Comparator Circuit**, Saam Iranmanesh, George Raikos, Zhou Jiang, Esther Rodriguez-Villegas, Imperial College London, United Kingdom
- 17-2**
- 16:06 On Design of Memory Retention LDO Regulator**, Igor Filanovsky¹, Luis Bica Oliveira², Vadim Ivanov³, ¹ University of Alberta, Canada,
- 17-3**

²Universidade di Nova, Portugal, ³Texas Instruments, United States

16:24 **On Lossy Memristive Behavior of Metal Conductors**, Todd Wey, Chris
17-4 Nadovich, Lafayette College, United States

Session 18 - Frequency Generation
--

Wednesday Morning, June 29, Pinnacle Ballroom III

Session Chair: Reza Molavi - University of British Columbia

15:30 **A Phasor-Domain Study of Injection-Locking of Harmonic Oscillators**
18-1 **with Multiple Injections**, Fei Yuan, Ryerson University, Canada

15:48 **A 2.6GHz Subharmonically Injection-Locked PLL with Low-Spur and**
18-2 **Wide-Lock-Range Injection**, Naohiro Fujii, Shuei Morishita, Takao Kihara,
Tsutomu Yoshimura, Osaka Institute of Technology, Japan

16:06 **A Wideband MDLL with Jitter Reduction Scheme for Forwarded Clock**
18-3 **Serial Links in 40 nm CMOS**, Kiarash Gharibdoust¹, Armin Tajalli², Yusuf
Leblebici¹, ¹École Polytechnique Fédérale de Lausanne, Switzerland;
²Kandou Bus, Switzerland

16:24 **A Fully Integrated, 1- μ s Start-Up Time, 32-MHz Relaxation Oscillator**
18-4 **for Low-Power Intermittent Systems**, Hiroki Asano, Tetsuya Hirose, Taro
Miyoshi, Keishi Tsubaki, Toshihiro Ozaki, Nobutaka Kuroki, Masahiro
Numa, Kobe University, Japan

17:00 to 17:30 - Closing Remarks and Best Student Paper Awards Pinnacle Ballroom II
--

Notes

Notes

Notes

NEWCAS 2017 will be held in Strasbourg

June 25 to 28, 2017



Looking forward to seeing you all in Strasbourg.

