MONDAY 11 NOVEMBER 2013

09.00 Opening and welcome
Romualdas Navickas, Vilnius Gediminas Technical University (LT)

09.15 Invited talk: Self-Formation processes in High-Speed Integrated Circuits
Romualdas Navickas, VGTU (LT)

10.00 High Aspect Ratio Lateral Electrode Nano Gap Rectangular Plate Micro-Resonator Novel Process
Srinivasa Reddy Kuppireddi, Oddvar Søråsen, Srinivasa Reddy Kuppireddi, University of Oslo (NO)

10.20 An Analytical Model for Spectral Peak Frequency Prediction of Substrate Noise in CMOS Substrates
Ming Shen and Jan H. Mikkelsen, Aalborg University (DK)

10.40 Coffee break

1.1 Digital Systems
CHAIR: Arturas Serackis, Vilnius Gediminas Technical University (LT)

11.10 At-Speed Self-Testing of High-Performance Pipe-Lined Processing Architectures
Maksim Gorev, Raimund Ubar, Peeter Ellervee, Sergei Devadze, Jaan Raik, Mart Min, Tallinn University of Technology (EE)

11.30 3D Volumetric Display Design Challenges
Krīss Osmanis, Gatis Valters, Ihlmārs Osmanis, SIA EuroLCDs (LV)

11.50 Design-Space Exploration of the Configurable 32 bit VLIW Processor CoreVA for Signal Processing Applications
Gregor Sievers, Peter Christ, Julian Einhaus, Thorsten Jungeblut, Mario Porrmann, Ulrich Rückert, Bielefeld University (DE)

1.2 Analog Circuits
CHAIR: Erik Bruun, Technical University of Denmark (DK)

11.10 1.8 W, 19 MHz Envelope Amplifier for Envelope Tracking and Envelope Elimination and Restoration
Simo Hietakangas, Mikko Hietanen, Timo Rahkonen, University of Oulu (FI)

11.30 A Integrated High Voltage Controller for a Reconfigurable Antenna Array
Jing Ning, Klaus Hofmann, TU Darmstadt (DE)

11.50 Design of a CMOS Single Stage Dual-Mode SC C/V Converter for Capacitive Sensors
Shenjie Wang, Jose Luis Merino, Francisco Molina-Lopez, Danick Briand, Catherine Dehollain, Ecole Polytechnique Federale de Lausanne (CH)

12.10 Lunch

2. Education and Training
CHAIR: Viktor Öwall, Lund University (SE)

13.30 Trends in University Programs in Nanoelectronics and Microsystems
Erik Bruun, Ivan Ring Nielsen, Technical University of Denmark (DK)
13.50 How to Implement an Experimental Course on Analog IC design in a Standard Semester Schedule
Ivan H. H. Jørgensen, Niels Markervillumsen, Technical University of Denmark (DK)

14.10 Micro- and Nanoelectronics Education in Vilnius Gediminas Technical University
Vaidotas Barzdenas, Romualdas Navickas, Vilnius Gediminas Technical University (LT)

3. Poster Session I
14.30 Coffee / Poster Session

Critical Path Analysis of Two-channel Interleaved Digital MASH Delta Sigma Modulators
Ameya Bhide, Atila Alvandpour, Linköping University (SE)

Combined RF and Multilevel PWM Switch Mode Power Amplifier
Muhammad Fahim Ul Haque, Ted Johansson, Dake Liu, Linköping University (SE)

Feasibility of a cryogenic SiGe amplifier at 4 K
Markku Åberg, Jan Saijets, VTT (FI)

Comparison of Static and Memory Predistortion in Envelope Tracking System
Marko Neitola, Timo Rahkonen, University of Oulu (FI)

Implementing OCEAN Scripts in RF Circuit Design
Aleksandr Vasjanov, Vaidotas Barzdenas, John C. Liobe, Aleksandr Vasjanov, Vaidotas Barzdenas, John C. Liobe, Vilnius Gediminas Technical University (LT)

4.1 RF Power Amplifiers
CHAIR: Henrik Sjöland, Lund University (SE)

Self-heating and Memory Effects in RF Power Amplifiers Explained Through Electro-Thermal Modeling
Wei Wei, Ole Kiel Jensen, Jan H. Mikkelsen, Aalborg University (DK)

3.5 GHz Triple Cascaded Current-Reuse Low Noise Amplifier
Muh-Dey Wei, Dirk Bormann, Stefan Kaehlert, Tobias D. Werth, Sheng-Fuh Chang, Renato Negra, Aachen University (DE)

Modeling and Predistortion of Envelope Tracking Power Amplifiers using a Memory Binomial Model
Felice Tafuri, Torben Larsen, Aalborg University (DK)

4.2 Analog to Digital Converters
CHAIR: Tor S. Lande, University of Oslo (NO)

Algorithmic Time-to-Digital Converter
Pekka Keränen, Juha Kostamovaara, University of Oulu (FI)

16.30 Break

19.00 Dinner

TUESDAY 12 NOVEMBER 2013

09.00 Invited talk: Wireless Technologies Competing for a Seat in the 5G Bandwagon
Petar Popovski, Aalborg University (DK)

09.45 Evaluation of Non-contact Flexible Electrodes Connected with a Customized IC –Steps towards a Fully Integrated ECG Sensor
Geng Yang, Li Xie, Li-Rong Zheng, Royal Institute of Technology (SE)

10.05 Interpolation by a Prime Factor other than 2 in Low-Voltage Low-Power sigma-delta DAC

15.30 A 7-bit 50MS/s Single-ended Asynchronous SAR ADC in 65nm CMOS
Ye Xu, Trond Ytterdal, Norwegian University of Science and Technology (NO)

15.50 A 31.25/125MSps Continuous–Time ΔΣ ADC with 64/59dB SNDR in 130nm CMOS
Shubo Yan, Mattias Andersson, Henrik Sjöland, Lund University (SE)

16.10 Algorithmic Time-to-Digital Converter
Pekka Keränen, Juha Kostamovaara, University of Oulu (FI)
5. Poster Session II

10.25 Coffee / Poster Session

Limited Active Harmonic Compensation in a Grid-Connected Photovoltaic Inverter
Andrius Platakis, Algirdas Baskys, Nerijus Paulauskas, Vilnius Gediminas Technical University (LT)

Settling Performance Enhancement by Pre-charging Technique in Switched-Capacitor Circuit
Jia Sun, Timo Rahkonen, University of Oulu (FI)

A Simple All MOS Voltage Reference for RFID Applications
Shailesh Singh Chouhan, Kari Halonen, Aalto University (FI)

SRT Radix-2 Dividers with (5,4) Redundant Representation of Partial Remainder
Alexandru Amaricai, Oana Boncalo, University Politehnica of Timisoara (RO)

Sleep Apnea Pre-Screening on Neonates and Children with Shoe Integrated Sensors
Mairo Leier, Gert Jervan, Tallinn University of Technology (EE)

Area and Power Reduction in DFT Based Channel Estimators for OFDM Systems
Michal Stala, Rakesh Gangaraiah, Ove Edfors, Viktor Öwall, Lund University (SE)

6.1 Electronic Devices I
CHAIR: Atila Alvandpour, Linköping University (SE)

11.00 Analysis of Band-to-band Mixing Distortion Contributions in Some Usual Circuit Topologies
Janne Aikio, Timo Rahkonen, Tero Korkala, University of Oulu (FI)

11.20 Low Power Front End Electronics for In-Probe Beamforming in Ultrasound Imaging
Surya Sharma, Prof Trond Ytterdal, Norwegian University of Science and Technology (NO)

11.40 A Temperature Sensor with $3\sigma$ Inaccuracy of $+0.5/-0.75$ degree C and Energy per Conversion of $0.65$ µJ Using a $0.18$ µm CMOS Technology
Mikail Yucetas, Mika Pulkkinen, Jakub Gronicz, Kari Halonen, Aalto University (FI)

6.2 Communication Circuits
CHAIR: Peeter Ellervee, Tallinn University of Technology (EE)

11.00 Implementation of a Highly-Parallel Soft-Output MIMO Detector with Fast Node Enumeration
Stefan Granlund, Liang Liu, Chenxin Zhang, Viktor Öwall, Lund University (SE)

11.20 An LC-Based Tunable Low-Isolation Device for Adaptive Duplexers
Mohammadreza Pourakbar, Markus Törmänen, Michael Faulkner, Henrik Sjöland, Lund University (SE)

11.40 A Study of Low-Power Crystal Oscillator Design
Kin Keung Lee, Kristian Granhaug, Nikolaj Andersen, University of Oslo (NO)

12.00 Lunch

13.10 Invited talk: Correlator design and implementation for GNSS receivers
Ville Eerola, Tampere University of Technology (FI)

13.55 NORCHIP 2014

7.1 Electronic Devices II
CHAIR: Romualdas Navickas, Vilnius Gediminas Technical University (LT)

14.00 An FPGA-Based High-Performance Wireless Vibration Analyzer
Khurram Shahzad, Bengt Oelmann, Mid Sweden University (SE)

14.20 Highly Linear Open-loop Output Driver Design for High Speed Capacitive DACs
Quoc-Tai Duong, Jerzy J. Dąbrowski, Atila Alvandpour, Linköping University (SE)

14.40 Single Poly Non-Volatile Memory Cells for Miniaturized Sensors in 90nm CMOS Technology
Ali Zaher, Philipp Häfliger, Oslo University (NO)

7.2 Receivers
CHAIR: Ville Eerola, Tampere University of Technology (FI)

14.00 Next Generation Digital Front-End for Multi-Standard Concurrent Reception
Isael Diaz, Chenxin Zhang, Lieven Hollevoet, Jim Svensson, Joachim Rodrigues, Liesbet Van der Perre, Lund University (SE)
SESSION ORGANISATION
Both oral and poster presentations have been carefully selected through a regular review process and they will all appear in the proceedings. Equal quality measures have been applied to posters and lectures. Papers for oral presentation are selected based on thematic composition of sessions.

PROCEEDINGS
USB stick proceedings of the conference contributions will be distributed upon registration. Each participant will receive a copy of the proceedings. Proceedings and all presentations will be in English.

BEST ANALOG PAPERS
The Management Committee has since 1992 made special issues of the Springer International Journal on Analog Integrated Circuits and Signal Processing. Also this year we will publish a number of the best analog papers in the journal. http://www.springer.com/engineering/circuits+%26+systems/journal/10470

BEST DIGITAL PAPERS
The best digital papers will be invited to publish in the international Elsevier journal Embedded Hardware Design (MICPRO). http://www.elsevier.com/wps/find/journaldescription.cws_home/525449/description#description

GENERAL SCOPE OF THE CONFERENCE
The NORCHIP conference is the main microelectronics event of the Nordic countries. The annual IEEE CAS sponsored conference covers all areas of microelectronics, spanning from large digital systems to simple analog circuits. The wide scope of NORCHIP is intentional promoting cross-field collaboration. NORCHIP is a well established conference with representation from both academia and industry. Papers of the highest scientific and technical quality are presented together with selected invited speakers and pre-conference tutorial sessions.

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- Vice chair: Arturas Serackis, Vilnius Gediminas Technical University (LT)
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CONFERENCE VENUE / ACCOMMODATION
The conference location is in the heart of Vilnius at:
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REGISTRATION
The registration form on www.norchip.org must be completed and returned to the Conference Secretariat, together with full payment. The registration fee of EUR 480 includes proceedings, banquet dinner, lunches and coffee breaks. Registration deadline is 25 October. Registrations are acknowledged upon reception.