



Program

AMICSA 2018

Analogue and Mixed Signal Integrated Circuits for Space Applications

AMICSA 2018 is sponsored by



Program

Sunday, 17 June 2018

20:00 Welcome Drink

Café Entrepot

Monday, 18 June 2018

09:15 Welcome and Introduction

Steven Redant (Imec)
Boris Glass (ESA)

09:45 **Radiation Effects on analogue and mixed-signal Ics**

Convener: Dr. Sebastian Millner

*Single Event Effects Analysis in ReadOut Integrated Circuits at
Cryogenic Temperatures*

Laurent Artola
(ONERA)

*Static Linearity Test for Radiation Effects Characterization of an 18-
bit SAR Serial IO COTS ADC: Analog Devices AD7982*

Dr. Sonia Vargas-Sierra
(Alter Technology)

Validation of a High Resolution ADC for Space Applications

Kostas MAKRIS
(ISD S.A)

11:00 Coffee break

11:20 **Custom Cell-, Circuit-, and System Design: (1/3)**

Convener: Marc Fossion

*Rad-Hard Telemetry and Telecommand IC suitable for RIU, RTU and
ICU Satellite Subsystems*

Ernesto Pun
(Arquimea)

*Microchip ATMX150RHA European Mixed Technology for Advanced
Designs SAMRH71*

Hans-Ulrich Zurek
(Microchip)

*Status update on GR716 Rad-Hard Microcontroller For Space
Applications*

Fredrik Johansson
(Cobham Gaisler)

12:35 Lunch

Monday, 18 June 2018

14:00 Evaluation and Qualification

Convener: Dieter Herrmann

Re-Thinking Reliability Analysis

Art Schaldenbrand
(Cadence Design
Systems)

*Digital Programmable Controller (DPC): radhard die in low cost
plastic package*

Alain van Esbeen,
Marc Fossion
(Thales Alenia Space
Belgium)

ESCC Single Phase Qualification

Fernando Martinez
(ESA)

*Characterization, Screening and Qualification of the MEDA Wind-
Sensor ASIC*

Servando Espejo
(IMSE-CNM-CSIC /
Universidad de Sevilla)

15:40 Coffee break

16:00 Custom Cell-, Circuit-, and System Design: (2/3)

Convener: Michael Kakoulin

A radhard LVDS chip: transistor level design aspects

Jan Wouters
(IMEC)

*Correlators for Interferometric Radiometry in Remote Sensing
Applications, A Scaling Perspective*

Erik Ryman
(Omnisys Instruments
AB)

Social Program

16:50 Guided Tour

Leuven

19:00 Welcome Reception

Leuven city hall

Tuesday, 19 June 2018

09:15 Keynote Speech

Functional Safety Management in the automotive world and beyond?

Yves Renard
(ON Semiconductor)

10:00 Space Applications: (1/2)

Convener: Jose F. Moreno-Alvarez

SIS20: A CMOS ASIC for Solar Irradiance Sensors in Mars Surface

Prof. Vázquez Diego
(IMSE-CNM-CSIC /
University of Seville)

*Ultimate earth observation using time delay integration line scan
imagers using the CCD-in-CMOS technology*

Piet de Moor
(Imec)

10:50 Coffee break

11:20 Space Applications: (2/2)

Convener: Jörg Ackermann

*Channeltron Detector Readout ASIC in 0.35 μ m HV CMOS for Cold
Solar Wind Analysis*

King Wah Wong
(IRAP CNRS)
Prof. Hélène Tap
(INP-ENSEEIH LAAS)

*A Fault Tolerant PMAD System Using Radiation Hardened Highly
Integrated AFE Integrated Circuits*

Mathieu Sureau
(Microsemi Corp.)

A rad-hard systems-on-chip solution for close-loop motor control

Dr. Ying Cao
(MAGICS Instruments)

12:35 Lunch

14:00 **Poster Session**

David Levacq
(ESA)

Space Applications

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|----|--|--|
| I | <i>Multi-Channel Preamplifier IC for IR-Sensor and FPA Readout</i> | Jörg Ackermann |
| II | <i>A rad-hard signal conditioning ASIC for space grade transducers</i> | Dimitris Mitrovgenis,
Theodoros
Athanasopoulos |

Radiation Testing and Mitigation

- | | | |
|-----|---|-------------------|
| III | <i>The First SEE Tests Campaign in Turkey at the METU Defocusing Beamline Preliminary Setup</i> | Mehmet Serdar |
| IV | <i>Heavy Ion Test Results of Different Analog to Digital Converters</i> | Sergei Iakovlev |
| V | <i>Radiation Tolerant Stochastic Fourier-Transformation Implementation</i> | Kris Niederkleine |

Custom Cell-, Circuit-, and System Design

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| VI | <i>Radiation-Hard X-Band Phase Locked Loop and Transceiver in 0.25 μm SiGe Technology</i> | Dr. Wojciech Debski |
| VII | <i>SEPHY: a 10/100 Ethernet Transceiver for Space Applications</i> | Jesús F. López-Soto |
| VIII | <i>Radiation Hardened Pulse Width Modulator in CMOS-SOI</i> | Dimitrios Baramilis |

14:00 **Industrial Presentations**

Hilde Derdin (Imec)

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|----|-----------------------------|--|
| 1 | Microchip | Erwann Berlivet
Pascale Charpentier |
| 2 | Alter Technology | Dr. Sonia Vargas-Sierra
Xavier Wiedemann |
| 3 | Cobham | Teresa Farris
Christian Sayer |
| 4 | Cobham | Fredrik Johansson
Teo DeLellis |
| 5 | Microsemi | Dorian Johnson
Mathieu Sureau |
| 6 | Micross | Ian Robinson |
| 7 | Arquimea | Ferran Tejada
Daniel Gonzalez |
| 8 | Magics | Jens Verbeeck
Dr. Ying Cao |
| 9 | Teledyne e2v | Dr. Romain Pilard,
Joseph Yeomans, Kurt
Rentel, Nicolas Chantier |
| 10 | Serma/HCM.Systrel | Frédéric Oudart
Maxence Leveque |
| 11 | Thales Alenia Space Belgium | Alain van Esbeen
Marc Fossion |
| 12 | Microtest | Moreno Lupi
Francesco Parenti |
| 13 | Renesas | Oscar Mansilla
Christophe Boucheron |
| 14 | IHP | Judith Kroel
Dr. Jens Schmidt |
| 15 | TRAD | Christian Chatry |
| 16 | Imec | Ozgur Gursoy
Geert Thys |

Tuesday, 19 June 2018

16:00 Custom Cell-, Circuit-, and System Design: (3/3)

Convener: Florence Malou

*Prototype of a multi-mode C-Band capable 12-bit 1.5/3/6 GSps Quad
ADC in flip-chip non-hermetic technology*

Dr. Romain Pilard
(Teledyne e2v)

Atom-Switch FPGA for IoT Sensing System Application

Dr. Toshitsugu Sakamoto
(NEC Corporation)

*Robust CMOS time-based sensor interfaces for space applications
presenter*

Jorge Marin
(KU Leuven)

19:00 Conference Dinner

Faculty Club

Wednesday, 20 June 2018

09:00 Keynote Speech

Perspectives for Disruptive GaN Power Device Technology

Stefaan Decoutere
(IMEC)

09:45 Radiation Hardened Technologies: (1/3)

Convener: Dr. Constantin Papadas

Microchip ATMX150RHA Rad-Hard CMOS 150nm cell based ASIC family Radiation Characterization Test Report Total Dose (TID) and Single Event Effects (SEE)

Eric Leduc
(Microchip)

DARE180U platform improvements in release 5.6

Giancarlo Franciscatto
(Imec)

The Design Against Radiation Effects (DARE) design platform for TSMC 65nm process.

Michael Kakoulin
(Imec)

11:20 Radiation Hardened Technologies: (2/3)

Convener: Franco Bigongiari

Invited Talk:

Overview of ST Space Qualification in 28nm-FDSOI

Dr. Gilles Gasiot
(ST Radiation Team
Crolles)

ATMX150RHA Circuit Design Platform

Erwann Berlivet
(Microchip)

DARE SET Simulation Flow Integrated in Virtuoso ADE L/XL Design Environment

Staf Verhaegen
(Imec)

12:35 Lunch

Wednesday, 20 June 2018

14:00 **Radiation Hardened Technologies: (3/3)**

Convener: Frank Henkel

ESS180RH: An 180nm digital library addressing Single Event Latch-up based on X-FAB XH018

Dimitris Mitrovgenis
Theodoros
Athanassopoulos
(European Sensor
Systems)

Mixed-Signal Test Vehicle in Microchip Atmel ATMX150RHA

Julien Fleury
(Weeroc)

DARE180U New Analog IPs

Laurent Berti
(Imec)

15:15 **Wrap-Up and Finish**

Boris Glass (ESA)
Steven Redant (Imec)

see you at
AMICSA