



## Technical Program

### Jun 7<sup>th</sup>, 2010

08:15-08:30 **Opening Session**

08:30-09:15 **Keynote Talk 1**

*Chair: Bernard Courtois (CMP, France)*

- Integrated Calibration, Validation, and Test -- Rethinking Quality Management Through Reduce, Reuse, and Recycle  
Tim CHENG (University of California - Santa Barbara - USA)

09:15-10:30 **Session 1: Alternate testing for ADC, PLL and RF front-end modules**

*Chair: Michel Renovell (LIRMM, France)*

- Improved Method for SNR Prediction in Machine-Learning-Based Test  
Xiaoqin SHENG (University of Twente - Netherlands), Hans KERKHOFF (University of Twente - Netherlands)
- PLL Lock Time Prediction and Parametric Testing by Lock Waveform Characterization  
Sachin DASNURKAR (Qualcomm - USA), Jacob ABRAHAM (University of Texas - USA)
- Optimized digital compatible pulse sequences for testing of RF front end modules  
Aritra BANERJEE (Georgia Tech - USA), Shyam Kumar DEVARAKOND (Georgia Tech - USA), VISHWANATH NATARAJAN (Georgia Tech - USA), Shreyas SEN (Georgia Tech - USA), Abhijit CHATTERJEE (Georgia Tech - USA)

10:30-11:00 **Break**

11:00-12:15 **Session 2: Defect modeling, fault detection & on-line diagnosis for MEMS devices**

*Chair: Andrew Richardson (University of Lancaster, UK)*

- Modeling the influence of etching defects on the sensitivity of MEMS convective accelerometers  
Ahmed REKIK (LIRMM - France), Florence AZAIS (LIRMM - France), Norbert DUMAS (LIRMM - France), Frédéric MAILLY (LIRMM - France), Pascal NOUET (LIRMM - France)
- Simulation and monitoring of resonant frequency of MEMS for failure detection and prediction  
Szilard JAMBORHAZI (Budapest University of Technology and Economics - Hungary), Marta RENCZ (Technical Univ of Budapest - Hungary)
- Smart Drivers for Online Diagnosis of Electrostatic MEMS Actuators  
Norbert DUMAS (LIRMM - France), Latorre LAURENT (LIRMM - France), Frédéric MAILLY (LIRMM - France), Pascal NOUET (LIRMM - France)

12:15-14:00 **Lunch**

14:00-15:15 **Session 3 : Converter testing**

*Chair: Sebastian Sattler (University of Erlangen, Germany)*

- ADC Testing with Polyharmonics Signals  
Josef VEDRAL (CTU Prague - Czech Republic)
- An adaptive BIST for INL estimation of ADCs without histogram evaluation  
Antonio Jose GINES ARTEAGA (University of Seville - Spain), Eduardo Jose PERALIAS MACIAS (University of Seville - Spain), Adoracion RUEDA (University of Seville - Spain)
- ANC-based method for testing converters with random-phase harmonics  
Vincent KERZERHO (NXP/LIRMM - France), Philippe CAUVET (Ophtimalia - France), Serge BERNARD (LIRMM - France), Florence AZAIS (LIRMM - France), Mariane COMTE (LIRMM - France), Michel RENOVELL (LIRMM - France)

15:15-16:05 **Session 4: Methodologies for virtual testing and mixed-signal test automation**

*Chair: Cecilia Metra (Università di Bologna – Italy)*

- DETECTOR: Design and Test Characterization of Mixed-Signal Power Cores  
Tiago MOITA (INESC-ID - Portugal), MARCELINO BICHO DOS SANTOS (IST/INESC-ID - Portugal), Carlos ALMEIDA (IST-UTL/INESC-ID - Portugal)
- Methodology of Virtual Testing of Trimmable Analog Circuits  
Udo SOBE (ZMD AG - Germany), Enno BÖHME (ZMD AG - Germany), Karl-Heinz ROOCH (Fraunhofer IIS - Germany)

16:05-16:35 **Break**

16:35-18:15 **Panel: The Role of Test in the Evolution and Maturation of Emerging Technologies**

*Moderator: Jacob Abraham, University of Texas, USA*

*Organizer: Bernard Courtois, CMP, France*

*Panelists: Tim Cheng, University of California, Santa Barbara, USA*

*Bozena Kaminska, Simon Fraser University, Canada*

*Pascal Nouet, LIRMM, CNRS/Univ. Montpellier 2, France*

*Salvador MIR, TIMA, Grenoble, France*

*Hans Kerkhoff, MESA+, Univ. Twente, The Netherlands*

19:00-20:00 **Welcome Reception**

## Jun 8<sup>th</sup>, 2010

08:30-09:15 **Keynote Talk 2**

*Chair: Bozena Kaminska (Simon Fraser University, Canada)*

- Low-power implantable devices for onset seizures detection and subsequent treatment  
Mohamad SAWAN (Polytechnique Montreal- Canada)

09:15-10:30 **Session 5 : MEMS design and fabrication & PV cell testing**

*Chair: Serge Bernard (LIRMM, France)*

- MEMS for Sensing High Current Overload  
Bruce KIM (The University of Alabama - USA), Rahim KASIM (Intel - USA)
- DESIGN AND FABRICATION OF 3D PRESSURE SENSORS ON FLEXIBLE SUBSTRATE  
Sebastien NAZEER (Unive Paris SUD - France), Emile MARTINCIC (Unive Paris SUD - France), Jean-Pierre NIKOLOVSKI (CEA Fontenay aux Roses - France), Jean-Paul GILLES (Universite Paris SUD - France), Elisabeth DUFOUR GERGAM (Universite Paris SUD - France), Moustapha HAFEZ (CEA Fontenay aux Roses - France)
- METHOD OF FABRICATING A CONVENIENT LIGHT SOURCE AND ITS EVALUATION IN PV CELL LABORATORY TESTING  
Jeydmer ARISTIZABAL (Simon Fraser University - Canada), Clint LANDROCK (Simon Fraser University - Canada), Bozena KAMINSKA (Simon Fraser University - Canada), Carlo MENON (Simon Fraser University - Canada)

10:30-11:00 **Break**

11:00-12:15 **Session 6: RF and RFID testing**

*Chair: Mariane Comte (LIRMM, University of Montpellier, France)*

- Evaluation of Built-In Sensors for RF LNA response measurement  
J TONGBONG (TIMA - France), L ABDALLAH (TIMA - France), Salvador MIR (TIMA - France), Haralampos STRATIGOPOULOS (TIMA - France)
- A COMPARISON BETWEEN VOLTAGE AND TRUE POWER BASED EMBEDDED MEASUREMENTS FOR RF TESTING  
Jose MACHADO DA SILVA (INESC Porto - Portugal), Pedro MOTA (INESC Porto - Portugal)
- Read-error-rate evaluation for RFID system on-line testing  
Gilles FRITZ (Grenoble INP - France), Vincent BEROLLE (INPG/ESISAR - France), Minh Duc NGUYEN (Grenoble INP - France), Oum-EI-Kheir AKTOUF (Grenoble INP - France), Ioannis PARISSIS (Grenoble INP - France)

12:15-14:00 **Lunch**

14:00-16:00 **Special Session: Testing Challenges – System Software & Hardware Perspectives**

*Chair: I. McWalter (CMC Microsystems, Canada)*

- Design Verification, Test and Application of Sensium: An Ultra low Power Sensor Network Platform  
Nikolaos Kasparidis, Toumaz Technologies, UK
- 3D IC System-In-Package (SiP) Test Challenges - Opportunities – Solutions  
Michael O'Sullivan, Cadence Design Systems, UK

- Testing and Verification of MEMS Based Systems - A Software Perspective  
Sebastien Cases; SoftMEMS EURL, France
- Challenges and New Strategies for Inertial MEMS Testing  
Maurus Tschirky, Acutronic, Switzerland
- MEMUNITY Expertise -- Exemplification by Means of Parameter Identification of Membranes  
Steffen Michael; IMMS, Germany

16:00-16:30 **Break**

16:30-17:20 **Session 7 : Microfluidic and medical applications**

*Chair: Hans Kerkhoff (University of Twente, The Netherlands)*

- Test Metric Assessment of Microfluidic Systems through Heterogeneous Fault Simulation  
Thomas MYERS (University of Hull - United Kingdom), Ian BELL (University of Hull - United Kingdom)
- Novel Feature Assisting in the Prediction of sEMG Muscle Fatigue Towards Wearable Autonomous System  
Mohammed AL-MULLA (Essex University - United Kingdom)

18:45-23:00 **Social Event**

**Jun 9<sup>th</sup>, 2010**

08:45-09:35 **Session 8 : Dependability and reliability**

*Chair: Bruce Kim (University of Alabama, USA)*

- Dependable Digitally-Assisted Mixed-Signal IPs Based on Integrated Self-Test & Self-Calibration  
Hans KERKHOFF (University of Twente - Netherlands), Jinbo WAN (University of Twente - the Netherlands)
- Self-Checking Monitor for NBTI Due Degradation  
Cecilia METRA (Università di Bologna - Italy), Martin Eugenio OMANA (University of Bologna - Italy), Daniele ROSSI (University of Bologna - Italy), Nicolo BOSIO (University of Bologna - Italy)

09:40-10:30 **Session 9: Converter auto-correction and self-trimming**

*Chair: Haralampos Stratigopoulos (TIMA, France)*

- Adaptive LUT-based System for In Situ ADC Auto-correction  
Serge BERNARD (LIRMM - France), Florence AZAIS (LIRMM - France), Mariane COMTE (LIRMM - France), Olivier POTIN (LIRMM - France), Vincent KERZERHO (NXP/LIRMM, France), Michel RENOVELL (LIRMM - France)
- Comparator based self-trim and self-test scheme  
HANS MARTIN VON STAUDT (Dialog Semiconductor - United Kingdom)

10:30-11:00 **Break**

11:00-12:15 **Session 10: Testing high-speed signals**

*Chair: Salvador Mir (TIMA, France)*

- AM demodulation of analog/RF signals using digital tester channels  
Florence AZAIS (LIRMM - France), Nicolas POUS (LIRMM - France), Laurent LATORRE (LIRMM - France), Jochen RIVOIR (Verigy Germany GmbH - Germany)
- Jitter Characterization of Incoherently Sub-Sampled High-Speed Digital Signals  
Hyun CHOI (Georgia Tech - USA), Abhijit CHATTERJEE (Georgia Tech - USA)
- Extending a DWDM Optical Network Test System to 10 Gbps x4  
DAVID C KEEZER (Georgia Tech - USA), Carl GRAY (Georgia Tech - USA)

12:15-14:00 **Lunch**

14:00-14:50 **Session 11: Analog test signal generation and charge-to-digital conversion**

*Chair: David Keezer (Georgia Tech, USA)*

- Guidelines for the efficient design of sinewave generators for analog/mixed-signal BIST  
Manuel BARRAGAN (IMSE-CNM - Spain), Diego VAZQUEZ (IMSE-CNM-CSIC - Spain), Adoracion RUEDA (IMSE-CNM - Spain), JOSE L HUERTAS (Universidad De Sevilla - Spain)
- A New Method of Charge-to-Digital Conversion  
MAREK MISKOWICZ (AGH University of Science and Technology - Poland), DARIUSZ KOSCIELNIK (AGH University of Science and Technology - Poland)

14:50-15:00 **Closing Remarks**