14th IEEE Latin-American Test Workshop
TECHNICAL PROGRAM

Wednesday, April 3rd 2013

08:00 – 08:30  Registration

08:30 – 09:00  Opening Session

09:00 – 09:40  KEYNOTE ADDRESS
Title: Diagnostic Modeling of Digital Systems with Low- and High-Level Decision Diagrams
Presenter: Raimund UBAR (Tallinn Technical University, Estonia)

09:40 – 10:10  COFFEE BREAK

10:10 – 11:10  SESSION 1: Simulation, Diagnosis and Variability
Session Chair: Victor CHAMPAC (INAOE, Mexico)

Adaptive Test and Diagnosis of Intermittent Faults
Alejandro COOK (University of Stuttgart, Germany), Laura RODRIGUEZ (University of Stuttgart, Germany), Sybille HELLEBRAND (University of Paderborn, Germany), Thomas INDLEKOFER (University of Paderborn, Germany), Hans-Joachim WUNDERLICH (University of Stuttgart, Germany)

Pre-Characterization Procedure for a Mixed Mode Simulation of IR-Drop Induced Delays
Mariane COMTE (LIRMM – University of Montpellier, France), Marina APARICIO (LIRMM – University of Montpellier, France), Florence AZAIS (LIRMM/CNRS – University of Montpellier, France), Michel RENOVELL (LIRMM – University of Montpellier, France), Jie JIANG (University of Passau, Germany), Ilia POLIAN (University of Passau, Germany), Bernd BECKER (University of Freiburg, Germany)

Predicting Die-to-Die Process Variations from Wafer Test Data: A Feasibility Study
Shyam Kumar DEVARAKOND (Georgia Institute of Technology, United States of America), McCoy JENNIFER (Texas Instruments, United States of America), Nahar AMIT (Texas Instruments, United States of America), John CARULLI (Texas Instruments, United States of America), Bhattacharya SOUMENDU (Texas Instruments, United States of America), Abhijit CHATTERJEE (Georgia Institute of Technology, United States of America)
SESSION 2: Software, Hardware and Architecture Fault-Tolerance
Session Chair: Carlos SILVA CARDENAS (Catholic University of Peru, Peru)

Using Selective Redundancy for Registers in Error Detection Software-Based Techniques
Eduardo CHIELLE (Federal University of Rio Grande do Sul, Brazil), José AZAMBUJA (Federal University of Rio Grande do Sul, Brazil), Raul BARTH (Federal University of Rio Grande do Sul, Brazil), Fernanda KASTENSMIDT (Federal University of Rio Grande do Sul, Brazil)

Hierarchical Dependability Models Based on Markov Chains
Martin KOHLIK (CTU in Prague, Czech Republic), Hana KUBATOVA (CTU in Prague, Czech Republic)

Comparison of Fault-Tolerant Fabless CLBS in SRAM-Based FPGAs
Arwa BEN DHIA (Telecom ParisTech, France), Lirida NAVINER (Institut Telecom, Telecom ParisTech CNRS LTCI, France), Philippe MATHERAT (Institut Telecom, Telecom ParisTech CNRS LTCI, France)

SESSION 3: Design Verification and Validation (Part I)
Session Chair: Luis ENTRENA (Universidad Carlos III de Madrid, Spain)

Automatic Property Generation for Formal Verification Applied to HDL-Based Design of an On-Board Computer Space Application
Wesley SILVA (Federal University of Santa Catarina, Brazil), Eduardo BEZERRA (Federal University of Santa Catarina, Brazil), Markus WINTERHOLER (Cadence Design Systems, Germany), Djones LETTNIN (Federal University of Santa Catarina, Brazil)

PROCOV: Probabilistic Output Coverage Model
Joel MUNOZ QUISPE (University of São Paulo, Brazil), Jiang Chau WANG (University of São Paulo, Brazil), Marius STRUM (University of São Paulo, Brazil)

Assessment of Diagnostic Test for Automated Bug Localization
Valentin TIHHOMIROV (Tallinn Technical University, Estonia), Anton TŠEPUROV (Tallinn Technical University, Estonia), Maksim JENIHHIN (Tallinn Technical University, Estonia), Jaan RAIK (Tallinn Technical University, Estonia), Raimund UBAR (Tallinn Technical University, Estonia)
Wednesday, April 3rd 2013

15:40 – 16:10  COFFEE BREAK

16:10 – 16:50  SESSION 4: Design Verification and Validation (Part II)
Session Chair: Gustavo JUAREZ (University Tucuman, Argentina)

**Formal Equivalence Checking Between High-Level and RTL Hardware Designs**
Carlos CASTRO MARQUEZ (University of São Paulo, Brazil), Jiang Chau WANG (University of São Paulo, Brazil), Marius STRUM (University of São Paulo, Brazil)

**Local Data Fusion Algorithm for Fire Detection Through Mobile Robot**
Alex PINTO (State University of São Paulo, Brazil), Kalinka BRANCO (State University of São Paulo, Brazil), Jos MACHADO (State University of São Paulo, Brazil), Guilherme ROBERTO (State University of São Paulo, Brazil)

16:50 – 17:30  EMBEDDED TUTORIAL 1
**Title: Regaining Hardware Trust By Leveraging Test Techniques and Tools**
Presenter: Ozgur SINANOGLU (New York University in Abu Dhabi, United Arab Emirates)

WELCOME COCKTAIL
Thursday, April 4th 2013

09:00 – 09:40 INVITED TALK
Title: Challenges in the Design and Test of High-Performance New Devices
Presenter: Costas ARGYRIDES (Intel, Spain)

09:40 – 11:00 SESSION 5: Analog Mixed Signal Test
Session Chair: Fabian VARGAS (Catholic University of Rio Grande do Sul, Brazil)

Low-Cost DC BIST for Analog Circuits: A Case Study
Pablo PETRASHIN (Catholic University of Cordoba, Argentina), Carlos DUALIBE (University of Mons, Argentina), Luis TOLEDO (Catholic University of Cordoba, Argentina), Walter LANCIONI (Catholic University of Cordoba, Argentina)

Parametric Model Calibration and Measurement Extraction for LFN Using Virtual Instrumentation
Luis FRANCISCO (Catholic University Madre y Maestra, Dominican Republic), Manuel JIMENEZ-CEDEÑO (University of Puerto Rico at Mayagüez, Puerto Rico)

Time Domain Reconstruction of Signal Envelope for High Speed RF Test Setup Using Incoherent Undersampling
Debesh BHATTA (Georgia Institute of Technology, United States of America), Aritra BANERJEE (Georgia Institute of Technology, United States of America), Sabyasachi DEYATI (Georgia Institute of Technology, United States of America), Nicholas TZOU (Georgia Institute of Technology, United States of America), Abhijit CHATTERJEE (Georgia Institute of Technology, United States of America)

Bridge Defect Detection in Nanometer CMOS Circuits using Low VDD and Body Bias
Hector VILLACORTA (Catholic University of Peru, Peru), José L. GARCÍA-GERVÁCIO (University Veracruzana, Mexico), Victor CHAMPAC (INAOE, Mexico), Jaume SEGURA (University of the Balearic Islands, Spain)

11:00 – 11:30 COFFEE BREAK
Thursday, April 4th 2013

11:30 – 12:30 SPECIAL SESSION
Title: Emerging Technologies and Beyond CMOS Computing Architectures
Organizer: Enrico MACII and Andrea CALIMERA (Politecnico di Torino, Italy)
Session Chair: Matteo SONZA REORDA (Politecnico di Torino, Italy)

MEMRISTOR-based Filtering Applications
Fernando CORINTO (Politecnico di Torino, Italy), Miroslav MIRCHEV (Politecnico di Torino, Italy), Marco GILLI (Politecnico di Torino, Italy), Alon ASCOLI (Technical University Dresden, Germany), Tetzlaff RONALD (Technical University Dresden, Germany)

Vertically-stacked Silicon Nanowire Transistors with Controllable Polarity: A Robustness Study
Pierre-Emanuel GAILLARDON (EPFL, Switzerland), Hassan GHASEMZADEH (EPFL, Switzerland), Giovanni DE MICHELI (EPFL, Switzerland)

Investigating the Behaviour of Physical Defects in PN-Junction based Reconfigurable Graphene Devices
Sandeep MIRYALA (Politecnico di Torino, Italy), Andrea CALIMERA (Politecnico di Torino, Italy), Enrico MACII (Politecnico di Torino, Italy), Massimo PONCINO (Politecnico di Torino, Italy), Letícia Maria BOLZANI POEHLS (Catholic University of Rio Grande do Sul, Brazil)

12:30 – 14:00 LUNCH

14:00 – 14:40 INVITED TALK
Title: PASSAT 2.0: A Multi-Functional STA-Based Testing Framework
Presenter: Rolf DRECHSLER
Coauthors: Melanie DIEPENBECK, Stephan EGGERSGLUESS, Robert WILLE (University of Bremen, Germany)
Thursday, April 4th 2013

14:40 – 15:40 SESSION 6: Software and Hardware Testing
Session Chair: Jacob ABRAHAM (University of Texas, United States of America)

Towards an Automatic Generation of Diagnostic In-Field SBST For Multiplexer-Based Processor Components
Mario SCHOELZEL (Technical University of Cottbus, Germany), Tobias KOAL (Technical University of Cottbus, Germany), Stephanie RÖDER (Technical University of Cottbus, Germany), Heinrich Theodor VIERHAUS (Technical University of Cottbus, Germany)

On the Functional Test of the BTB Logic in Pipelined and Superscalar Processors
Matteo SONZA REORDA (Politecnico di Torino, Italy), Du CHANGDAO (Politecnico di Torino, Italy), Mariagrazia GRAZIANO (Politecnico di Torino, Italy), Edgar Ernesto SANCHEZ SANCHEZ (Politecnico di Torino, Italy), Maurizio ZAMBONI (Politecnico di Torino, Italy), Nie ZHIFAN (Politecnico di Torino, Italy)

ISA Configurability of a Test-Processor Used for a Board-Level Interconnection Testing
Jorge MEZA ESCOBAR (Technical University Ilmenau, Germany), Joerg SACHSSE (Technical University Ilmenau, Germany), Steffen OSTENDORFF (Technical University Ilmenau, Germany), Dieter WUTTKE (Technical University Ilmenau, Germany)

15:40 – 16:10 COFFEE BREAK

16:10 – 17:40 TTEP
Title: Advanced Testing for Today’s SOC
Presenter: Yervant ZORIAN (Synopsys, United States of America)

SOCIAL EVENT
Presentation: “Jesuit Cultural Heritage in Córdoba. The Jesuit Block And The Estancias”
Presenter: Padre Guillermo BLASÓN

afterwards: guided tour through the historical city centre of Cordoba
Friday, April 5th 2013

09:00 – 9:40 INVITED TALK
Title: Fast Fault Injection Techniques using FPGAs
Presenter: Luis ENTRENA (University Carlos III de Madrid, Spain)

09:40 – 11:00 SESSION 7: Radiation and Electromagnetic Interference
Session Chair: José LIPOVETZKY (Universidad Buenos Aires, Argentina)

Effect of Aging on Power Integrity of Digital Integrated Circuits
Alexandre BOYER (LAAS/CNRS, France), Sonia BEN DHIA (LAAS/CNRS, France)

Diagnose of Radiation Induced Single Event Effects in a PLL Using a Heavy Ion Microbeam
Santiago SONDON (National Southern University Argentina, Argentina)

Neutron Sensitivity of Integer and Floating Point Operations Executed in GPUs
Paolo RECH (Federal University of Rio Grande do Sul, Brazil), Caroline AGUIAR (Federal University of Rio Grande do Sul, Brazil), Christopher FROST (STFC, Brazil), Luigi CARRO (Federal University of Rio Grande do Sul, Brazil)

Spice Level Analysis of Single Event Effects in an OXRRAM Cell
Karine CASTELLANI-COULIE (Aix-Marseille University, France), Marc BOCQUET (Aix-Marseille University, France), Hassen AZIZA (Aix-Marseille University, France), Jean Michel PORTAL (Aix-Marseille University, France), Wenceslas RAHAJANDRAIBE (Aix-Marseille University, France), Christophe MULLER (Aix-Marseille University, France)

11:00 – 11:30 COFFEE BREAK

11:30 – 12:10 EMBEDDED TUTORIAL 2
Title: Guidelines for the Radiation Test of Electronic Devices and Systems
Presenter: Paolo RECH (Federal University of Rio Grande do Sul, Brazil)

12:10 – 14:00 LUNCH
Friday, April 5th 2013

14:00 – 14:40 SESSION 8: Design for Testability
Session Chair: Hans-Joachim WUNDERLICH (University of Stuttgart, Germany)

A Test Time Theorem and Its Applications
Praveen VENKATARAMANI (Auburn University, United States of America), Suraj SINDIA (Auburn University, United States of America), Vishwani AGRAWAL (Auburn University, United States of America)

Built-In Tuning of the Local Oscillator for Open Loop Modulation of Low Cost, Low Power RF Transceiver
Wenceslas RAHAJANDRAIBE (Aix-Marseille University, France), Fayrouz HADDAD (Aix-Marseille University, France), Hassen AZIZA (Aix-Marseille University, France), Karine CASTELLANI-COULIE (Aix-Marseille University, France), Jean Michel PORTAL (Aix-Marseille University, France)

14:40 – 15:20 SESSION 9: Memory Testing and Repair
Session Chair: Francisco RUSSI (Synopsys, United States of America)

An RTN Variation Tolerant Guard Band Design for a Deeper Nanometer Scaled SRAM Screening Test: Based on EM Gaussians Mixtures Approximations Model of Long-Tail Distributions
Worawit SOMHA (Fukuoka Institute of Technology, Japan), Hiroyuki YAMAUCHI (Fukuoka Institute of Technology, Japan)

Technique Based on On-Chip Current Sensors and Neighborhood Comparison Logic to Detect Resistive-Open Defects in SRAMs
Felipe LAVRATTI (Catholic University of Rio Grande do Sul, Brazil), Leticia Maria BOLZANI POEHLIS (Catholic University of Rio Grande do Sul, Brazil), Andrea CALIMERA (Politecnico di Torino, Italy), Fabian VARGAS (Catholic University of Rio Grande do Sul, Brazil), Enrico MACII (Politecnico di Torino, Italy)

15:20 – 15:50 COFFEE BREAK
Friday, April 5th 2013

15:50 – 16:50  SESSION 10: Latest News - Invited Presentations
Session Chair: Letícia Maria Bolzani POEHLS (Catholic University of Rio Grande do Sul, Brazil)

Evidences of the Sensitivity of Two SRAM Generations to Neutrons Present in the Earth’s Atmosphere: Results of teh HARMLESS STIC-AMSUD Project
Raoul VELAZCO (TIMA, France), Fabrice PANCHER (TIMA, France), Carlos SILVA CARDENAS (Catholic University of Peru, Peru), Claudio FEDERICO (IEAv/CTA, Brazil), Guillaume HUBERT (ONERA, France), José RUZZANTE (National Technical University Argentina, Argentina)

An Update on P 11491.1 - 2013
Francisco RUSSI (Synopsys, United States of America)

Increasing Reliability by using Transistor Networks
Ricardo REIS (Federal University of Rio Grande do Sul, Brazil)

16:50 – 17:30  CLOSING REMARKS
14th IEEE Latin-American Test Workshop - Cordoba, Argentina, April 3rd - 5th, 2013