

# **7th International Conference on Design & Technology of Integrated Systems in Nanoscale Era**

**(DTIS 2012)**

**Tunis, Tunisia  
16 – 18 May 2012**



**IEEE Catalog Number: CFP1293A-PRT  
ISBN: 978-1-4673-1926-3**

## Technical Program Contents

### Keynote 1 Session

Towards Green Circuits and Systems °

*Pr. Magdi Bayoumi*

---

### Invited Talk

EMC in Integrated Circuits °

*Pr. Mohamed Ramdani*

---

### Embedded Tutorial- Part 1

Practices in Analog, Mixed Signal and High Speed I/O Testing °

*Dr. Salem Abdennadher*

---

### Normal Session A-1

Network on Chip, Embedded systems, 3D-test

On Optimizing Test Cost for Wafer-to-Wafer 3D-Stacked Ics °

*Mottaqiallah Taouil , Said Hamdioui*

---

A Novel Architecture to Reduce Test Time in March-based SRAM Tests °

*I. Voyiatzis, C. Efstathiou, Y. Tsiatouhas, H. Antonopoulou, C. Sgouropoulou*

---

A Mesochronous Outfit for Network-on-Chip's Interconnects Retiming °

*Mounir Zid, Rached Tourki, Alberto Scandurra, Carlo Pistrutto*

---

Investigating The Use of The AFDX Protocol As a Network-On-Chip °

*Ahmed Ben Achballah, Slim Ben Saoud*

---

### Normal Session B-1

Analog, Mixed Signal and RF systems, testing

Improving IO Test and System Evaluation via Data Sharing °

*Salem Abdennadher, Anne Meixner*

---

A 250  $\mu$ W 0.194 nV/rtHz Chopper-Stabilized Instrumentation Amplifier for MEMS Gas °  
Sensor

*Jamel Nebhen, Stéphane Meillère, Mohamed Masmoudi , Jean-Luc Seguin, Hervé*

*Barthelemy, Khalifa Aguir*

---

A CMOS 0.35- $\mu$ m, 3.3-V PLL Synthesizer for Bluetooth Transmitter °

*Sehmi Saâd, Mongia Mhiri, Kamel Besbes*

---

A Novel Design of Two-stage CMOS Amplifier Used For  $\Sigma\Delta$  Analog to Digital Converter °

*Radwene Laajimi, Naoufel Gueddah, Mohamed Masmoudi*

---

Ultra Low Power LNA Design for 2.4 GHz WSNs Applications °

*Amina Msolli, Mohsen Nasri, Abdelhamid Helali & Hassen Maaref*

## Poster Session 1

---

The Realization of a Neural Network Controller for Vehicle-Type Mobile Robot

Navigation

*Hanene Rouabah, Chokri Abdelmoula, Mohamed Masmoudi*

---

A Compact 32-Bit AES Design for Embedded System

*Benhadjoussef Noura, Elhadjoussef wajah, Machhout Mohsen, Tourki Rached*

---

Mobile Radio Communications into the Aquatic Environment

*Mouna Aoun, Mohamed Amine Ben Farah, Abdennaceur Kachouri, Mounir Samet*

---

A CMOS 2.4 GHz Tunable RF Bandpass Filter in 0.35um Technology

*Aymen Ben Hammadi, Mongia Mhiri, Kamel Besbes*

---

Test Set Embedding into Low-power Sequences Based on a Traveling Salesman Problem Formulation

*I.Voyiatzis, D. Magos, C. Efstathiou, H. Antonopoulou, C. Sgouropoulou*

---

Test Vector Embedding in Accumulators with Stored Carry in O(1) time

*I.Voyiatzis, C. Efstathiou, H. Antonopoulou, C. Sgouropoulou*

---

Performance Analysis of ZF and MMSE Equalizers for MIMO Systems

*Abdessalem Trimeche, Nesrine Boukid, Anis Sakly, Abdellatif Mtibaa*

---

Failure Analysis of Hot-Electron Effect on power RF N-LDMOS Transistors

*M.A Belaïd, M. Garesb, K. Daoudc, Ph. Eudelined*

---

## Embedded Tutorial- Part 2

Practices in Analog, Mixed Signal and High Speed I/O Testing

*Dr. Salem Abdennadher*

---

## Keynote 2 Session

Nanoelectronics: From Silicon to Carbon

*Pr. Udo Schwalke*

---

## Special Session

Nanoelectronics

---

On/Off-Current Ratios of Transfer-Free Bilayer Graphene FETs as a Function of Temperature

*P. J. Wessely, F. Wessely, E. Birinci, B. Riedinger, U. Schwalke*

---

Nanoelectronics: From Silicon to Graphene

*Udo Schwalke, Juliane Wessely, Frank Wessely, Martin Keyn, Lorraine Rispal*

---

Dopant-free CMOS: A new device concept

*Frank Wessely, Tillmann Krauss, Udo Schwalke*

---

## IEEE Session

3<sup>rd</sup> edition IEEE TN CEDA's ENG-OPTIM' Contest

“Engineering Applications of Optimization Techniques”

---

Parameters Estimation of sigma Delta Modulators Models Using a Combined .....

Optimization Algorithm in MATLAB Environment

*Raja Maghrebi, Mohamed Masmoudi*

---

Simulation-Based Multi-Objective Optimization of Current Conveyors: Performance .....

Evaluations

A. Sallem, B. Benhala, M. Kotti, M. Fakhfakh, A. Ahaitouf, M. Loulou

---

On the Optimal Design of CC-Based Active Filters .....

A. Sallem, M. Fakhfakh, E. Tlelo-Cuautle, M. Loulou

---

## Poster Session 2

---

Feasibility Study On In Situ CCVD Grown CNTs for Field-Effect Power Device Applications .....

*Martin Keyn, Pia Juliane Wessely, Frank Wessely, Lorraine Rispal, Johannes Palm, Udo Schwalke*

---

Design of a Zero Crossing BFSK Demodulator for a Wireless Sensor .....

*Amel Neifar, Hatem Trabelsi, Ghazi Bouzid, Mohamed Masmoudi*

---

ALU Based Address Generation for RAMs .....

*I. Voyiatzis, C. Efsthathiou, H. Antonopoulou, S. Hamdioui, C. Sgouropoulou*

---

Architecture and HW/SW Validation of Nonlinear Border-Preserving Interpolator .....

*Anis Boudabous, Ahmed Ben Atitallah, Lazhar Khriji, Nouri Masmoudi*

---

Modeling and Design of a Folded Cascode Bulk Driven OTA .....

*Toihria Intissar, Tixier Tierry*

---

Petri Nets Framework for Analysing the Communication Behavior of TLM Modules .....

*Imed Bennour*

---

## Panel Session

Will R&D in North Africa and Middle East also have a Revolution? ....V °

*Dr. Said Hamdioui*

---

## Keynote 3 Session

Opportunities and Challenges for Through-Silicon-Vias 3D Stacked Ics ....V °

*Dr. Said Hamdioui*

## Normal Session A-2

Embedded systems

---

Virtual Reality Adaptative System on Embedded Platforms \*\*\*\*\*

*Tarek Frikha, Nader Ben Amor, Kais Loukil, Mohamed Abid*

---

Impact of Operating Point Effects on DVFS Power Management \*\*\*\*

*Jabran Khan, Sébastien Bilavarn, Cécile Belleudy*

---

Performances of the AES Design in 0.18 $\mu$ m CMOS Technology \*\*\*\*\*

*Hassen Mestiri, Mohsen Machhout, Rached Tourki*

---

Realistic energy modeling of scheduling, interprocess-communication and context switch routines

*Bassem Ouni, Cecile Belleudy, Eric Senn*

## Normal Session B-2

Device modeling, Simulation, Validation and Verification

---

New Digital Pulse-Mode Neural Network based Image Denoising \*\*\*\*\*

*Amir Gargouri, Mohamed Krid, Dorra Sellami Masmoudi*

---

Combiners Based on CMOS Inverters and Application in RF Transmitter for Wireless Sensors \*\*\*\*\*

*Hanan Thabet, Stéphane Meillère, Mohamed Masmoudi, Jean-Luc Seguin, Hervé Barthelemy, Khalifa Aguir*

---

Analytical Dynamic Power Model for LUT based Components \*\*\*\*\*

*Chalbi Najoua, Boubaker Mohamed, Bedoui Mohamed Hedi*

---

Design of Pass Band Filter in Hybrid Architecture Planar/Nrd Waveguide Integration Technology \*\*\*\*

*Harizi Hanen, Gharsallah Ali*

## Normal Session A-3

Wireless systems, SOC, SIP design

---

Exploring SoPC Technology and RTOS Issues for Industrial Motor Control \*\*\*\*\*

*Ahmed Karim Ben Salem, Slim Ben Othman, Moktar Bouain, Slim Ben Saoud*

---

ADS Implementation of a New Memristor Based UWB Chaotic Generator \*\*\*\*\*

*Nada Rebhi, Abdennaceur Kachouri, Mounir Samet*

---

New Concentric Circular Design of ESPAR Antenna for DoAs Estimation of Highly Correlated Signals \*\*\*\*\*

*Salem Akkar, Ferid Harabi, Ali Gharsallah*

---

Towards Non-Uniformly Controlled Charge Domain Sample and Hold for SDR Receiver Baseband Stage \*\*\*\*\*

*Manel Ben-Romdhane, Oussama Rebai, Mohamed Masmoudi, Chiheb Rebai*

## Normal Session B-3

Multiprocessor systems, Memory testing, MEMS, Material characterization

---

A Logic Sharing Synthesis Tool for Mutually Exclusive Applications \*\*\*\*

*Alp Kilic, Zied Marrakchi, Matthieu Tuna, Habib Mehrez*

---

Behavior Control of a Mobile Robot Based on Fuzzy Logic and Neuro Fuzzy Approaches \*\*\*\*\* for Monitoring Wall

*Hanene Rouabah, Chokri Abdelmoula, Mohamed Masmoudi*

---

Efficiency Modeling of a CMOS Mems Convective Accelerometer \*\*\*\*\*

*B. Mezghani, A.A.Rekik, F. Tounsi, F. Mailly, M. Masmoudi, P. Nouet*