



## Gruppo Elettronica 2014

Riunione Annuale del Gruppo Elettronica, Cagliari 16-20 Giugno

### GE2014 – Final Program

**Wednesday 18 June, Aula Magna Architettura, via Santa Croce 59**

**15:00 *Invited talk:*** "Smart sensors on foil: a new challenge for organic TFT circuits", **Eugenio Cantatore**, Technische Universiteit Eindhoven

**15:30** "Experimental and physics-based modeling of transport in thin body, strained Silicon-On-Insulator transistors for ultra-low power CMOS technologies", **Olivier Nier**, Università di Udine

**15:45** "Numerical Simulation of ISFET Structures for BioSensing Devices with TCAD Tools", **Arianna Morozzi**, Università di Perugia

**16:00** "Signal to noise ratio measurements of silicon photomultipliers in the continuous wave regime", **Gabriele Adamo**, Università di Palermo

**16:15** "Multi-channel neural stimulator based on a boosted voltage supply", **Caterina Carboni**, Università di Cagliari

#### **16:30 Coffee Break**

**17:00 *Invited talk:*** "Excellent science (ERC, MSCA, FET)", **Daniela Corda**, MIUR delegate for Excellence in Science Pillar

**17:30** "Statistical Characterization and Modeling of RTN in HfO<sub>2</sub>-Based RRAM", **Francesco Maria Puglisi**, Università di Modena e Reggio Emilia

**17:45** "High Power Solid-State Transmitters for European Spaceborne Systems", **Elisa Cipriani**, Università di Roma Tor Vergata

**18:00** "Low-Noise Impedance Tracking for Contactless Light Monitoring: Closing the Loop in Silicon Photonics", **Marco Carminati**, Politecnico di Milano

**18:15** "Defect generation in proton-irradiated blue InGaN-based LEDs", **Carlo De Santi**, Università di Padova

**18:30** "Coarse-Grained Reconfiguration: high-level dataflow-based power management strategies", **Francesca Palumbo**, Università di Sassari

**19:30 Welcome cocktail, Teatro Mobile, Bastione di Saint Remy**

## Thursday 19 June, Cittadella dei Musei, piazza Arsenale

**09:00 *Invited talk:*** "Cyber-physical systems: opportunities, problems and (some) solutions", **Peter Marwedel**, Technische Universität Dortmund

### Track 1a – Leadership in Enabling and Industrial Technologies

**09:30** "Power up Response of Chopped Op Amp with Active Ripple Reduction", **Andrea Lavarda**, Politecnico di Torino

**09:45** "A parallel VLSI architecture for fast image thinning", **Berardino Carnevale**, Università di Pisa

**10:00** "Impact of proton radiation on InAlN/GaN HEMTs", **Isabella Rossetto**, Università di Padova

**10:15** "Optimum Design and Modeling of Envelope Tracking Power Amplifiers for Microwave Broadband Transceivers", **Alessandro Cidronali**, Università di Firenze

**10:30** "A Novel Low Energy X-ray Fluorescence (LEXRF) Measurement Setup Based on a Multi-cell Silicon Drift Detector", **Jernej Bufon**, Università di Trieste

**10:45** "Triaxial Piezoelectric Converter from Broadband Low-Frequency Vibrations for Energy Harvesting in Autonomous Sensors", **Davide Alghisi**, Università di Brescia

### Track 2a – Excellent Science

**09:30** "Transistors based on graphene-based two-dimensional heterostructures", **Giuseppe Iannaccone**, Università di Pisa

**09:45** "Flexible Non Volatile Memory devices based on organic semiconductors", **Piero Cosseddu**, Techonyou Srl

**10:00** "Distributed strain measurements of a rectangular plate by use of DPP-BOTDA with real-time balanced detection", **Aldo Minardo**, Seconda Università di Napoli

**10:15** "Low voltage, organic DNA hybridization sensors operating at high ionic strength", **Stefano Lai**, Università di Cagliari

**10:30** "Noise spectroscopy: an innovative and non-destructive technique for the characterization of charge carrier mobility and lifetime in organic electronic devices", **Giovanni Landi**, Università di Salerno

**10:45** "Nanopatterned graphene electrodes for organic solar cell", **Giacomo Ulisse**, Università di Roma Tor Vergata

## 11:00 Coffee Break and Poster Session (list of poster presentations at the end of this document)

### Track 1b – Leadership in Enabling and Industrial Technologies

**12:00** "System test of a new optoelectronic gyro based on an InP ring resonator with a Q-factor of one million", **Francesco Dell'Olio**, Politecnico di Bari

**12:15** "Plastic Optical Fibers for monitoring oil-filled power transformers", **Nunzio Cennamo**, Seconda Università di Napoli

**12:30** "Fiber Bragg Gratings for Deformation Monitoring of Tracking Particle Detector", **Stefania Campopiano**, Università di Napoli "Parthenope"

**12:45** "Fiber Optic Sensors for Railways applications: The TWBCS System", **Andrea Cusano**, Università del Sannio

### Track 2b – Excellent Science

**12:00** "Speculative Parallel-Prefix Adders", **Darjn Esposito**, Università di Napoli Federico II

**12:15** "Use of Active Inductors in the Oscillator Design", **Vincenzo Stornelli**, Università dell'Aquila

**12:30** "Circuit design for multi-functional chips", **Mirko Palomba**, Università di Roma "Tor Vergata"

**12:45** "Physically Unclonable Functions Derived From Cellular Neural Networks", **Tommaso Addabbo**, Università di Siena

**13:00 Lunch, Teatro Mobile, Bastione Saint Remy**

**15:00 *Invited talk:*** "Trends, limitations and potentials of electronic medical devices on the society", **Frank van der Linden**, Philips Healthcare

**Track 3a – Leadership in Enabling and Industrial Technologies**

**15:30** "Responsivity measurements of SiC photodiodes", **Alessandro Tomasino**, Università di Palermo

**15:45** "A new era for photovoltaics: Hybrid organic/inorganic perovskite solar cells and modules", **Aldo Di Carlo**, Università di Roma "Tor Vergata"

**16:00** "Accurate yield prediction for PV plants in the presence of shadows due to fully arbitrary obstacles", **Fabio Di Napoli**, Università di Napoli Federico II

**16:15** "Advanced HTRB Test System and Methodology", **Calogero Pace**, Università della Calabria

**Track 4a – Societal Challenges**

**15:30** "SiPM as novel Optical Biosensor", **Maria Francesca Santangelo**, Università di Palermo

**15:45** "Large area processing and manufacturing of flexible dye solar cell photovoltaic devices", **Thomas Brown**, Università di Roma Tor Vergata

**16:00** "Fiber Optic Nanosensor for Biological Applications", **Antonello Cutolo**, Università del Sannio

**16:15** "Active and passive structural health monitoring system based on arrays of ultrasonic guided waves transducers", **Lorenzo Capineri**, Università di Firenze

**16:30 Coffee Break and Poster Session (continued)**

**Track 3b – Leadership in Enabling and Industrial Technologies**

**17:00** "Development of a Smartphone-based wearable electrocardiograph", **Emiliano Sisinni**, Università di Brescia

**17:15** "Fingerprint extraction by an Automated Ultrasound System", **Antonio Iula**, Università della Basilicata

**17:30** "Fully Integrated Transceiver for High Speed Wireless Short-Range Applications", **Sergio Saponara**, Università di Pisa

**17:45** "A Platform Architecture Emulator for the Evaluation of Embedded Multi-media Flash Cards (eMMC)", **Mauro Olivieri**, Università di Roma la Sapienza

**18:00** "Self-powered temperature sensors embedded in CPU heat-sink", **Luca Rizzon**, Università di Trento

**18:15** "Implementation of a spread-spectrum based smart lighting system on an embedded platform", **Massimo Ruo Roch**, Politecnico di Torino

**Track 4b – Societal Challenges**

**17:00** "Experimental Evaluation of Energy-Harvesting Solutions with Portable Energy-Logger Circuit for Wearable Electronics and Sensors in Healthcare", **Gabriele Pellegrinelli**, Università di Brescia

**17:15** "GPU accelerated computer aided detection systems for ultrasound imaging", **Francesca Galluzzo**, Università di Bologna

**17:30** "Pathological Voice Parameters extraction using Digital Signal Processing", **Francesco Lo Bue**, Università di Palermo

**17:45** "A Low-Power MPSoC Architecture for Real-Time Neural Signal Decoding", **Nicola Carta**, Università di Cagliari

**18:00** "POVOMON: an Ad-hoc Wireless Sensor Network for Indoor Environmental Monitoring", **Maurizio Rossi**, Università di Trento

**18:15** "Development of a CW-fNIRS System for brain monitoring", **Diego Agrò**, Università di Palermo

**19:30 Gala Dinner, Le terrazze di Calamosca, Calamosca**

**Friday 20 June, Aula Magna Architettura, via Santa Croce 59**

**09:00** Panel discussion: *“Perspectives of Electronics Industry in Italy”*

**Alessandro Cremonesi**, ST Microelectronics

**Mauro Varasi**, Finmeccanica

**Massimo Comparini**, Telespazio

**Gianpiero Pilu**, Telit

**10:45** Proclamation of winners of prizes *“GE Best Ph.D. Thesis”* and *“Mario Sannino best paper in the field of Microwaves”*

**11:00** Coffee Break

**11:30** General Assembly

**13:00** Lunch, Teatro Mobile, Bastione di Saint Remy

**Poster session (Thursday 19 June, 11:00-12:00 and 16:30-17:00, Cittadella dei Musei)**

- P1. "Defect Evaluation in Pentacene Thin Film Transistors through Photocapacitance and Admittance Spectroscopy Studies", **Rosalba Liguori**, Università di Salerno
- P2. "Fabrication of Graphene Field Effect Transistors (GFET) possessing a photoelectrical response", **Marco Angelo Giambra**, Università di Palermo
- P3. "Simulation-based prediction of cable parameters under thermal gradients for application to cryogenic noise characterizations", **Riccardo Cleriti**, Università di Roma Tor Vergata
- P4. "Small-signal and noise performance of 0.5- $\mu\text{m}$  diamond MESFETs", **Sergio Colangeli**, Università di Roma "Tor Vergata"
- P5. "RF dual band harvester architecture for low voltage indoor sensor devices", **Vincenzo Stornelli**, Università dell'Aquila
- P6. "Innovative organic IAQ sensor", **Giorgio Pennazza**, Università Campus Bio-Medico Roma
- P7. "Drinkable Water Characterization via a Potentiometric Device", **Marco Santonico**, Università Campus Bio-Medico Roma
- P8. "Effects of hydrodynamic and parasitic electrostatic forces in comb microstructures of MEMS accelerometers", **Fabrizio Cerini**, Università di Brescia
- P9. "Optical forces control in photonic/plasmonic device for optical trapping", **Francesco Dell'Olio**, Politecnico di Bari
- P10. "Large Area Printable Organic Photovoltaics: From Fabrication to Electric Power Management", **Andrea Reale**, Università di Roma Tor Vergata
- P11. "CuInSe<sub>2</sub>/Zn(S,O,OH) junction by electrochemical and chemical route for photovoltaic applications", Roberto Luigi Oliveri, Università di Palermo
- P12. "Experimental gain in single mode laser diodes", **Giulia Marcello**, Università di Cagliari
- P13. "An Intrusion Detection System for railway security based on optical fiber technology", **Marco Pisco**, Università del Sannio
- P14. "Radiation Tolerant Fiber Optic Sensors for Humidity Monitoring at CERN", **Marco Consales**, Università del Sannio
- P15. "Sensitivity Analysis of Long Period Gratings in Air-Core Photonic Bandgap Fibers" **Stefania Campopiano**, Università di Napoli "Parthenope"
- P16. "Technology of optofluidic devices based on liquid crystals", **Rita Asquini**, Università di Roma la Sapienza
- P17. "Design, realization and modeling of high efficiency organic solar cells", Francesca Brunetti, Università di Roma Tor Vergata
- P18. "A Hybrid Compression/Error-Correction Technique for Configuration Data of Programmable Devices", **Maurizio Martina**, Politecnico di Torino
- P19. "Advanced Multi-channel Platforms for Ultrasound Research", **Stefano Ricci**, Università di Firenze
- P20. "Accurate timestamping exploiting IEEE802.15.4CSS", **Emiliano Sisinni**, Università di Brescia
- P21. "An Automatic System based on Image Processing Techniques for the Analysis of Nanoparticles", **Stefano Marsi**, Università di Trieste
- P22. "Radars systems for monitoring civil infrastructures and cultural heritage", **Massimiliano Pieraccini**, Università di Firenze
- P23. "Wireless sensor networks for Ultrasonic Guided Waves Inspection", **Luca De Marchi**, Università di Bologna
- P24. "Low cost electrical current sensors with automatic measurement range", **Natale Galioto**, Università di Palermo
- P25. "Blood Pressure Monitoring with a PPG Embedded System", **Diego Agrò**, Università di Palermo
- P26. "Smart rollator for the cognitive impaired: a case study for Cyber-physical systems", **Luca Rizzon**, Università di Trento
- P27. "Battery-powered system for long-term ECG monitoring and datalogging based on one-lead configuration", **Marco Baù**, Università di Brescia
- P28. "A low power wireless and wearable 8-channels EEG recording system", **Lorenzo Bioni**, Università di Cagliari
- P29. "A Wearable Device for PPG Acquisition and Continuous Detection of Sleep Apnea Episodes", **Silvia Macis**, Università di Cagliari
- P30. "Developing a social serious game for green driving and fluid traffic", **Francesco Bellotti**, Università di Genova
- P31. "User adjustable Z additional levels of redundancy in conventional restoring CRZ Analog to Digital converter", **Ali El Rachini**, Università di Cagliari