# POSTER SESSIONS (ordered alphabetically by author)

EMBEDDED INTELLIGENCE

Distributed ANN architecture over WSN — D. Aledo

HIGH EFFICIENCY RF AMPLIFIERS

Linear Assisted Versus Purely PWM Switched-mode Envelope Amplifier — V. **Lazarević**

IoT Applications on Single-board Computer — D. Sánchez & A. Dionisio

MODELING AND SIMULATION OF POWER CONVERTERS

Power MOSFET Modelling for Loss Estimation — A. del Barrio

Modeling of RFID antennas based on magnetic microwires — A. Delgado

On the use of blackbox polytopic models to simulate dc microgrids — A. Francés

Large signal modeling of electronic power converters in grid-feeding and grid-supporting operating modes in AC microgrids — G. Guarderas

Large-Signal Modeling of Bidirectional Battery Charger for Electric Vehicles. System-Level Approach Based on Agent-Based Models In V2g Environment — A. Naziris

Control of a single phase inverter with multiple modulation strategies based on plant inversion — R. Ramos

POWER FACTOR CORRECTION

Three-phase Boost Rectifier For Aircraft Application With Variable Line Frequency And Heavily Unbalance Grid — U. **Borović**

Three-phase Buck Rectifier For Aircraft Application With Variable Line Frequency — U. **Borović**

Isolated Single-Stage Three-Phase Full-Bridge with Current Injection Path PFC Rectifier for Aircraft Application — S. Zhao

POWER TOPOLOGIES

Advanced topology solutions for high power dc-dc converters for aircraft applications — Y. Bouvier

Low Noise Voltage Sensor with High Common Mode Rejection for Energy Buffered Power Converter — C. Li

Achieving a Good Cross Regulation in a Flyback Converter — J. Martínez

Wireless power transfer for electric vehicles — A. Sainz

Forward with Active Clamp for space applications: clamp capacitor, dynamic specification and EMI filter — G. Salinas & B. **Stevanović**

A 99.5% Efficient 50kW/dm3 Hybrid DC-DC step-up Converter for PV Applications — D. Serrano

Low Power Distribution Module for Space Applications: Analysis and Comparison of Different Architectures and DC/DC Topologies — B. **Stevanović** & G. Salinas

IFEC challenge: High efficiency and high power density isolated DC-DC converter for server applications — I. Zubitur, I. Murga, D. Gil, D. Cohadzic & J.L. Millán

RECONFIGURABILITY

Resilient communications for a multi-FPGA hardware accelerated cluster — A. Ortiz & A. Rodríguez

Real Time Operating System With Reconfiguration Support forr Adaptable Satellite Operations — A. Pérez & L. Suriano

Automatic Integration of HLS-Generated Hardware Accelerators in an Embedded Parallel Computing Architecture — A. Rodríguez

New Video Processor Breakthrough for Autonomous Satellite Operation — L. Suriano & A. Pérez

SMART DIGITAL SYSTEMS

Design of an FPGA for generic communication buses management — M. Flores

Wireless Gateway and Network Coordinator for Real-Time Data Acquisition in Ocean Monitoring Applications — A. Gª Gener

An Analysis of the Influence of Binarization Techniques Applied to Swarm Optimization when Solving the Set Covering Problem — J.M. Lanza

SPECIFIC APPLICATIONS

Applying alternating electric fields to restraint cell growth by means of a power inverter — A. Aguirre

Object Recognition for Industrial Applications — D. López

Winding Inter-Turn Short Circuit Tester for Electric Motors — A. Molina

Electro-Hydro-Dynamic DC actuators for cooling electronics — H. Puago

Nano Smart Grid: an energy platform for UPM — V. Rivas

AC Current Source Controlable between 1 Hz and 50 kHz for Magnetic Freezing Applications: Power Stage and Control — A. Rodríguez, E. Ballesteros & G. Fuente

WIRELESS SENSOR NETWORKS

Merging Smart Wearables and Wireless Mesh Networks for Collaborative Sensing — J.M. Zornoza

INGENIA PROJECTS: CREATIVITY IN ELECTRONICS (students posters)

Haw-Eye for Paddle tennis

Stairway to heaven: Music on the Stairs

The Smart Student Desk

Automatic Exam Marks Recorder

Smart Parking in the University

# X CEI ANNUAL MEETING

March 23rd – 24th, 2017

## Final Program

UNIVERSIDAD POLITÉCNICA DE MADRID
E.T.S. Ingenieros Industriales

## Special Session on

# Autonomous Vehicles

Topics

- **Embedded intelligence**
- **High Efficiency RF Amplifiers**
- **Modeling and simulation of Power Converters**
- **Power Factor Correction**
- **Power Topologies**
- **Reconfigurability**
- **Smart Digital Systems**
- **Specific Applications**
- **Wireless Sensor Networks**
- **INGENIA projects: creativity in electronics**

POLITÉCNICA "Ingeniamos el futuro" | CAMPUS DE EXCELENCIA INTERNACIONAL

CEI UPM | Centro de Electrónica Industrial







## Short courses 9:00-13:00

On Thursday morning you are invited to attend a short course.

Two short courses are running in parallel, please indicate in your registration which one you would like to attend.

**CEI Room: Sala A**

***Networked Embedded Systems for Internet of Things: A Practical Approach***

**Jorge Portilla, Teresa Riesgo & Gabriel Mujica (CEI)**

**CEI Room: Sala B**

***Three-Phase Rectifiers Basic Concepts, Topologies and Control***

**Uroš Borović, Jesús A. Oliver** (CEI) **& Antonio Lázaro** (C3M)

# Thursday, March 23rd

**Aula C**

## Registration at CEI Annual Meeting 15:30-16:00

## Opening Session 16:00-16:30

**Asunción de María Gómez (UPM Vice-rector for Research, Innovation & Doctoral Studies)**

**Emilio Mínguez (ETSII Director)**

**Javier Uceda (CEI Director)**

## Panel debate 16:30-18:30

### AUTONOMOUS VEHICLES

**Ángel Álvaro (Thales Alenia Space España)**

**Jorge Villagra (CSIC)**

**Sebastián López (Universidad de Las Palmas)**

## Visit CEI facilities. Poster Session 18:30-20:30

The poster session will be held in the main lab of Centro de Electrónica Industrial (CEI). You will have the opportunity to discuss with the researchers and to see the latest CEI outcomes. Beverages and food will be available during the session.

Find the list of the posters in the last page.

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**Room ETSII: Aula C**

# Friday, March 24th

CEI researchers will present some current activities at CEI and some Industry partners will show our joint research and strategy

## TECHNICAL SESSION: Oral Session (I) 9:00-11:15

**SESSION CHAIR: ANDRÉS OTERO / MIROSLAV VASIĆ**

IFEC 2017, the challenge is made: Extremely efficient (97%) and ultra-dense (15kW/dm3) isolated DC-DC converter for server applications — **I. Zubítur (CEI)**

Reconfigurable Architectures for High Performance Embedded Computing — **A. Rodríguez (CEI)**

GaN applications for in-orbit energy management — **E. Lapeña (Airbus Defense and Space)**

Cloud gaming: business, technical analysis and future — **José J. Gª Aranda (NOKIA)**

Towards 99.5% Efficient 50 kW/dm3 Hybrid dc-dc Boost Converter for PV Applications — **D. Serrano (CEI)**

New flexible magnetic material for long rfid emitter antennas — **J. Rodríguez (PREMO)**

## COFFEE BREAK 11:15-12:00

## TECHNICAL SESSION: Oral Session (II) 12:00-14:15

**SESSION CHAIR: ROBERTO PRIETO / TERESA RIESGO**

Hardened by Design SRAM-Based FPGA Systems in Space Applications — **A. Pérez (CEI)**

Resilient EmBedded Electronic systems for Controlling Cities under Atypical situations — **F. Rincón (Univ. Castilla-La Mancha)**

Autonomous Vision-Based Navigation on Space Scenarios — **D. González-Arjona (GMV)**

Advanced solutions for the design and optimization of high power DC/DC isolated converter for aircraft applications — **Y. Bouvier (CEI)**

Comparison of Three-phase Active Rectifier Solutions for Avionic Applications: Impact of the Avionic Standard DO-160 F and Failure Modes — **U. Borović (CEI)**

On the use of blackbox polytopic models to simulate dc microgrids — **A. Francés (CEI)**

**At 14:15 h. photo group at the ETSII Main entrance**

**COCKTAIL** will be served in the **Sala de los Retratos** at 14:30 h.