

POSTER SESSIONS

EMBEDDED INTELLIGENCE

- D. Aledo *Design methods for HW implementations of ANN*
D. P. Daza *Adaptive Hardware Parallel Particle Filter*
M. Villaverde *Cooperative learning model for a more reliable embedded intelligent system*

HIGH EFFICIENCY RF AMPLIFIERS

- M. Patiño & M. Nicolás *Suboptimum Class-E amplifier for the S-Band*
J. Qian *Analysis and Optimization of Multilevel Envelope Tracking Power Supply Based on Switching Capacitors*
D. Tena *High efficiency linear EER amplifier for the L-Band*

INGENIA PROJECTS: CREATIVITY IN ELECTRONICS

- Blue team *BikeWatch: don't let thieves take your bike!*
Red team *ETSII MAP: Find your way in the ETSII building*
Green team *ETSII POCKET*
Yellow team *Smart Chalkholder*
Infrared team *SPIN: Smart pedal system to power your electronic devices*

MODELING AND SIMULATION POWER CONVERTERS

- L.C. Fernández Relea *Simulation of grid-supporting power converter operating as a voltage source*
D. Cucak *Physical Modeling and Optimization of a GaN HEMT design with a Field Plate Structure for HF Application*
F. Holguin *A FEA based non-linear magnetic core model for circuit simulation*
A. Morena *PowerSOC. Inductor Modeling*
J.C. Ramos *Modelling EMI filter components*
V. Svikovic *Energy-Based switches losses model for the optimization of PwrSoC buck converter*

POWER FACTOR CORRECTION

- U. Borović *45kW Three-Phase Active Rectifier for High Efficiency Aircraft Application*
I. Castro *SiC makes possible a current fed push-pull with power factor correction as a single stage ac to dc driver for HB-LEDs*
K. Martín et al. * *Standby implementation in a boost power factor corrector*
U. Borović & R. Ramos *Three-Phase Buck Rectifier for Aircraft Application with Variable Line Frequency*
R. Ramos & J. Pérez *Three-Phase Buck-Type Rectifier with Very Demanding Load Steps*
Z. Zhao *Analysis and Design of an Isolated Single-Stage Three-Phase Full-Bridge with Current Injection Path PFC Rectifier for Aircraft Application*

POWER TOPOLOGIES

- A. Rodríguez et al. * *Technological challenges in the development of a solid state transformer based on modular multilevel converters using cells with power injection capability*
Y. Bouvier *45kW Full Bridge Converter with Discontinuous Primary Current for High Efficiency Aircraft Application*
Y. Bouvier & A. Martínez *Series Input-Parallel Output 10kW converter based on Series Resonant Dual Active Bridge topology for High Efficiency Aircraft Application*
M. Silva *Isolated Swiss-Forward Rectifier for Aircraft Applications*
J. Maañon & N. Alonso *HVDC back-to-back converter based on MMC*

RECONFIGURABILITY

- J. Mora *Towards faster evolvable hardware solutions*
S. Muñoz *GPU Face Detection & Recognition with CUDA oriented to implementations on Embedded Systems*
A. Rodríguez & D. Gozalo *Task-level and data-level parallelism: the ARTICo3 approach using memory-mapped or dataflow-based multithreaded accelerators*
J. Valverde & C. Castañares *Run-Time Dynamically Adaptable FPGA-based Architecture for High-Performance Autonomous Distributed Systems*
F. Veljkovic *Adaptive Reconfigurable Voting for an Enhanced Reliability in Medium-Grained Fault Tolerant Architectures*
R. Conejo, P. Iglesias & C. Correa *Evolvable hardware for brain computer interfaces*

SPECIFIC APPLICATIONS

- R. Cañas & D. Sánchez *Wireless Power Transmission*
J.M. Fernández *High-Current and Low-Voltage Power Supplies for the XFEL Superconducting Magnets*
A. Francés *Dc smart nanogrids for local power distribution: modelling and control*
K. Martín et al. * *Dc smart nanogrids for local power distribution: architectures and buses*
J.M. Molina *SP Co Technologies: from Programming to Configuring*
F. Pascual *Control Circuit for High Speed Brushless De-excitation System (HSBDS)*
H. Cristóbal & C. Ucha & V. Cordon *Google Little Box Challenge*
M. González & M. Guifford *Wireless Power Transfer for Medical Applications*

WIRELESS SENSOR NETWORKS

- K. Bellazi *Automatic surveillance and monitoring system. Using Iwir cameras*
A. García *In-situ Simulation Techniques for Optimizing the Deployment and Connectivity of WSNs*
F.J. Gordillo *Novel Optimization Algorithms for Efficiently Deploying Wireless Sensor Networks, within the Context of Smart Cities*
G. Mujica *HW/SW-based Commissioning Toolset and Framework for Deploying, Debugging and Optimizing Wireless Sensor Networks*
S. Muñoz Irene Potti *Enviguard Port: Communications for Real-Time Aquatic Environment Monitorization*

* UNIVERSIDAD DE OVIEDO



Final Program

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

April 16th – 17th, 2015

Special Session on A senseable world

Topics

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



CAMPUS
DE EXCELENCIA
INTERNACIONAL

CEIUPM

Centro de
Electrónica
Industrial



CEI Room: Sala de Prácticas & Sala de Ordenadores

Short courses 9:00-12:00

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.

Digital control of Power Electronics Converters

Javier Uceda, Jesús A. Oliver

Reconfigurable Systems & Evolvable Hardware

Eduardo de la Torre

Aula C

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

Opening Session 16:00-16:30

Patxi Elorza (Vicerrector de Planificación Académica y Doctorado de la UPM)

Emilio Mínguez (Director de la E.T.S. de Ingenieros Industriales)

José A. Cobos (Director del Centro de Electrónica Industrial - CEI)

Panel debate 16:30-18:45

A SENSEABLE WORLD

Session chair: J. Uceda (CEI)

Pablo García
Francisco Jariego
Elisa Martín
David Bordonada

BQ
Telefónica
IBM
Libelium

Visit CEI facilities. Poster Session 19:00-20:30

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.

TECHNICAL SESSIONS

Oral Session (I) 9:00-11:15

SESSION CHAIR: JORGE PORTILLA / PEDRO ALOU

Back to Back HVDC converter based on MMC

J. Maañón (CEI)

Hardware Accelerators: Going Multithreaded in Embedded Systems

A. Rodríguez (CEI)

High efficiency linear EER amplifier for the L-Band

D. Tena (CEI)

Nano-magnetics for Offline power supplies

S. Kulkarni (Tyndall, Irland)

Evolution of electrical networks on-board, future challenges and INDRA's response

J. Carmena (INDRA)

45kW Three-Phase Active Rectifier for High Efficiency Aircraft Application

U. Borović (CEI)

COFFEE BREAK 11:15-12:00

Oral Session (II) 12:00-14:15

SESSION CHAIR: TERESA RIESGO / MIROSLAV VASIĆ

Ultra Efficient Power Conversion for Solar Applications

P. Grbovic (Huawei, Germany)

DC smart nanogrids for local power distribution: architectures, modelling and control

K. Martín (UO) y A. Francés (CEI)

Fractionated Satellites: Evolvable Hardware in Space

A. Álvaro (Thales, Spain)

In-situ Simulation Techniques for Optimizing the Deployment and Connectivity of Wireless Sensor Networks

A. García (CEI)

SP Control Technologies: from Programming to Configuring

J.M. Molina (SP Control, Spain)

Reconfigurable and Adaptive SoPCs: Towards Enhanced Reliability and Flexibility in Aerospace

F. Veljković (CEI)

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

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