

POSTER SESSIONS

Advanced Power Electronic Systems

Three-Phase PFC for Aircraft Applications with 12kW/dm³ Power Density
Cross regulation analysis in a flyback with passive snubber
Design of Inductive Power Transfer System Considering Wide Gap Variation
Optimized Design for Wireless Coil for Electric Vehicles Based on The Use of Magnetic Nano-Particles
Design of high power magnetic components for a multiphase buck converter
Highly Efficient and Compact Gan-Based High Frequency Inverters for Automated Testing Applications
Differential Power Processing Architectures Accounting for the Differential Power of the Converters
Development of a tool for fast analysis of dc chokes
Design and layout of a high power three phase buck converter
Auxiliary supply, storage capacitor and inductor optimization for the Google Little Box Challenge inverter
Single-Phase Single-Stage Inverter for the Google Little Box Challenge
DCM forward-flyback converter with cockcroft-walton voltage multiplier: steady-state analysis considering the influence of parasitic capacitances at very low power consumption and very high voltage gain
Highly Efficient, Full ZVS, Hybrid, Multilevel DC/DC Topology for Two-Stage Grid-Connected 1500-V PV System With Employed 900-V SiC Devices

N. Alonso , A. Castro & G. Salinas
A. Campanero
A. Delgado , N. Alonso & R. Ramos
A. Delgado
A. García & Y. Bouvier
V. Lazarević & I. Zubitur
C. Li
A. Martín
J. Martínez & Y. Bouvier
E. Peredo
D. Serrano & R. Ramos
J.A. Serrano
B. Stevanović

Embedded Intelligence and Reconfigurable Systems

Neuro-evolvable hardware for lifelong self-adaptive systems
From Performance Modeling to Intelligent Self-Management of Hardware Acceleration
Reconfigurable Video Processor for space applications with adaptive HW acceleration and fault mitigation techniques
Reconfiguration firewall: Towards secure and reliable dynamic reconfiguration
A Framework to Support Run-Time Adaptation in Reconfigurable Multi-Accelerator Systems
A Video Game on Heterogeneous Multiprocessor System on Chip with Hardware Acceleration
Cooperative learning model for weighted decisions in embedded intelligent systems
Multi grain dynamic partial reconfiguration for highly flexible systems

A. García
A. Ortiz
A. Pérez
B. Revuelta
A. Rodríguez
L. Suriano & D. Lima
M. Villaverde
R. Zamacola

Internet of Things

Power Management and Control of a Micro-Scaled Redox Flow Battery
Smart and Mobile Sensing in Cities
Hardware validation and Contiki-ng porting to a modular platform for IoT in the Edge
Hardware Implementation of Security Strategies on the Edge of IoT
Distributed Deep Learning for 3D object classification in Extreme Edge IoT platforms using neuromorphic Hardware accelerators

A. Bernaldo de Quirós
W.F. López
P. Merino
J. Señor
C. Wisulstschew

Modeling and simulation of Power Converters

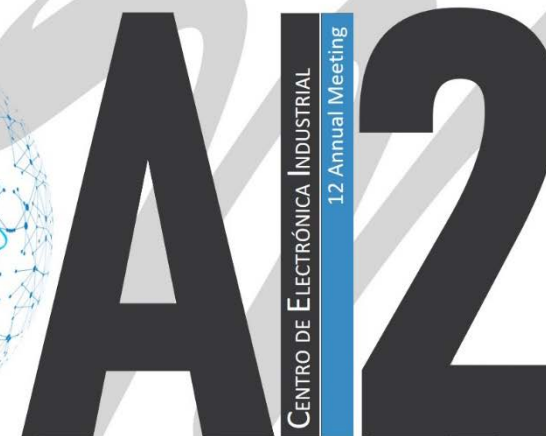
3D Power modelling: LLC in a single and compact component
Electro-thermal modelling of magnetic components for space applications
High efficiency 2 - phases Buck-converter for Power Supply Modulation
Large Signal Region of Stability determination using Lyapunov method for black-box models
Very High Power Systems Modelling for its Application to Human Space Exploration Missions
Dynamic-On Resistance Characterization on GaN Transistors
Thermal model for inductors and transformers based on 3D FEA results
Control of a three phase interleaved buck converter with variable input current reference
Evaluation of losses and performance of a hybrid switch combining IGBT and SiC MOSFET

A. de Juan
D. de la Hoz & G. Salinas
L. Gómez
H. Mazaheri
S. Rojas
S. Rojas & D. Serrano
G. Salinas
I. Senent & Y. Bouvier
M. Soria

Specific Applications

Multidirectional Wireless Power Transfer for Implantable Medical Devices
On-Chip Voltage Conversion for Thermal Energy Harvesting on 3D MPSoC
High speed pulse width modulation using multi-gigabit transceiver
Data Processing Techniques for Expert Resonant Nano-Pillars Sensors: Case of Study Measuring Compounds in Water Matrices
Wireless Power Transfer for less invasive deep brain stimulation implants
Mechanical energy harvester for on track wireless communication equipment
A novel self-adaptive wireless power transfer system to cancel the reactance of the series resonant tank and deliver more power
Mechanical energy harvester for on track wireless communication equipment
Compact Electrosurgical Generator with programmable waveform for enhanced tissue ablation.

P. García
J. Hunter
D. Lukić & N. Višnjić
R. Mariño
J.C. Rodríguez
V. Sergi & L. Shi
L. Shi
L. Shi
I. Zubitur & V. Lazarević



Special Session on

Artificial Intelligence in Industrial Electronics

Final Program

XII International Annual Meeting CEI

Topics

Advanced Power Electronic Systems
Embedded intelligence & Reconfigurable Systems
Internet of Things
Modeling and Simulation of Power Converters
Specific Applications



CEIUPM
Centro de
Electrónica
Industrial



POLITÉCNICA

"Ingeniamos el futuro"

Short courses

9:00-13:00

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

Three short courses are offered, Course A is running in parallel with Courses B and C that run sequentially.

Course A (9:00-13:00 h.)**Deep Learning in Edge Devices**

Coordinators: [A. Otero](#), [J. Portilla](#), [C. Wisultschew](#) & [A. Rodríguez](#) (CEI)

Course B (9:00 -11:30 h.)**Power Converters in Smart Micro-Grids**

Coordinators: [J. Uceda](#), [M. Jiménez](#) & [A. Francés](#) (CEI)

Course C (11:45-13:00 h.)**Review of IoT design: Architectures, signal integrity and energy managements**

Coordinators: [V. Medina](#) ([Rohde&Schwarz](#))

Thursday, April 4th

Aula C

Registration at CEI Annual Meeting

15:30-16:00

Opening Session

16:00-16:30

Panel debate

16:30-18:30

ARTIFICIAL INTELLIGENCE IN INDUSTRIAL ELECTRONICS

José M^a Molina (SP Control Technologies)

Raúl Regada (Thales Alenia Space España)

Andrea Cucurull (INTEL)

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.



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

TECHNICAL SESSIONS: Oral

9:00-11:15

SESSION CHAIR: [JESÚS A. OLIVER](#) / [ANDRÉS OTERO](#)

Design of Inductive Power Transfer System Considering Wide Gap Variation

[A. Delgado](#)

Multi-grain dynamic reconfiguration for lifelong self-adaptive systems

[R. Zamacola](#)

Three-Phase PFC for Aircraft Applications with 12kW/dm³ Power Density

[N. Alonso](#)

Data Processing Techniques for Expert Resonant Nano-Pillars Sensors: Case of Study Measuring Compounds in Water Matrices

[R. Mariño](#)

Large Signal Region of Stability determination using Lyapunov method for black-box models

[H. Mazaheri](#)

Reconfiguration firewall: Towards secure and reliable dynamic reconfiguration

[B. Revuelta](#)

COFFEE BREAK

11:15-12:00

TECHNICAL SESSIONS: Oral

12:00-14:15

SESSION CHAIR: [EDUARDO DE LA TORRE](#) / [AIRÁN FRANCÉS](#)

Dynamic ON-Resistance Characterization on GaN Transistors

[S. Rojas](#)

Extreme Edge IoT platforms using neuromorphic Hardware accelerators

[C. Wisultschew](#)

A novel self-adaptive wireless power transfer system to cancel the reactance of the series resonant tank and deliver more power

[L. Shi](#)

Differential Power Processing Architectures Accounting for the Differential Power of the Converters

[C. Li](#)

IoT Initiative at CEI

[J. Portilla](#)

DCM forward-flyback converter with cockcroft-walton voltage multiplier

[J.A. Serrano](#)

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.