



**IEEE INTERNATIONAL POWER ELECTRONICS  
CONGRES 2004**

**PRELIMINARY PROGRAM**

**TUTORIALS**

**SUNDAY OCTOBER 17**

08:30 – 13:00

ROOM A

"Calidad de la Energía Eléctrica"  
By Dr. Luis Morán

ROOM B

"Design and Modeling of High Frequency Magnetic"  
By Dr. Roberto Prieto

15:00 – 19:30

ROOM A

"Control in Power Electronics"  
By Dr. Hebertt Sira-Ramírez.

ROOM B

"Interleaving of Power Converters"  
By Dr. Oscar Garcia

## TECHNICAL SESSIONS

### MONDAY OCTOBER 18

#### PLENARY SESSION

09:00 – 12:30

ROOM C

- 09:30**     **Supplying Energy to Mobile and Autonomous Electronics**  
J. A. Cobos, O. García and J. Uceda. *Universidad Politécnica de Madrid, Spain*
- 10:00**     **Multipulse Diode Rectifiers for High Power Multilevel Inverter Fed Drives**  
B. Wu, Y. Li and S. Wei . *Ryerson University, Canada*
- 10:30**     **BREAK**
- 11:00**     **Modeling and Design of Piezoelectric Transformers for Low Power Applications**  
A.M. Sánchez, R. Prieto, M. Sanz, J. A. Oliver, J. A. Cobos.  
*Universidad Politécnica de Madrid, Spain*
- 11:30**     **Nonlinear Analysis of Interactive Power Electronic Networks**  
S.K. Mazumder. *University of Illinois. USA*
- 12:00**     **A Low Cost Method for the Diagnostic of Asynchronous Motors in Case of Rotor Defects**  
H.Razik and G.Didier. *Universit'eHenriPoincar'e. France.*

#### SESSION 1 POWER FACTOR CORRECTION

15:00 – 17:00

ROOM C

- 15:00**     **Voltage Regulator with Reduced Power Processing**  
L. Camacho N. Vázquez C. Hernández J. Villegas. *Instituto Tecnológico de Celaya. México; J. Arau. Cenidet. Mexico*
- 15:30**     **A New Active Input Current Shaper with Reduced Power Processing**  
N. Vázquez, L. Camacho A. Arreguín J. Delgado, C. Hernández.  
*Instituto Tecnológico de Celaya, Mexico*
- 16:00**     **High Performance Three-Phase Three-Wire High-Power Active Front-End**  
F. Liccardo P. Marino C. Schiano N. Visciano. *Seconda Università degli Studi di Napoli, Italy*
- 16:30**     **Analysis and Design of a PWM Rectifier using the DQ Theory and a Digital Control Based in a DSP**  
J. Lira, V. Cárdenas, C. Núñez. *Universidad Autónoma de San Luis Potosí, Mexico*

## TUESDAY OCTOBER 19

### SESSION 2 DC/DC CONVERTERS

08:30 – 13:00

ROOM A

- 08:30**     **Current Fed Push-Pull Topology with Self Driven Synchronous Rectification Applied to Low Voltage**  
L.A. Flores, A. Soto, P. Alou, O. García and J.A. Cobos. *Universidad Politécnica de Madrid . Spain*
- 09:00**     **Transient Response Comparison of Conventional and Output-Inductorless Two-Stage DC-DC Converter with Low-Voltage/High Current Output**  
Seiya Abe, Tamotsu Ninomiya, *Kyushu University, Japan*; Junichi Yamamoto, Takeshi Uematsu, *TDK Corporation, Japan*
- 09:30**     **Complete Procedure to Model the Thermal Behavior of Magnetic Components**  
L.M. Escribano, R. Prieto, J.A. Oliver and J.A. Cobos. *Universidad Politécnica de Madrid . Spain*
- 10:00**     **Discrete Sliding Mode Control with Overshot Correction for Interleaved VRM**  
D. Figueroa, A. Avila, *Instituto Tecnológico y de Estudios Superiores de Monterrey, Mexico*; N. Vázquez. *Instituto Tecnológico de Celaya, Mexico*
- 10:30**     **BREAK**
- 11:00**     **Fussing Management System in a Dual Voltage 14V/42V System Using the Communication Protocol Request Detection Bus (RDbus)**  
Benito Pérez-Solórzano, Ernest Gil Dolcet, Javier Maixe Altes and Enric Vidal., *Universitat Rovira i Virgili, Spain*
- 11:30**     **Fuzzy Pulse Skip Modulation Mode in DC/DC Converter**  
Luo Ping, Li Zhaoji, Xiong Fugui, *School of Microelectronics and Solid-State, China*; Chenguangj, *School of Automation Engineering, China*
- 12:00**     **Dual Phase DC/DC Converter in Fuel Cell Electric Vehicle**  
Haiping Xu, Xuhui Wen, Li Kong, *Chinese Academy of Sciences, China*

SESSION 3 MODELLING AND SIMULATION

15:00 – 17:00

ROOM A

- 15:00 Comparison of Modelling Methods and of Diagnostic of Asynchronous Motor in Case of Defects**  
Casimir R., Bouteleux E., Yahoui H., Clerc G., Henao H., Delmotte C., Capolino G.-A., Rostaing G., Rognon J. P., Foulon E., Loron L., Razik H., Didier G., Houdouin G., Barakat G., Dakyo B., Bachir S., Tnani S., Champenois G., Trigeassou J.-C., Devanneaux V., Dagues B., Faucher J. *Universities of France*
- 15:30 Simulation Model of Controlled PM Linear Synchronous Motor**  
M. Bugeza, R. Fišer, *Faculty of Electrical Engineering, University of Ljubljana, Slovenia*
- 16:00 Analysis of the Duration of Frequency Converter's Repetition Period**  
I. Katz, *Negev Academic College of Engineering, Israel*; M. A. Slonim, *Ben Gurion University of the Negev., Israel*

**WEDNESDAY OCTOBER 20**

SESSION 4 PART I MOTION CONTROL

08:30 – 10:30

ROOM A

- 08:30 Experimental Setup for the Sensorless Rotor Position and Velocity Control of a Permanent Magnet Stepper Motor**  
Ja. Alvarez Gallegos, E. Alvarez Sánchez and R. Castro-Linares.  
CINVESTAV - IPN, Mexico
- 09:00 Broken Bars and/or End Rings Detection in Three Phase Induction Motors by the Exited Park's Vector Approach**  
A. Aboubou, M. Sahraoui, S. E. Zouzou, *University Med KHIDER, Algeria*; H. Razik, A. Rezzoug, *University Henri Poincaré, France*
- 09:30 Comparison of Several Nonlinear Controllers for Induction Motors**  
C. Cruz, M.A. Gallegos, R. Alvarez, F. Pazos, *Universidad Autónoma de San Luis Potosí, Mexico*
- 10:00 A Novel Torque Comparator for Torque and Current Ripple Reduction of Direct Torque Control of Induction Machine**  
Hamid Reza Keyhani, Mohammad Reza Zolghadri, Saeed Haghbin, *Sharif University of Technology, Iran*

## SESSION 5 ACTIVE FILTERS

11:00 – 15:30

ROOM A

- 11:00 A Comparative Development for the Modulation Techniques to Multilevel Trinary Inverter Applied to Current Active Filters**  
Homero Miranda, Víctor Cárdenas, Jorge Pérez. *Universidad Autónoma de San Luis Potosí, Mexico*
- 11:30 DQ Transformation Development for Single Phase Systems to Compensate Harmonic Distortion and Reactive Power**  
Mario González, Víctor Cárdenas, Felipe Pazos *Universidad Autónoma de San Luis Potosí, Mexico*
- 12:00 Nonlinear Observers Applied to Reduce Sensors in Series Active Filters**  
M. Flota, C. Núñez, R. Alvarez, *Universidad Autónoma de San Luis Potosí, Mexico*
- 12:30 An Analog Circuit to Implement a Repetitive Controller for Harmonic Compensation**  
J. Leyva-Ramos, G. Escobar and P. R. Martínez. *IPICYT, San Luis Potosí, Mexico*; P. Mattavelli, *Udine University, Italy*
- 13:00 LUNCH**
- 15:00 Power Quality Improvement in Three Phase Four-Wire Systems Using Shunt Active Filters**  
A. Esfandiari, M. Parniani, H. Mokhtari, *Sharif University of Technology, Iran*

## SESSION 4 PART II MOTION CONTROL

15:30 – 17:00

ROOM A

- 15:30 Sliding Mode Control of SVPWM Inverters Double Star Asynchronous Machine Drive**  
N. Madani, M.F. Benkhoris, C. Millet, R. Le Doeuff, *Bd de l'Université, France*
- 16:00 Improved Performance of Fuzzy Logic Based Direct Field Oriented Controlled Induction Motor**  
Akshay K. Rathore, *University of Victoria, Canada*
- 16:30 Simulation of Secondary Flux Oriented Control of Linear Induction Motor Considering Attraction Force & Transverse Edge Effect**  
Akshay K. Rathore, *University of Victoria, Canada*; Som N. Mahendra, *National Institute of Technology, India*
- 17:00 Loss Minimization of Direct Torque Control of Permanent Magnet Synchronous Machine**  
Junfeng Xu, *Southwest Jiaotong University, China*; Jianghua Feng, *Zhuzhou Electrical Locomotive Research Institute, China*; Jianping Xu *Southwest Jiaotong University, China*

## THURSDAY OCTOBER 21

### SESSION 6 INDUSTRIAL ELECTRONICS

08:30 – 12:00

ROOM A

- 08:30 A Novel Uninterruptible Power Supply with High Performance**  
J. Villegas, N. Vázquez, L. Camacho, C. Hernández, *Instituto Tecnológico de Celaya, Mexico*, J. Arau, *cenidet, Mexico*
- 09:00 PWM Switching Patterns Optimization for Multilevel Inverter using a FPGA**  
Carlos Sanabria, Sinuhé Ramírez, *cenidet, Mexico*; Víctor Cárdenas *Universidad Autónoma de San Luis Potosí, Mexico*. Jaime Arau, *cenidet, Mexico*
- 09:30 Optimization of the Four Step Switching Sequence used by a Single Phase AC-AC Converter to Compensate Voltage Sags and Swells**  
Jorge Pérez, Víctor Cárdenas, Homero Miranda; *Universidad Autónoma de San Luis Potosí, Mexico*
- 10:00 Analysis and Design of a Three Phase PLL Structure for Utility Connected System Under Distorted Utility Conditions**  
Sérgio Augusto Oliveira da Silva, *CEFET-PR, Brasil*; Ernane Antônio Alves Coelho, *Federal University of Uberlândia, Brasil*
- 10:30 BREAK**
- 11:00 Three Phase PWM Inverter System Under Typical Electric Power Disturbances with a Feedforward Control Compensation**  
Ramiro Gutiérrez-Aguilar, José Luis Durán-Gómez, *Instituto Tecnológico de Chihuahua, Mexico*
- 11:30 Study on Conducted EMI Suppression Method in PWM Adjustable Speed System**  
Sun Li, Nie Jianhong, Wu Fengjiang, *Harbin Institute of Technology, China*

SESSION 7 ELECTRONIC BALLAST

12:00 – 13:30

ROOM A

**12:00 High Efficiency – High Power Factor Self-Oscillating Electronic Ballast**

M.Ponce, M.A. Juárez, C. Aguilar., *cenidet, Mexico*

**12:30 Evaluation of Frequency Modulation Techniques to Avoid Acoustic Resonances in Electronic Ballast for HID Lamps: Analysis and Methodology**

J. Correa, *Instituto Tecnológico de Morelia, Mexico*; M. Ponce, J. Arau, M. Sánchez, *cenidet, Mexico*; J. M. Alonso, *Universidad de Oviedo, Spain*

**13:00 Linear and non linear models for ozone generators**

Mario Ponce, Jorge Aguilar, Jaime Fernández, Erwin Beutelspacher, José M. Calderón, Claudia Cortes, *cenidet, Mexico*