Research efforts in electrical power conversion have been increased in recent years due to the raising price of fossil fuels and EU directives for renewable energy sources. Electrical power quality and control strategies for efficient energy conversion and integration of renewable energy sources in electrical grids play a main role.

This technical session is divided into two parts. Two distinguished lecturers, Marco Liserre and Regan A. Zane, will give the audience two different approaches to energy conversion in the morning while the afternoon session will be an open meeting which will allow the attendants to exchange their experiences on these topics. The first lecture is focused on ac-voltage/dc-voltage control using different structures, such as voltage oriented control and direct power control, and will finish with islanding, microgrid droop control and grid supporting. The second one will consist on an introduction to autotuning and adaptive control techniques in switched-mode power supplies.

Researching groups and companies interested in contributing to the afternoon session must confirm their attendance and will have five minutes to explain their activities and/or researching lines (contact emails: morenov@unican.es, pigazoa@unican.es).

Schedule:

Wednesday, April 30, 2008

9:00-9:10	Technical Session Presentation
9:10-11:10	***Grid Converters Control in renewable energy systems*** (Dr. Marco Liserre)
11:10-11:30	Coffee Time
11:30-13:30	***Digital autotuning and adaptive control techniques for switched-mode power supplies*** (Dr. Regan A. Zane)
13:30-16:00	Lunch Time
16:00-18:00	- Presentation of attendants - Meeting: "Electrical Power Conversion: Efficiency and Renewable Energy Sources" (Languages: English and Spanish)

Location

Sala de Grados E. T. S. I. Industriales y de Telecomunicación
Universidad de Cantabria
http://www.etsiit.unican.es/

Languages:

The lectures will be given in English. English and Spanish languages can be employed during the afternoon meeting but the contributing attendants must give their presentation in English.

Lecturers:

Marco Liserre, (S'00–M'03–SM'07) received the MSc and PhD degree in Electrical Engineering from the Bari Polytechnic, respectively in 1998 and 2002. From January 2004 he is an assistant professor of the Bari Polytechnic teaching courses of power electronics, industrial electronics and electrical machines. He has worked towards several projects funded by the Italian Minister of Research and by private companies. His research interests are in the control of power converters. He has co-authored 96 technical papers, 20 of them in international peer-reviewed journals and 3 chapters of an international book. He has been visiting Professor, in 2004, at Aalborg University (Denmark) and, in 2006, at Alcala de Henares University (Spain). He has lectured at Delft University (Netherlands), at Warsaw University of Technology (Poland), at University of Kiel (Germany), at University of Minnesota (USA), and he has given tutorials at the international IEEE conferences IECON 2005 (USA), ISIE 2006 (Canada), IECON 2006 (France), EPE 2007 (Denmark).
Dr. Liserre is a member of the IEEE Industry Applications, IEEE Industrial Electronics, and IEEE Power Electronics Societies. He is Editor of the Industrial Electronics Magazine and Associate Editor of the IEEE Transactions on Industrial Electronics. He is Chairman of the Industrial Electronics Society Technical Committee on Renewable Energy Systems.

Regan A. Zane (M'99-SM'07) received the B.S, M.S., and Ph.D. degrees in Electrical Engineering from the University of Colorado, Boulder, in 1996, 1998, and 1999, respectively. He is currently an Assistant Professor of Electrical Engineering at the University of Colorado. From 1999 to 2001, he worked as a Senior Research Engineer at the GE Global Research Center, Niskayuna, NY. At GE, he developed custom integrated circuit controllers for power management in electronic ballasts and lighting systems. In 2001, he joined the University of Colorado as a faculty member, where he has ongoing research programs in energy-efficient lighting systems, adaptive and robust power management systems, and low power energy harvesting for wireless sensors. Dr. Zane received the NSF Career Award in 2004 for his work in energy efficient lighting systems, the 2005 IEEE Microwave Best Paper Prize, the University of Colorado 2006 Inventor of the Year award and 2006 Provost Faculty Achievement award. He currently serves as Associate Editor for the IEEE Transactions on Power Electronics Letters.

Organizers:

Vicerrectorado de Investigación y Transferencia del Conocimiento, UC.

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Dep. of Electronics and Computers, UC.

Dep. of Electronics Technology, Systems and Automation Engineering, UC.

IEEE Joint Spanish Chapter (PELS-IES)

Technical Session in

ELECTRICAL POWER CONVERSION: Efficiency and Integration of Renewable Energy Sources

April 30, 2008

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