

UNIVERSITY OF UDINE

Department of Electrical, Management and Mechanical Engineering (DIEG)

RECENT TRENDS IN AUTOMOTIVE POWER ELECTRONICS AND DRIVES for Electric/Hybrid Vehicles RETAPED - FIRST EDITION AN EDLAB-NET WORKSHOP



UDINE, 15th DECEMBER 2014

TECHNICAL CONTRIBUTIONS





UNIVERSITY OF MICHIGAN

TECHNICAL SUPPORT

North Italy IAS-PELS-IES

Joint Chapter

EEE



SPONSORS





Vehicular Technology/Communication Society Joint Chapter Italy Section

AGENDA

- 8.45 Registration
- 9.15 Introduction



prof. Roberto PETRELLA, chairman, Univ. of Udine *prof. Roberto RINALDO*, head of DIEG, Univ. of Udine *prof. Silverio BOLOGNANI*, Pro-Chancellor, Research, University of Padova

- 9:30 Wireless Charging of Electric Vehicles with Extremely High Efficiency and Misalignment Tolerance prof. Chris MI, University of Michigan, Dearborn, USA
- 10:10 Automotive Battery Charger for Plug-In EVs: Series-Production-Oriented Design and Testing *dr. Cesare LASAGNI*, Metasystem Group, Italy
- 10:30 Finite Element Simulation of On-Board Battery Charger Magnetics *dr. Paolo MONTANARI*, Metasystem Group, Italy
- 10:50 **Power Electronics and EM for Electrical Scooter and Hybrid Applications** *dr. Fabio ALPIOVEZZA*, Eldor Corporation, Italy
- 11:10 Coffee break
- 11:30 Sensorless Integrated-Starter/Alternator with Ringed-Pole PM Synchronous Motor Drive for Automotive Applications - Design and Test *dr. Mattia MORANDIN*, University of Padova, DII
- 11:50 **PM Assisted Synchronous Reluctance Motor for Vehicle Traction - Design and Measurements** *dr. Emanuele FORNASIERO*, University of Padova, DII
- 12:10 Sensorless Control and Parameter Estimation for IPM Synchronous Motors - Recent Advances *dr. Fabio TINAZZI*, University of Padova, DTG
- 12:30 Advanced and Sensorless Control of IPM and Synchronous Reluctance Motor Drives *dr. Sandro CALLIGARO*, University of Udine, DIEG
- 12:50 High Efficiency Power Converters and Drives for Mild Hybrid Traction and Wireless Charging
 - *dr. Alessandro PEVERE*, University of Udine, DIEG (formerly visiting Ph.D. at University of Michigan, Dearborn)
- 13:10 Discussion and closing remarks

ADDRESS

University of Udine «Rizzi» Campus Lecture room M Via delle Scienze, 206 33100 Udine, Italy



SAVE THE DATE 15th December 2014

REGISTRATION

Admittance to the workshop is free. Registration is required for organization purposes. Registration form is located at <u>http://retaped2014.eventzilla.net/</u>.

CONTACTS

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SUPPORT

Keynote lecture is organized within the technical events of the IEEE Vehicular Technology/Communications Society Joint Chapter Italy Section and is supported by the Distinguished Lecturer program of the IEEE Vehicular Technology Society.

KEYNOTE LECTURER



Chris MI – Professor at the University of Michigan, Dearborn, Dept. of Electrical and Computer Engineering. Director of US DOE funded GATE Center for Electric Drive Transportation. Fellow of IEEE & Distinguished Lecturer. General Co-Chair of IEEE Vehicular Technology Society. Technical Chair of IEEE Workshop on WPT and IEEE International Electrical

Vehicle Conference 2014, Florence, Italy – Editor of IEEE Journal of Emerging and Selected Topics in Power Electronics (Special Issue on Wireless Power Transfer) – Research on Electric Vehicles and Hybrid EV topics, including tutorials and seminars for the Society of Automotive Engineers (SAE), the IEEE, workshops sponsored by the National Science Foundation (NSF), and the National Society of Professional Engineers.