IEEE
IEVC FLORENCE 2014
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CONFERENCE PROGRAM

IEEE International Electric Vehicle Conference

Florence, Italy - December 16-19, 2014

IEEE IEVC2014 Organizing Committee

Giuseppe Tomasso - University of Cassino and South Lazio

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Domenico Celenza - ANAE

Finance Co-Chair

On behalf of the entire Organization Committee, I am delighted to welcome all the delegates and their guests to Florence, for the 2nd edition of the IEEE International Electric Vehicle Conference, that will take place from Dec. 16 to 19, 2014. IEVC represents one of the IEEE flagship conferences on electric vehicles.

IEVC will give participants a unique platform to exchange ideas, discover novel opportunities, reacquaint with colleagues, meet new friends and broaden their knowledge. The conference will held in the 18th century "Villa Vittoria" (Palazzo dei Congressi), located inside the Florence Congress Center.

All the IEEE-IEVC conference structure is designed to address the following:
1) Communication of industry, academic and governmental leaders about major technology trends, game-changing research results and important policy developments in key markets
2) Dialogue between industry and academic experts about research findings and their impact on industrial applications as well as industry problems that require more research activities
3) Experience of technology advancements at vehicle, component and infrastructure level via exhibition and live demonstrations.

Main topics of the 2014 edition are:
- EV standards, policy, education, market, supply chain and manufacturing;
- EV system architecture concepts and components;
- Wireless charging, conductive charging and superfast charging;
- EV energy storage technologies;
- EV mobility, ecodriving, fuel cell vehicles, hybrids, plug-ins, energy production;
- EV power electronics and motor drives;
- EV systems modeling, simulation and testing;
- Power grid opportunities and EV infrastructure support;
- EV communications, in-vehicle network, connected vehicles, autonomous vehicles, platooning.

Keynote and technical sessions will be integrated with Dialogue and Workshop sessions, chaired by companies and academia representatives. Also, an Exhibition and a ShowDrive will provide an unique opportunity for live demonstrations and practical experiences.

Therefore, I wish you a superb conference experience and a memorable stay in Florence. *Benvenuti a Firenze!*

Giuseppe Tomasso
General Chair of IEEE-IEVC2014
University of Cassino and South Lazio - Italy

December 17, 2014

Time	
8:00 AM 8:30 AM	
8:30 AM 10:30 AM	**Opening Session** G. Tomasso (IEVC General Chair) J. Taiber (IEVC Co-Chair) C. Attaianese (President of ANAE) J. Hopkins (ITIC Executive Director) L. Stogner (Chair of IEEE TEI)
10:30 AM 11:00 AM	**Passi Perduti @ Palazzo Congressi** Coffee break
11:00 AM 1:00 PM	**Keynote Session K1.1** chairman: Peter Friese (AUTO21 NCE) Tom Cato Karlsen (State Secretary-Ministry of Transport & Communications Norway) B. Witkamp (Secretary General AVERE) C.C. Chan (University of Hong Kong)
1:00 PM 2:30 PM	**First Floor @ Palazzo degli Affari** Lunch
2:30 PM 4:30 PM	**Keynote Session K1.2** chairman: Joachim Taiber (Clemson University) Peter Van Manen (McLaren) Grzegorz Ombach (Qualcomm) Julian Weber (BMW) Gernot Spiegelberg (Siemens)
4:30 PM 5:00 PM	**Passi Perduti @ Palazzo dei Congressi** Coffee break
5:00 PM 6:30 PM	**Keynote Session K1.3** chairman: Chris Mi (University of Michigan - Dearborn) Markus Seidel (BMW Motorrad) Jae Seung Lee (Toyota) Isbrand Ho (BYD)
6:30 PM 7:15 PM	**VIP tour @ IEVC Exhibition and CarShow areas**
8:00 PM 10:30PM	**Basilica @ Fortezza da Basso** BANQUET

Registration - Registration desk @ Palazzo degli Affari
Indoor Exhibition - Passi Perduti @ Palazzo dei Congressi Outdoor Exhibition - Limonaia @ Palazzo dei Congressi
Auditorium @ Palazzo dei Congressi

December 18, 2014

Time	
8:00 AM 8:30 AM	
8:30 AM 10:30 AM	**Keynote Session K2.1** chairman: Chris Mi (University of Michigan) Kal Gyimesi (IBM Software Group) Ashok Moghe (Cisco) Jose Fernandez Garcia (European Commission) U. Gustafsson (Volvo)
10:30 AM 11:00 AM	**Passi Perduti @ Palazzo dei Congressi** Coffee break

	Auditorium	Sala Verde
11:00 AM 1:30 PM	**Workshop W2.1 Clean Cities**	**Workshop W2.2 Wireless Charging: Related Standards and needs**

1:30 PM 2:30 PM	**First Floor @ Palazzo degli Affari** Lunch

Technical Oral Sessions

	Auditorium	Sala Verde	Sala Onice	Sala 4	Sala 9
2:30 PM 4:30 PM	TS 2.1	TS 2.2	TS 2.3	TS 2.4	TS 2.5

4:30 PM 5:30 PM	**Keynote Session K2.2** chairman: Peter Friese (AUTO21 NCE) Giorgio Rizzoni (Ohio State University)

Panel and Dialogue Sessions

	PD 2.1	PD 2.2	PD 2.3
5:30 PM 6:30 PM			

Registration - Registration desk @ Palazzo degli Affari
Indoor Exhibition - Passi Perduti @ Palazzo dei Congressi Outdoor Exhibition - Limonaia @ Palazzo dei Congressi
Coffee tables @ Passi Perduti

December 18, 2014

Auditorium @ Palazzo dei Congressi	

Sala Onice

Workshop W2.3 Energy storage Technologies for Electrified Vehicles

Conference Rooms @ Palazzo dei Congressi

Sala 202	Sala 203
TS 2.6	TS 2.7

Conference Rooms @ Palazzo dei Congressi

Auditorium @ Palazzo Congressi

Ballatoi @ Palazzo Congressi

PD 2.4

December 19, 2014

Time	
8:30 AM 10:30 AM	
10:30 AM 11:00 AM	
11:00 AM 1:30 PM	
1:30 PM 2:30 PM	
2:30 PM 5:00 PM	
5:00 PM 5:30 PM	
5:30 PM 6:30 PM	

Registration - Registration desk @ Palazzo degli Affari

Indoor Exhibition - Passi Perduti @ Palazzo dei Congressi

Outdoor Exhibition - Limonaia @ Palazzo dei Congressi CAR-SHOW OPEN DAY and TEST DRIVE

Coffee tables @ Passi Perduti

Coffee tables @ Passi Perduti

Keynote Session K3.1
chairman: Giorgio Rizzoni (Ohio State University)

Klaus Schaaf (Wolfsburg AG)
Björn Pfeifer (Schaeffler)
Jost Bernasch (Virtual Vehicle, Austria)
Giovanni Gaviani (Magneti Marelli)

Open Day and test drive presentation

Workshop sessions		*Technical Oral Sessions*			
Auditorium	Sala Verde	Sala 9	Sala 4	Sala Onice	Sala 202
W3.1: Europe meets IEVC	W3.2: EV's components and infrastrucutres standardization	TS 3.1	TS 3.2	TS 3.3	TS 3.4

First Floor @ Palazzo degli Affari Lunch

Technical Oral Sessions

Auditorium	Sala Onice	Sala Verde	Sala 4	Sala 9	Sala 202	Sala 203
TS 3.5	TS 3.6	TS 3.7	TS 3.8	TS 3.9	TS 3.10	TS 3.11

Panel and Dialogue Sessions

PD 3.1	PD 3.2	PD 3.3	PD 3.4

Auditorium @ Palazzo dei Congressi

Conference Rooms @ Palazzo dei Congressi

Conference Rooms - Palazzo dei Congressi

Ballatoi @ Palazzo Congressi
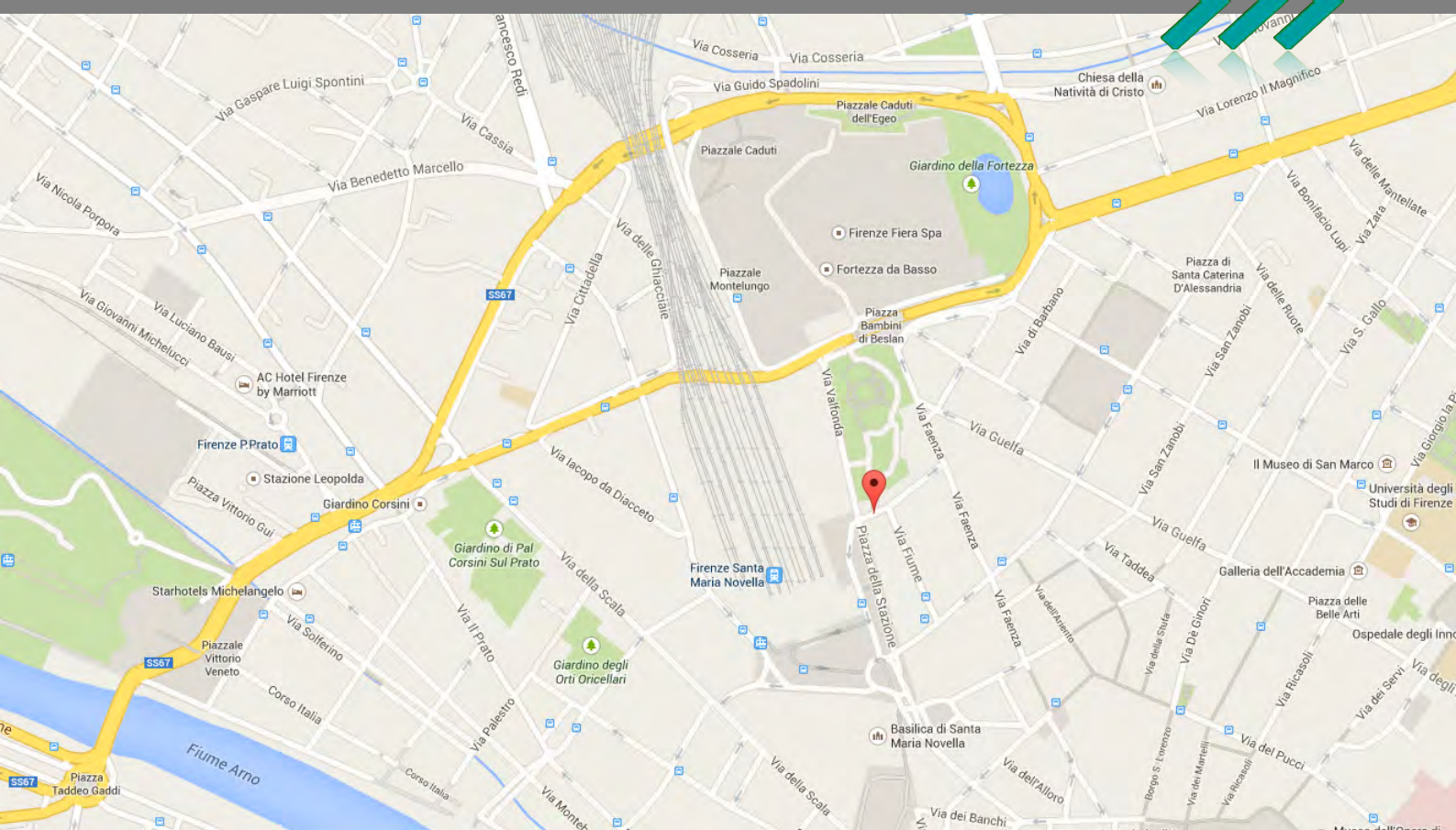
Fortezza da Basso: Basilica (Dec.17)
Banquet

Palazzo dei Congressi (Dec.16-17-18-19)
Opening. keynote, technical, poster sessions, workshops, tutorials, exhibition, coffee area

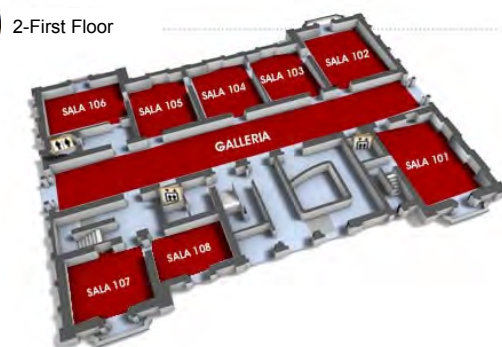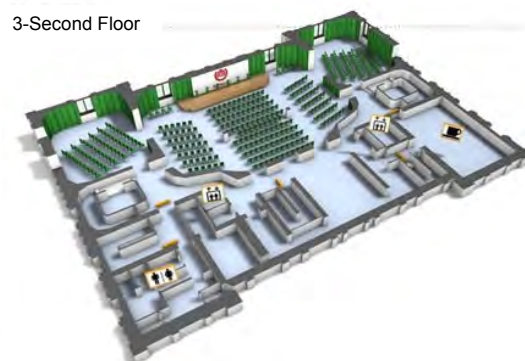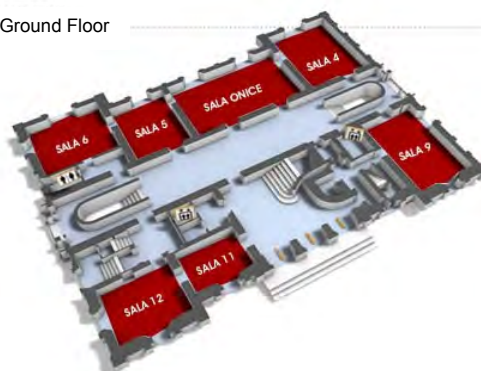**Palazzo degli Affari (Dec.17-18-19)**
Lunch

3-Second Floor

AUDITORIUM (indoor)
PASSI PERDUTI (indoor)
ANFITEATRO (outdoor)

VILLA VITTORIA

2-First Floor

SALA 106
SALA 105
SALA 104
SALA 103
SALA 102
GALLERIA
SALA 101
SALA 108
SALA 107

1-Ground Floor

SALA 4
SALA ONICE
SALA 6
SALA 5
SALA 9
SALA 11
SALA 12

LIMONAIA

1 - **VILLA VITTORIA** PIANO TERRA - *GROUND FLOOR*
2 - **VILLA VITTORIA** PIANO PRIMO - *FIRST FLOOR*
3 - **VILLA VITTORIA** PIANO SECONDO - *SECOND FLOOR*
4 - **VILLA VITTORIA** BELVEDERE
5 - **ANFITEATRO** - *AMPHITHEATRE*
6 - **AUDITORIUM**
7 - **PASSI PERDUTI**
8 - **LIMONAIA**

6-Auditorium

SALA CLUB

7-Passi perduti
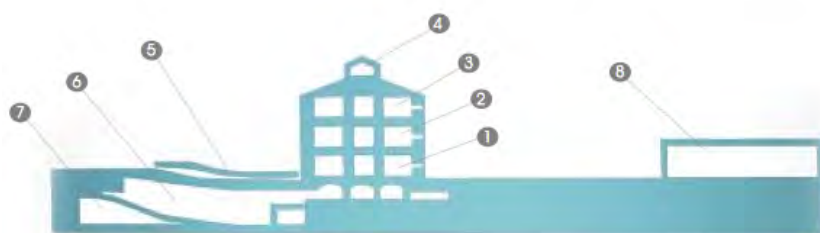
Tutorials

Room 9 @ Palazzo dei Congressi

1:00 p.m. 3:30 p.m.	**TUTORIAL 1.A** Fuel Cell Technology for Automotive applications **Fei Gao**, *University of Technology of Belfort-Montbéliard*
4:00 p.m. 6:30 p.m.	**TUTORIAL 1.B** Wireless Power Transfer Technology for Electric Vehicle Applications **Chris Mi**, *University of Michigan*

TUTORIAL 1.A_*time 1:00 p.m. - 3:30 p.m.*
Fuel Cell Technology for Automotive applications

Fei Gao, University of Technology of Belfort-Montbéliard

Associate Professor-University of Technology of Belfort-Montbéliard, Head of Energy Production Division-Energy and Environment Department, University of Technology of Belfort-Montbéliard, Secretary of Technical Committee on Automotive Technology (TCAT) IEEE Industrial Electronics Society (IEEE-IES), Associate Editor-IEEE Transactions on Transportation Electrification, Editor-IEEE Transportation Electrification Newsletter, Chairman of "Fuel cell modeling and Experimentation axis"- French FC LAB Research Federation (FR CNRS 3539), Research-Fuel cells applications in transportation including multi-physics modeling and real time applications

CONTENTS

The fuel cell is a potential candidate for energy storage and conversion in our future energy mix. Indeed, a fuel cell is able to directly convert the chemical energy stored in fuel (e.g. hydrogen) into electricity, without undergoing different intermediary conversion steps. Among the different fuel cell types, the proton exchange membrane (PEM) fuel cell has shown great potential in automotive applications, due to its low operating temperature, solid-state electrolyte, and compactness. Many experts consider the PEM fuel cells to be one of the potential embarked energy candidates for terrestrial transportation.

This eLearning course will mainly focus on the proton exchange membrane (PEM) fuel cell technology which has been used specially in automotive applications. The PEM fuel cell fundamentals, such as its physics, structure, power characteristics, efficiency, will be presented and discussed. The fuel cell system with its key ancillary components, such as air compressor, hydrogen tank, power converter, will also be introduced. Different powertrain configurations with fuel cells in automotive applications will be discussed and shown with real examples around the world. An emphasis on the fuel cell economic aspects and a short introduction to hydrogen economy will be given at last.

TUTORIAL 1.B_*time 4:00 p.m. - 6:30 p.m.*
Wireless Power Transfer Technology for Electric Vehicle Applications

Chris Mi, University of Michigan – Dearborn

Professor-University of Michigan, Dearborn, Director- US DOE funded GATE Center for Electric Drive Transportation, Fellow of IEEE & Distinguished Lecturer (DL)- IEEE Vehicular Technology Society, General Co-Chair- IEEE Workshop on Wireless Power Transfer, Technical Chair- IEEE International Electrical Vehicle Conference 2014, Florence Italy, Editor-IEEE Journal of Emerging and Selected Topics in Power Electronics – Special Issue on WPT, Research-EV and HEV 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

CONTENTS

Electric vehicles and plug-in hybrid electric vehicles (PEVs) have attracted worldwide attentions because their capabilities to displace petroleum usage and improve energy and environment sustainability. One of the key constraints for the mass market penetration of PEVs is the inconvenience and safety concerns associated with charging. Wireless charging using Wireless Power Transfer (WPT) Technology, as an alternative to conductive charging or battery-swapping, can provide the convenience and safety requirements. Recently, EV battery wireless chargers have been realized at large power levels (>50kW) with reasonable sizes, distance in excess of 200 mm, DC-to-battery efficiency of 96.5%, and a misalignment of up to 600 mm, using magnetic-resonance technology. This breakthrough will have strong impact on PEVs and a variety of other applications, including consumer electronics, home appliances, medical implant devices, and some industry applications. This tutorial focuses on the key technical challenges of WPT, including coil design, system analysis using analytical methods, simulations of the WTP system; resonant topologies suitable for various applications, and power electronics topologies associated with WPT.

Opening&Keynote Sessions

8:30 a.m. 10:30 a.m.	Auditorium @ Palazzo dei Congressi **Opening Session** • **G. Tomasso** (IEVC General Chair) • **J. Taiber** (IEVC Co-Chair) • **C. Attaianese** (President of ANAE) • **J. Hopkins** (ITIC Executive Director) • **L. Stogner** (Chair of IEEE TEI)
10:30 a.m. 11:00 a.m.	Passi Perduti @ Palazzo dei Congressi **Coffee break**
11:00 a.m. 1:00 p.m.	Auditorium @ Palazzo dei Congressi **Keynote Session K1.1** *chairman: Peter Friese (AUTO21 NCE)* • **T. Cato Karlsen** (State Secretary-Ministry of Transport & Communications Norway) • **B. Witkamp** (Secretary General AVERE) • **C.C. Chan** (University of Hong Kong)
1:00 p.m. 2:30 p.m.	First floor @ Palazzo degli Affari **Lunch**
2:30 p.m. 4:30 p.m.	Auditorium @ Palazzo dei Congressi **Keynote Session K1.2** *chairman: Joachim Taiber (Clemson University)* • **P. Van Manen** (McLaren) • **G. Ombach** (Qualcomm) • **J. Weber** (BMW) • **G. Spiegelberg** (Siemens)
4:30 p.m. 5:00 p.m.	Passi Perduti @ Palazzo dei Congressi **Coffee break**
5:00 p.m. 6:30 p.m.	Auditorium @ Palazzo dei Congressi **Keynote Session K1.3** *chairman: Chris Mi (University of Michigan)* • **M. Seidel** (BMW Motorrad) • **J. S. Lee** (Toyota) • **I. Ho** (BYD)
6:30 p.m. 7:15 p.m.	Passi Perduti @ Palazzo dei Congressi **VIP tour @ IEVC Exhibition and CarShow areas**
8:00 p.m. 10:30 p.m.	Basilica @ Fortezza da Basso **BANQUET**

Tom Cato Karlsen *(Norway Ministry of Transport and Communications-State Secretary)*

The Norwegian approach to electro-mobility

Bert Witkamp *(Secretary General AVERE)*

Why (nearly) all road transport in 2050 will be electric drive

C.C. Chan *(FREng, FIEEE, FIET, FHKIE, University of Hong Kong)*

Renaissance and Global Outlook of Electric Vehicle Development

Peter van Manen *(Vice President, McLaren Applied Technologies)*

Electrification of the powertrain of high performance vehicles: lessons learnt and outlook

Grzegorz Ombach *(Vice President of Engineering, Qualcomm)*

Wireless charging for EV and PHEV current status and path towards interoperability

Julian Weber *(Head of Innovation Projects E-Mobility, BMW Group)*

E-Mobility – It takes more than cars …

Gernot Spiegelberg *(Vice President Corporate Technology, Siemens AG)*

Opportunities in eMobility with new technical and Business approach

Marcus Seidel *(Head of Project Electric Mobility BMW Motorrad)*

Reinventing Urban (e)Mobility: How BMW Motorrad will Disrupt an Industry

Jae Seung Lee *(Research Institute of North America Manager, Toyota)*

Vehicle electrification and intelligence

Isbrand Ho *(Senior Director of BYD Company Limited)*

Electrified Public Transport- Future is Now

Keynotes, Technical, Poster/Dialogue Sessions, Workshops

8:30 a.m. 10:30 a.m.	Auditorium @ Palazzo dei Congressi **Keynote Session K2.1** *chairman: Chris Mi (University of Michigan)* • **K. Gyimesi** (IBM Software Group) • **A. Moghe** (Cisco) • **J. F. Garcia** (European Commission) • **U. Gustafsson** (Volvo)
10:30 a.m. 11:00 a.m.	Passi Perduti @ Palazzo dei Congressi **Coffee break**

WORKSHOP SESSIONS Palazzo dei Congressi

11:00 a.m. 1:30 p.m.	**Workshop W2.1 - Clean Cities**	**Workshop W2.2 -** **Wireless Charging: Related Standards and needs**	**Workshop W2.3 - Energy storage technologies for electrified vehicles**

1:30 p.m. 2:30 p.m.	First Floor @ Palazzo degli Affari **Lunch**

TECHNICAL ORAL SESSIONS Palazzo dei Congressi

2:30 p.m. 4:30 p.m.	**TS 2.1** Power grid opportunities and EV infrastructure support	**TS 2.2** **SS** - High power, low cost electrical drivetrain	**TS 2.3** **SS**: Present and future high power energy storage technologies for electric and hybrid vehicle: supercapacitors and batteries	**TS 2.4** Wireless charging, conductive charging and superfast charging	**TS 2.5** EV standards, policy, education, market, supply chain and manufacturing	**TS 2.6** EV systems modeling, simulation and testing	**TS 2.7** **SS** - Driver information systems enhanced with connected vehicle technologies

4:30 p.m. 5:30 p.m.	Auditorium @ Palazzo dei Congressi **Keynote Session K2.2:** *chairman: Peter Friese (AUTO21 NCE)* • **G. Rizzoni** (Ohio State University)

PANEL AND DIALOGUE SESSIONS - Ballatoio @ Palazzo dei Congressi

5:30 p.m. 6:30 p.m.	**PD 2.1** EV system architecture concepts and components	**PD 2.2** EV systems modeling, simulation and testing	**PD 2.3** EV mobility, ecodriving, fuel cell vehicles, hybrids, plug-ins, energy production	**PD 2.4** EV standards, policy, education, market, supply chain and manufacturing			

Kalman Gyimesi *(IBM Software Group lead worldwide strategy and development of Industrial solutions)*

Automotive 2015: an industry in Transition

Ashok Moghe *(Chief Technology and Architecture Office at CISCO Systems)*

Network infrastructure and connectivity aspects associated with the electrical charging

Jose Fernandez Garcia *(Policy Officer at European Commission - DG Mobility and Transport)*

Clean Power for Transport: the Directive on the Deployment of Alternative Fuels Infrastructures

Ulf Gustafsson *(Senior Manager Public Affairs, Volvo Buses)*

Listen to your city

Giorgio Rizzoni *(Professor, Ohio State University)*

Buckeye Bullet: the Story of Three Land Speed Record Electric Cars

Keynotes, Technical, Poster/Dialogue Sessions, Workshops

8:30 a.m. 10:30 a.m.	Auditorium @ Palazzo dei Congressi **Keynote Session K3.1** *Chairman: Giorgio Rizzoni (Ohio State University)* • **K. Schaaf** (Wolfsburg AG) • **B. Pfeifer** (Schaeffler) • **J. Bernasch** (Virtual Vehicle, Austria) • **G. Gaviani** (Magneti Marelli)
10:30 a.m. 11:00 a.m.	Auditorium @ Palazzo dei Congressi **Open Day and Test drive presentation**

11:00 a.m. – 1:30 p.m.

WORKSHOP SESSIONS Palazzo dei Congressi | **TECHNICAL ORAL SESSIONS** Palazzo dei Congressi

Workshop W3.1 - EV's components and infrastructures Standardization	**Workshop W3.1 - Europe meets IEVC**	**TS 3.1** EV mobility, ecodriving, fuel cell vehicles, hybrids, plug-ins, energy production	**TS 3.2** EV communications, in-vehicle network, connected vehicles, autonomous vehicles, platooning	**TS 3.3** EV power electronics and motor drives	**TS 3.4** **SS**: Advances in wireless charging of electric vehicles

1:30 p.m. 2:30 p.m.	First Floor @ Palazzo degli Affari **Lunch**

2:30 p.m. – 5:00 p.m.

TECHNICAL ORAL SESSIONS Palazzo dei Congressi

TS 3.5 **SS:** Integration of Electric Vehicles into Smart Grids	**TS 3.6** **SS**: Technologies for advanced management of battery and supercap energy storage systems in EV's	**TS 3.7** **SS**: Towards wireless dynamic charging; Challenges and Prospects	**TS 3.8** **SS**: Simulation, management and performance analysis in hybrid and electric vehicles	**TS 3.9** **SS**: Electric Vehicles Charging Infrastructures and Grid Integration	**TS 3.10** **SS**: Energy efficiency optimization and robust control of PMSM drives used in EV's	**TS 3.11** **SS**: Unconventional electrical machines for electric vehicles

5:00 p.m. 5:30 p.m.	Passi Perduti @ Palazzo dei Congressi **Coffee break**

PANEL AND DIALOGUE SESSIONS - Ballatoio @ Palazzo dei Congressi

	PD 3.1 Power grid opportunities and EV infrastructure support	**PD 3.2** EV power electronics and motor drives	**PD 3.3** Wireless charging, conductive charging and superfast charging	**PD 3.4** **SS:** Voltage control of multivconverter DC microgrids for EV: definitions, design, modeling and stability
5:30 p.m. 6:30 p.m.				

	Klaus Schaaf *(Project Leader Wireless Wolfsburg, Volkswagen AG and Wolfsburg AG)*
	EV Charging Infrastructures: Wolfsburg experience
	Björn Pfeifer *(Business Development eMobility Systems Division at Schaeffler)*
	From technology push to market pull – eMobility beyond 2020
	Jost Bernasch *(Managing Director at Virtual Vehicle)*
	Future of Highly and Fully Automated Electric Vehicles - Energy Management and Bottlenecks
	Giovanni Gaviani *(Business Development head of the Powertrain division at Magneti Marelli)*
	Prospective for Hybrid Power Module on Mass Production Passenger Cars

>> 2:30 p.m. - 4:30 p.m. _**Auditorium**_

TS 2.1: Power grid opportunities and EV infrastructure support

Chairmen:
- Giorgio Sulligoi (University of Trieste, IT)
- Volker Fricke (IBM)

TS2.1-1: Assessing the Generation Capacity, Energy, and GHG Emission Reduction Value of Public Electric Vehicle Recharging Infrastructure in the Australian National Electricity Market

Graham Mills, Iain MacGill (University of New South Wales, Australia)

TS2.1-2: Concurrent Provision of Frequency Regulation and Overvoltage Support by Electric Vehicles in a Real Danish Low Voltage Network

Katarina Knezović, Mattia Marinelli, Peter Andersen, Chresten Træholt (Technical University Of Denmark, Denmark)

TS2.1-3: On-line Scheduling Policies for Electric Vehicle Charging Over Public Lighting Systems

Mario A Alvarado-Ruiz, Fadi Abi Abdallah, Maurice Gagnaire (Telecom ParisTech, France)

TS2.1-4: Investigation of the potential for electric vehicles to support the domestic peak load

Yue Wang, Sikai Huang, David Infield (University of Strathclyde, United Kingdom)

TS2.1-5: Forecast of the aggregated charging power of electric vehicles in commercial fleets

Ansgar Ottensmann, Jens Haubrock (Bielefeld University of Applied Sciences, Germany)
Dirk Westermann (Ilmenau University of Technology, Germany)

TS2.1-6: Finding Suitable Locations for Charging Stations - Implementation of Customers' Preferences in an Allocation Problem

Matthias Eisel, Johannes Schmidt, Lutz Kolbe (University of Göttingen, Germany)

>> 2:30 p.m. - 4:30 p.m. _**Sala Verde**_

TS 2.2: <u>Special Session</u> on High power, low cost electrical drivetrain

Chairman:
- Dieter Gerling (University of Federal Defence in Munich, Germany)

TS2.2-1: Low Costs and High Efficiency Asynchronous Machine with Stator Cage Winding

Gurakuq Dajaku (FEAAM GmbH, Germany);
Dieter Gerling (University of Federal Defence Munich, Germany)

TS2.2-2: Design of a Multi-Phase Inverter for Low Voltage High Power Electric Vehicles

Adrian Patzak, Dieter Gerling (University of Federal Defense Munich, Germany)

TS2.2-3: High-Current, Low-Voltage Power Net

Florian Bachheibl, Dieter Gerling (University of Federal Defense Munich, Germany)

TS2.2-4: A concept of a high-energy, low-voltage EV battery pack

Matthias Kerler, Michael Baumann, Peter Burda, Markus Lienkamp (Technische Universität München, Germany)

TS2.2-5: An Applicability Study of LV Battery On-Board Chargers for High Power EVs

Dieter Gerling (University of Federal Defence Munich, Germany);
Sandra Zeljkovic, Radovan Vuletic (Infineon Technologies AG, Germany)

>> 2:30 p.m. - 4:30 p.m. _Sala Onice_

TS 2.3: Special Session on Present and future high power energy storage technologies for electric and hybrid vehicles: supercapacitors and batteries

Chairman:
• Andrew F. Burke (University of California-Davis, USA)

TS2.3-1: Present and Future Applications of Supercapacitors in Electric and Hybrid Vehicles

Andrew Burke, Zhengmao Liu and Hengbing Zhao (University of California-Davis, USA)

TS2.3-2: A Design of DC Bus Control System for EVs Based on Battery/Ultracapacitor Hybrid Energy Storage

Danijel Pavkovic, Mihael Lobrovic, Mario Hrgetic, Ante Komljenovic (University of Zagreb, Croatia)

TS2.3-3: UltraBattery: The most advanced lead acid battery

Subhas Chalasani (East Penn Manufacturing, USA)

TS2.3-4: Ultracapacitor Technology: what it can offer to electrified vehicles

Y. Maletin, N. Stryzhakova, S. Zelinskyi, S. Chernukhin, D. Tretyakov, H. A. Mosqueda, N. Davydenko, D. Drobnyi (YUNASKO, Ukraine)

TS2.3-5: Truck and Utility Applications of Large Format Li-ion Batteries

Paul B. Scott, James Burns, Frank Falcone, Ameya Jathar (Transportation Power, USA)

TS2.3-6: Advanced Hybrid Capacitor with Lithium Titanium Oxide for Automobile

Shuichi Ishimoto, Kenji Tamamitsu, Satoru Tsumeda, Shotaro Kon and Kentaro Nakaaki (Nippon Chemi-Con Corporation, Japan)

>> 2:30 p.m. - 4:30 p.m. _Sala 4_

TS 2.4: Wireless charging, conductive charging and superfast charging

Chairmen:
• Siqi Li (Kunming University of Science and Technology, China)
• Jeff Muhs (Witricity Corporation)

TS2.4-1: Proposal of a power source definition to provide interoperable use of wireless power transfer systems

Olaf Simon, Thomas Krempel (SEW- Eurodrive, Germany); Faical Turki (Vahle GmbH, Germany); Wolfgang Schnurbusch (IPT Technology GmbH, Germany); Axel Hoppe (Institut für Automation und Kommunikation e. V. Magdeburg, Germany)

TS2.4-2: Development of a High Efficiency Primary Side Controlled 7kW Wireless Power Charger

Siqi Li (Kunming University of Science and Technology, China); Junjun Deng (University of Michigan – Dearborn, USA; Northwestern Polytechnical University, China); Fei Lu, Chris Mi (University of Michigan - Dearborn, USA); Trong Duy Nguyen (DENSO International America, USA)

TS2.4-3: Design of a high efficiency 22 kW wireless power transfer system for EVs fast contactless charging stations

Alessandro Pevere, Roberto Petrella (University of Udine, Italy); Shijie Zhou, Chris Mi (University of Michigan, USA)

TS2.4-4: Power tracking with maximum efficiency for Wireless Charging of E-bikes

Filippo Pellitteri, Valeria Boscaino, Rosario Miceli (University of Palermo, Italy); Udaya Madawala (University of Auckland, New Zealand)

TS2.4-5: Edge Position Detection of on-line Vehicles with Segmental Wireless Power Supply

Mariusz Bojarski, Dariusz Czarkowski, Zhengyan Chu, Francisco de Leon (New York University, USA); Qijun Deng (Wuhan University, China); Jiangtao Liu (Hubei University of Education, China)

TS2.4-6: Recent advances in wireless power transfer systems with metallic and living object detection capabilities

Jeff Muhs (WiTricity Corporation)

>> 2:30 p.m. - 4:30 p.m. _Sala 9_

TS 2.5: EV standards, policy, education, market, supply chain and manufacturing

Chairmen:
- Peter Friese (University of Windsor, Canada)
- Kal Gyimesi (IBM Software Group)

TS2.5-1: How to Green Electric Vehicles: Analysis of key factors for Reducing Climate Impacts of Electric Vehicles
Julius Jöhrens, Hinrich Helms (Institute for Energy and Environmental Research, Germany)

TS2.5-2: The role of carbon standards on passenger cars towards the reduction of GHG emissions in EU: A model-based scenario analysis
Pelopidas Siskos, Alessia De Vita, Pantelis Capros (National Technical University of Athens, Greece)

TS2.5-3: An Automated Approch for Disassembly and Recycling of Electric Vehicle Components
Jie Li, Michael Barwood, Shahin Rahimifard (Loughborough University, United Kingdom)

TS2.5-4: Integrating the electric grid and the commuter network through a ``Veichle to Grid'' concept: a Complex Networks Theory approach
Alfonso Damiano (University of Cagliari, Italy);
Alessandro Chessa, Guido Caldarelli (Institute for Advanced Studies Lucca, Italy);
Antonio Scala (Italian National Research Council, Italy)

TS2.5-5: Development of an Electric Vehicle as a Framework for interdisciplinary Problem based Learning Curriculums
Alexander Kuznietsov, Sergej Kovalev (University of Applied Sciences Mittelhessen, Germany)

TS2.5-6: Entrepreneurship for Urban Mobility Systems
David Bodde, Joachim Taiber (Clemson University, USA)

>> 2:30 p.m. - 4:30 p.m. _Sala 202_

TS 2.6: EV systems modeling, simulation and testing

Chairman:
- Zareh Soghomonian (Huntington Ingalls Industries, USA)

TS2.6-1: Impedance spectroscopy characterisation of automotive NMC/graphite Li-ion cells aged with realistic PHEV load profile
Jens Groot (Volvo Group Trucks Technology, Chalmers University of Technology, Sweden);
Ylva Olofsson (Volvo Group Trucks Technology, Sweden);
Gregor Tavčar, Tomaž Katrašnik (University of Ljubljana, Slovenia)

TS2.6-2: Energetically Optimal Path Following for Electric Aircraft Taxi Systems Based on Convex Optimization
Fabrizio Re, Ricardo de Castro (DLR German Aerospace Center, Germany)

TS2.6-3: Fully Electric City Buses - The Viable Option
Mikko Pihlatie, Samu Kukkonen, Teemu Halmeaho, Veikko Karvonen, Nils-Olof Nylund (VTT Technical Research Centre of Finland, Finland)

TS2.6-4: Real-Time Power Management Strategy in Power-Split Hybrid Electric Vehicle
Giambattista Gruosso, Fernando Ramacciotti (Politecnico di Milano, Italy)

TS2.6-5: Concept Design and Performances Assessment of a Series Hybrid Powertrain for Small and Medium Class Road Vehicles
Michele Pennese (Mecaprom, Italy)

TS2.6-6: Design and Optimization of a Drivetrain with Two-speed Transmission for Electric Delivery Step Van
Alexei Morozov, Kieran Humphries, Ting Zou, Sudarshan Martins, Jorge Angeles (McGill University, Canada)

>> 2:30 p.m. - 4:30 p.m. _Sala 202_

TS 2.7: Special Session on Driver information systems enhanced with connected vehicle technologies

Chairman:
• Andreas Malikopoulos (Oak Ridge National Laboratory, USA)

TS2.7-1: Coupling Electric Vehicles and Power Grid through Charging-In-Motion and Connected Vehicle Technology

Jan-Mou Li, Omer Onar, Michael Starke and Perry Jones (Oak Ridge National Laboratory, USA)

TS2.7-2: Crowd Sourced Energy Estimation in Connected Vehicles

Adithya Jayakumar, Giorgio Rizzoni (The Ohio State University, USA);
Fabio Ingrosso (University of Salento, The Ohio State University, Italy);
Jason Meyer, Jeffrey Doering (Ford Motor Company, USA)

TS2.7-3: Reliability Enhanced EV Using Pattern Recognition Techniques

Mohammad Samie, Alireza Alghassi, Suresh Perinpanayagam (Cranfield University, United Kingdom);
Amir Motlagh, Epaminondas Kapetanios (University of Westminster, United Kingdom)

TS2.7-4: Optimal Routing of Electric Vehicles in Networks with Charging Nodes: A Dynamic Programming Approach

Andreas Malikopoulos (Oak Ridge National Laboratory, USA);
Sepideh Pourazarm, Christos Cassandras (Boston University, USA)

>> 5:30 p.m. - 6:30 p.m. _Ballatoio_

PD 2.1 EV system architecture concepts and components

PD 2.2 EV systems modeling, simulation and testing

Chairmen:
- Zareh Soghomonian (Huntington Ingalls Industries, USA)
- Jens Groot (Volvo Group Trucks Technology, Sweden)

PD2.1-1: Active role of a NFC enabled smartphone in EV-EVSE charging process

Giuseppe De Maso-Gentile, Gianluca Ritrovati, Cristiano Scavongelli, Massimo Conti (Università Politecnica delle Marche, Italy)

PD2.1-2: Component-Based Modeling and Integration of Automotive Application Architectures

Konstantin Schorp, Stephan Sommer (Fortiss GmbH, Germany)

PD2.1-3: Electronic Differential Design for a Vehicle with Four Independently Controlled In-wheel Motors

Amin Hajihosseinlu, Shaahin Filizadeh, Garry Bistyak, Erwin Dirks (University of Manitoba, Canada)

PD2.1-4: Radio Frequency Communications for Smart Cells in Battery Pack for Electric Vehicle

Sylvain Bacquet, Mickael Maman (CEA, France)

PD2.1-5: Observer-Based Fault Diagnosis of Li-ion Battery

Pierluigi Pisu, Zoleikha Abdollahi Biron (Clemson University, USA)

PD2.2-1: Modelling Social Patterns of Plug-in Electric Vehicles Drivers for Dynamic Simulations

Javier Garcia-Villalobos, Inmaculada Zamora, Jose Ignacio San Martin, Francisco Asensio, Pablo Eguia (University of the Basque Country, Spain)

PD2.2-2: A Test Bench for Hybrid Propulsion Train Research and Development

Davide Da Rù, Mattia Morandin, Silverio Bolognani, Mose' Castiello (University of Padova, Italy)

PD2.2-3: Fault-tolerant Control based on Sliding Mode for Overactuated Electric Vehicles

António Lopes, Rui Esteves Araújo (University of Porto, Portugal)

PD2.2-4: Modelling and Estimation of Friction Brake Torque for a Brake by Wire System

Efstathios Velenis, Clara Marina Martinez, Davide Tavernini (Cranfield University, United Kingdom);
Bo Gao, Matthias Wellers (AVL Powertrain, United Kingdom)

PD2.2-5: Smart Vehicle to Grid Interface Project: Electromobility Management System Architecture and Field Test Results

Andrea Lanna, Letterio Zuccaro, Alessandro Di Giorgio, Francesco Liberati, Silvia Canale (Sapienza University of Rome, Italy);
Victor Fernandez Pallares, Alejandro Martínez Blanco, Raúl Urbano Escobar (CIT, Spain);
Jure Ratej, Borut Mehle (ETREL, Slovenia);
Uršula Krisper (Elektro Ljubljana, Italy)

PD2.2-6: Estimation of Confidence Regions and Severity of Undefined Faults in Driving using Synthetic Disturbance Signals

Mustafa Kaya, Oguz Yakut, Haluk Eren, Mehmet Polat, Hasan Kurum (Firat University, Turkey);
Eyyup Oksuztepe Zeki Omac (Tunceli University, Turkey);
Mehmet Celenk (Ohio University, USA)

PD2.2-7: Optimal Design of a Three-Phase AFPM for In-Wheel Electrical Traction

Harold Saavedra, Jordi-Roger Riba, Luis Romeral (Universitat Politècnica de Catalunya, Spain)

PD2.2-8: Wheel Slip Reset Controller in Automotive Brake Systems

Emma Delgado, Antonio Barreiro, Miguel Díaz-Cacho, Pablo Falcón (University of Vigo, Spain)

PD2.2-9: Testing and monitoring for FC buses fleets in the EU project HighVLO City

Gabriele Priano, Cristina Carnevali, Maurizio Mazzucchelli, Riccardo Genova (University of Genova, Italy)

PD2.2-10: Charging/discharging process for electric vehicles: proposal and emulation

Daniel Heredero-Peris, Miquel Barnola-Sampera, Roberto Villafafila-Robles, Daniel Montesinos-Miracle (Centre d'Innovació Tecnològica en Convertidors Estàtics i Accionaments, Spain); Joan Bergas (Universitat Politècnica de Catalunya, Spain)

PD2.2-11: Power Hardware-in-the-Loop Test Bench for Tests and Verification of EV and EVSE Charging Systems

Andrey Popov, Alexander Horvath-Mohacsi, Michael Tybel, Michael Schugt (Scienlab Electronic Systems GmbH, Germany)

PD2.2-12: State-of-Charge Estimation Algorithms and their Implications on Cells in Parallel

Yashraj Tripathy, Andrew McGordon, James Marco (University of Warwick, United Kingdom); Miguel Gama-Valdez (Jaguar-Land Rover, United Kingdom)

>> 5:30 p.m. - 6:30 p.m. _**Ballatoio**_

PD 2.3 EV mobility, ecodriving, fuel cell vehicles, hybrids, plug-ins, energy production

Chairman:
- Fei Gao (Université de Technologie de Belfort-Montbéliard, France)

PD2.3-1: Evaluation of a 2-speed Transmission on Electric Vehicle's Energy Consumption

Polychronis Spanoudakis, Nikolaos Tsourveloudis, George Koumartzakis, Aleksandros Krahtoudis, Theodosis Karpouzis and Ioannis Tsinaris (Technical University of Crete, Greece)

PD2.3-2: City bus powered by hydrogen fuel cell and flywheel energy storage system

Gino D'Ovidio, Nicola Rotondale (University of L'Aquila, Italy)

PD2.3-3: Fuel Cell Power System with LLC Resonant DC/DC Converter

Carlo Cecati, Concettina Buccella, Hamed Latafat, Kaveh Razi (University of L'Aquila, Italy); Valeria Boscaino, Rosario Miceli (University of Palermo, Italy)

PD2.3-4: Fuzzy Logic Control for Energy Saving in Autonomous Electric Vehicles

Lilantha Samaranayake, Ahmed Al-Jazaeri, Stefano Longo, Daniel Auger (Cranfield University, United Kingdom)

PD2.3-5: Online Prediction of an Electric Vehicle Remaining Range based on Regression Analysis

Angelos Amditis, Anastasia Bolovinou, Ioannis Bakas (Institute of Communication and Computer SYstems, Greece); Francesco Mastrandrea, Walter Vinciotti (Privé S. r. l., Italy)

>> 5:30 p.m. - 6:30 p.m. _**Ballatoio**_

PD 2.4 EV standards, policy, education, market, supply chain and manufacturing

Chairman:
• Alfonso Damiano (University of Cagliari, Italy)

PD2.4-1: European electric vehicle fleet: driving and charging data analysis
Sara Gonzalez, Cristina Corchero, Manel Sanmarti (Catalonia Institute for Energy Research, Spain)

PD2.4-2: A Comparison of European Charging Infrastructures for Electric Vehicles Based On The Project Transport Innovation Deployment in Europe (TIDE)
Andrej Cacilo, Michael Haag (Fraunhofer IAO, Germany)

PD2.4-3: Social Acceptance of Wireless Battery Charging Systems: Belgium Case Study
Heyvaert Sylvia, Hegazy Omar, Coosemans Thierry, Van Mierlo Joeri (Vrije Universiteit Brussel, Belgium)

PD2.4-4: Unlimited Electromobility across Europe The Green eMotion Project: The Road to Ubuquitous Electromobility across Europe
Volker Fricke, Silvio Weeren (IBM, Germany); Giovanni Coppola (Enel, Italy)

>> 11:00 a.m. - 1:30 p.m. _**Sala 9**_

TS 3.1 EV mobility, ecodriving, fuel cell vehicles, hybrids, plugins, energy production

Chairmen:
- Fei Gao (Université de Technologie de Belfort-Montbéliard, France)
- Nobukazu Hoshi (Tokyo University of Science, Japan)

TS3.1-1: Dynamic Model of a Free Piston Tubular Linear Generator for Vehicle Auxiliary Power Supply

Andrea Tortella, Mauro Andriollo (University of Padova, Italy)

TS3.1-2: Charging Facility Planning for Electric Vehicles

Klara Nahrstedt, Siting Chang, Hongyang Li (University of Illinois at Urbana-Champaign, USA)

TS3.1-3: Multi-Disciplinary Decision Making and Optimization for Hybrid Electric Propulsion Systems

Andreas Malikopoulos, Sreekanth Pannala (Oak Ridge National Laboratory, USA);
Mohamed Shaltout, Dongmei Chen (University of Texas, USA)

TS3.1-4: Game Theoretic Approach for electrified auxiliary management in high voltage network of HEV/PHEV

Khoa Duc Nguyen (University of Lyon; VOLVO Group, France);
Eric Bideaux, Minh Tu Pham (University of Lyon, France);
Philippe Le Brusq (VOLVO Group, France)

TS3.1-5: Nonlinear Model Predictive Control of Battery Electric Vehicle with Slope Information

German Valenzuela Mendivil, Masakazu Mukai, Taketoshi Kawabe (Kyushu University, Japan)

TS3.1-6: Characterization of In-Use Medium Duty Electric Vehicle Driving and Charging Behavior

Adam Duran, Adam Ragatz, Kenneth Kelly, Kevin Walkowicz (National Renewable Energy Laboratory, USA)

TS3.1-7: Control Method of Multiple Power Converter to Reduce Deterioration of Fuel Cells

Hideyuki Hoshi, Yuto Aisaka, Noboru Katayama, Nobukazu Hoshi (Tokyo University of Science, Japan)

>> 11:00 a.m. - 1:30 p.m. _**Sala 4**_

TS 3.2 EV communications, in-vehicle network, connected vehicles, autonomous vehicles, platooning

Chairmen:
- James Marco (University of Warwick, UK)
- Ashok Moghe (Cisco)

TS3.2-1: Electric Vehicle Data Acquisition System

Mathias Svendsen, Mads Winther-Jensen, Anders Bro Pedersen, Peter Andersen, Thomas Sørensen (Technical University of Denmark, Denmark)

TS3.2-2: Energy Optimization of an In-wheel-motor Electric Ground Vehicle over a Given Road Terrain with Considerations of Various Traffic Elements

Junmin Wang, Chris Wiet (Ohio State University, USA)

TS3.2-3: Communication Requirements for Dynamic Wireless Power Transfer for Battery Electric Vehicles

Joachim Taiber, Andrea Gil, Pablo Sauras-Perez (Clemson University, USA)

TS3.2-4: Broadband PLC Field Trial on a Compact Electric Vehicle

Fabio Versolatto, Andrea M Tonello (University of Udine, WiTiKee Srl, Italy);
Marco De Piante (University of Udine, Italy)

TS3.2-5: Flexray Versus Ethernet For Vehicular Networks

Ben Ncira Amel, Bouhouch Rim, Jaouani Houda, Hasnaoui Salem, Jelassi Khaled (Université de Tunis El Manar, Tunisia)

TS3.2-6: Advanced co-simulation HMI Environment For Fully Electric Vehicles

Virginia Sixto, Francisco Sanchez, Pablo lopez (Centro Tecnológico de Automoción de Galicia, Spain);
Stephen Jones, Emre Kural, Alejandro Ferreira Parrilla, Franck LeRhun (AVL List GmbH, Austria)

>> 11:00 a.m. - 1:30 p.m. _**Sala Onice**_

TS 3.3 EV power electronics and motor drives

Chairman:
- Roberto Petrella (University of Udine, Italy)
- Ling Luo (Northwestern Polytechnical University, China)

TS3.3-1: Asymmetric Stator Teeth for Torque Ripple Reduction of Permanent Magnet Synchronous Machines for Hybrid Electric Vehicles

Jan Grafmüller (University of Applied Sciences Offenburg, Germany);

Julia Zhang (Oregon State University, USA)

TS3.3-2: A fault tolerant e-motor drive system for auxiliary services in hybrid electric light commercial vehicle

Emidio Della Loggia, Marco Tursini, Francesco Parasiliti, Giuseppe Fabri (University of L'Aquila, Italy)

TS3.3-3: Design of a High Voltage Bidirectional DC-DC Converter for Driving Capacitive Incremental Actuators Usable in Electric Vehicles (EVs)

Prasanth Thummala, Zhe Zhang, Michael Andersen (Technical University of Denmark, Denmark);

Dragan Maksimovic (University of Colorado at Boulder, USA);
Rahimullah Sarban (LEAP Technology, Denmark)

TS3.3-4: Design of a Permanent Magnet Linear Synchronous Motor for an Urban Transport Electric Vehicle

Monica Chinchilla, Jaime Montoya (University Carlos III de Madrid, Spain)

TS3.3-5: Design Considerations for Wide Bandgap Based Motor Drive Systems

Mark Scott, Lixing Fu, Chengcheng Yao, Xuan Zhang, Longya Xu, Jin Wang (The Ohio State University, USA);

Rachid Darbali-Zamora (University of Puerto Rico-Mayaguez, USA)

TS3.3-6: Motor Drive Control of a Full-Electric Vehicle using Generalized Predictive Control Algorithm

Aleksej Kiselev, Alexander Kuznietsov (Mittelhessen University of Applied Sciences, Germany)

TS3.3-7: A Robust Fixed-Frequency Soft Switching Series Resonant Converter for Transportation Applications

Konrad Woronowicz, Alireza Safaee (Bombardier Transportation, Canada);

Praveen Jain, and Alireza Bakhshai (Queen's University, Canada)

>> 11:00 a.m. - 1:30 p.m. _**Sala 202**_

TS 3.4 Special Session on Advances in wireless charging of electric vehicles

Chairman:
- Mariusz Bojarski (New York University, USA)

TS3.4-1: An Intelligent Solar Powered Battery Buffered EV Charging Station with Solar Electricity Forecasting and EV Charging Load Projection Functions

Andrew Burke, Hengbing Zhao (University of California-Davis, USA)

TS3.4-2: A General Approach to Tuning of A Dual Secondary Winding Transformer for Wireless Power Transfer

Konrad Woronowicz, Alireza Safaee, Tim Dickson (Bombardier Transportation, Canada)

TS3.4-3: A Wireless Power Charging Method for Automated Guided Vehicle

Jiantao Zhang, Chunbo Zhu (Harbin Institute of Technology, P.R. China);

CC Chan (University of Hongkong, Hong Kong)

TS3.4-4: Multiphase Resonant Inverters for Bidirectional Wireless Power Transfer

Mariusz Bojarski, Kiran Kutty, Dariusz Czarkowski, Francisco de Leon (New York University, USA)

TS3.4-5: Independent Primary-Side Controller applied to Wireless Chargers for Electric Vehicles

Alicia Triviño, David Fernandez-Cabrera, Miguel Ochoa, Jose Aguado (University of Malaga, Spain)

TS3.4-6: Bidirectional inductive contactless energy transfer system topology for Electric Vehicles

Artur Moradewicz, Rafal Miskiewicz (Electrotechnical Institute, Poland)

TS3.4-7: Impact of Wireless Power Transfer in Transportation

Perry Jones, Omer Onar (Oak Ridge National Laboratory, USA)

>> 2:30 p.m. - 5:00 p.m. _Auditorium_

TS 3.5 Special Session on Integration of Electric Vehicles into Smart Grids
Chairman:
• Pierluigi Siano (University of Salerno, Italy)

TS3.5-1: A Bernoulli Distribution Model for Plug-in Electric Vehicle Charging based on Time-use Data for Driving Patterns
Joakim Munkhammar, Jesper Rydén, Joakim Widén (Uppsala University, Sweden);
Pia Grahn (Royal Institute of Technology, Sweden)

TS3.5-2: Using the Advanced DMS Functions to Handle the Impact of Plug-In Electric Vehicles on Distribution Networks
Saeed Rahimi (University of Genova, Ventyx an ABB Company, Sweden);
Kun Zhu (Ventyx an ABB Company, Sweden);
Stefano Massucco, Federico Silvestro (University of Genova, Italy);
David Steen (Chalmers University of Technology, Sweden)

TS3.5-3: Robust optimization based EV charging
Alireza Soroudi, Andrew Keane (ERC UCD, Ireland)

TS3.5-4: Plug-in EV Charging Impact on Grid Based on Vehicles Usage Data
Giuseppe Graber, Giovanni Massa, Vito Calderaro, Vincenzo Galdi, Antonio Piccolo (University of Salerno, Italy)

TS3.5-5: Performance Analysis of an Electric Vehicle Fleet for Commercial Proposes
Pol Olivella-Rosell, Damia Valero-Bover, Roberto Villafafila-Robles (Universitat Politècnica de Catalunya, Spain);
Silvia Cestau-Cubero (Iberdrola, Spain)

TS3.5-6: Assessment of the Impact of Electric Vehicles on Iberian Day-ahead Electricity Market
Pol Olivella-Rosell, Guillem Bosch-Llufriu, Daniel Heredero-Peris, Roberto Villafafila-Robles (Universitat Politècnica de Catalunya, Spain);
Mario Kovačević (University of Osijek, Croatia);
Niels Leemput (KULeuven ESAT-ELECTA, Belgium)

>> 2:30 p.m. - 5:00 p.m. _Sala Onice_

TS 3.6 Special Session on Technologies for advanced management of battery and supercap energy storage systems in Evs
Chairman:
• Federico Baronti (University of Pisa, Italy)

TS3.6-1: An Agent Based Approach for the Development of EV fleet Charging Strategies in Smart Cities
Mario Mureddu, Alfonso Damiano, Maura Musio (Università di Cagliari, Italy);
Antonio Scala, Alessandro Chessa, Guido Caldarelli (Institute for Advanced Studies, Italy)

TS3.6-2: State of Charge Estimation Using Extended Kalman Filters for Battery Management System
Simona Onori, Carlo Taborelli (Clemson University, USA)

TS3.6-3: Optimal Electric Vehicles Charging Strategy for Energy Management in Microgrids
Alfonso Damiano, Maura Musio, Mario Porru, Alessandro Serpi, Ignazio Marongiu (Università di Cagliari, Italy)

TS3.6-4: Investigation of series-parallel connections of multi-module batteries for electrified vehicles
Federico Baronti, Roberto Di Rienzo, Nicola Papazafiropulos, Roberto Saletti (University of Pisa, Italy)

TS3.6-5: Cost effective storage for energy saving in feeding systems of tramways
Giovanni Lutzemberger, Massimo Ceraolo, Romano Giglioli (University of Pisa, Italy);
Alessio Bechini (EEI S.p.A., Italy)

TS3.6-6: Analysis, Control, and Wireless Charging of Energy Systems Using Ultracapacitors
Chengbin Ma, Chen Zhao, He Yin, Minfan Fu (University of Michigan-Shanghai Jiao Tong University Joint Institute, China)

TS3.6-7: Investigating Electric Vehicles as a Promising Alternative to Static Storage Solutions
Sarah Detzler, Dejan Ilic, Stamatis Karnouskos, Christoph Kindermann (SAP Research, Germany)

>> 2:30 p.m. - 5:00 p.m. _Sala Verde_

TS 3.7 Special Session on Towards wireless dynamic charging: Challenges and Prospects

Chairman:
• Angelos Amditis (Institute of Communication and Computer Systems, Greece - FABRIC IP Coordinator)

TS3.7-1: Electromobility: a market readiness study - Preliminary findings
Ioannis Damousis, Angelos Amditis (Institute of Communication and Computer SYstems, Greece);
Denis Naberezhnykh (TRL, United Kingdom)

TS3.7-2: Impact of dynamic EV wireless charging on the grid
Impact of dynamic EV wireless charging on the grid
Angelos Amditis, Theodoros Theodoropoulos (Institute of Communication and Computer SYstems, Greece);
Jesús Sallán, Hans Bludszuweit (CIRCE Foundation, Spain);
Boris Berseneff (University Grenoble Alpes, France);
Paolo Guglielmi, Francesco Deflorio (Politecnico di Torino, Italy)

TS3.7-3: Towards new infrastructure materials for on-the- road charging
Feng Chen, Nicole Kringos (KTH Royal Institute of Technology, Sweden)

TS3.7-4: Operational requirements for dynamic wireless power transfer systems for electric vehicles
Denis Naberezhnykh, Nick Reed, Flora Ognissanto (TRL, United Kingdom);
Hans Bludszuweit (CIRCE Foundation, Spain);
Theodoros Theodoropoulos (Institute of Communication and Computer SYstems, Greece);

>> 2:30 p.m. - 5:00 p.m. _Sala 4_

TS 3.8 Special Session on Simulation, management and performance analysis in hybrid and electric vehicles

Chairman:
• Giambattista Gruosso (Politecnico di Milano, Italy)

TS3.8-1: Analyzing the Energy Consumption of the BMW ActiveE Field Trial Vehicles with Application to Distance to Empty Algorithms
Lennon Rodgers (MIT, USA & BFH, Switzerland); Stephen Zoepf (MIT, USA); Johann Prenninger (BMW Group, Germany)

TS3.8-2: Well-to-wheel analysis and measurement of energy use and greenhouse gas and criteria emissions in a plug-in hybrid vehicle: the EcoCAR 2 case study
Giorgio Rizzoni, Katherine Bovee, Midlam-Mohler Shawn, Matthew Yard, Margaret Yatsko (Ohio State University, USA)

TS3.8-3: A Method to Analyze Driver Influence on the Energy Consumption and Power Needs of Electric Vehicles
Rayad Kubaisi, Frank Gauterin, Martin Giessler (Karlsruhe Institute of Technology, Germany)

TS3.8-4: A Two-Step Process for Clustering Electric Vehicle Trajectories
Ignacio Benítez, Carlos Blasco, Amparo Mocholí, Alfredo Quijano (Energy Technological Institute, Spain)

TS3.8-5: A Model and Strategy to Improve Smart Home Energy Resilience During Outages Using Vehicle-to-Home
Robin Roche, Fei Gao, Alexandre Ravey (Université de Technologie de Belfort-Montbéliard, France);
Florence Berthold, Sheldon Williamson (Concordia University, Canada);
Fei Wang (Shanghai University, China)

TS3.8-6: Predictive model based battery constraints for Electric Motor control within EV powertrains
Bogdan Rosca, Steven Wilkins, Jubin Jacob, Erik Hoedemaekers (TNO, Netherlands); Stefan van den Hoek (Eindhoven University of Technology, Netherlands)

>> 2:30 p.m. - 5:00 p.m. _Sala 9_

TS 3.9 <u>Special Session</u> on Electric Vehicles Charging Infrastructures and Grid Integration

Chairman:
• Filipe Soares (INESC Porto, Portugal)

TS3.9-1: Development of a Novel Management System for Electric Vehicle Charging
Filipe J. Soares, Jose Pedro Iria, Ivan Franchin (INESC Porto, Portugal);
Nuno Silva (EFACEC, Portugal)

TS3.9-2: Dynamic Programming-based Optimization of Electric Vehicle Fleet Charging
Josko Deur, Branimir Skugor (University of Zagreb, Croatia)

TS3.9-3: Distribution Network Congestion Management by means of Electric Vehicle Smart Charging within a Multi-microgrid Environment
Cristina Corchero, Gerard Del-Rosario-Calaf, Miquel Cruz, Ramon Gumara (Catalonia Institute for Energy Research, Spain)

TS3.9-4: Optimal Charging Strategy Algorithm for PEVs: a Monte Carlo validation
Federico Silvestro, Francesco Baccino, Stefano Massucco, (University of Genova, Italy);
Samuele Grillo (Politecnico di Milano, Italy)

TS3.9-5: Spatial Planning of Public Charging Points for Electric Vehicles: The Case of the Oporto City
Tiago Costa, Álvaro Costa (University of Porto, Portugal)

TS3.9-6: Framework for the Participation of EV Aggregators in the Electricity Market
Filipe J. Soares, Ricardo Bessa, Manuel Matos (INESC Porto, Portugal)

TS3.9-7: Power Quality Improvement in Primary Distribution Grids through Vehicle-to-Grid Technologies
Dario Zaninelli, Morris Brenna, Federica Foiadelli, Michela Longo (Politecnico di Milano, Italy)

>> 2:30 p.m. - 5:00 p.m. _Sala 202_

TS 3.10 <u>Special Session</u> on Energy efficiency optimization and robust control of PMSM drives used in EV's

Chairman:
• Dénes Fodor (University of Pannonia, Hungary)

TS3.10-1: Torque Capabilities of a Five-Phase PM BLDC Drive vs. a Three-Phase One and Various Supply Modes
Syam Naresh Garlapati, Ritesh Kumar Keshri, Giuseppe Buja (University of Padova, Italy);
Alberto Tessorolo (University of Trieste, Italy)

TS3.10-2: Electric Vehicle Traction based on a PM Assisted Synchronous Reluctance Motor
Emanuele Fornasiero, Nicola Bianchi, Silverio Bolognani, Mose' Castiello, Enrico Carraro (University of Padova, Italy)

TS3.10-3: Modeling of slotless surface-mounted PM synchronous motor for sensorless applications
Istvan Szalay, Gabor Kohlrusz, Dénes Fodor (University of Pannonia, Hungary)

TS3.10-4: Analysis of Axial Flux Permanent Magnet Synchronous Machines for EV Applications
Gergely Máté Kiss (Budapest University of Technology and Economics, Hungary);
Istvan Vajda (Obuda University, Hungary)

TS3.10-5: Robust reconfigurable control for in-wheel motor vehicles
Tímea Fülep, Ferenc Szauter (Szechenyi Istvan University, Hungary);
Péter Gáspár, József Bokor, Zoltan Szabo, Andras Mihaly (Hungarian Academy of Sciences, Hungary)

TS3.10-6: Performance Analysis of PMSM for High-Speed Flywheel Energy Storage Systems in Electric and Hybrid Electric Vehicles
Alessandro Serpi, Federico Deiana, Gianluca Gatto, Ignazio Marongiu (Università di Cagliari, Italy)

TS3.10-7: On the control of a vehicle dynamics problem
Adrián Németh, Tihamer Kocsis, Zoltan Horvath (Szechenyi Istvan University, Hungary)

>> 2:30 p.m. - 5:00 p.m. _**Sala 203**_

TS 3.11 Special Session on Unconventional electrical machines for electric vehicles

Chairmen:
- Fabrizio Marignetti (University of Cassino and South Lazio, Italy)
- Silvio Vaschetto (Politecnico di Torino, Italy)

TS3.11-1: Axial Flux Machines for Hybrid Module Applications

Adam Malloy, Adrian Mlot, Mark Cordner, Michael Lamperth (GKN-EVO eDrive Systems Ltd., United Kingdom)

TS3.11-2: Analysis of high-performance magnetic gears for electric vehicle

Alessandro Rotondale, Marco Villani (University of L'Aquila, Italy);
Luca Castellini (Umbra Cuscinetti Research Center, Italy)

TS3.11-3: A Comparison of the Transverse, Axial and Radial Flux PM Synchronous Motors for Electric Vehicle

Bo Zhang, Torsten Epskamp, Martin Doppelbauer (Karlsruhe Institute of Technology, Germany);
Matthias Gregor (Daimler AG, Germany)

TS3.11-4: Multi-n-phase Electric Drives for Traction Applications

Giovanni Piccoli, Paolo Guglielmi, Vincenzo Cirimele, Michela Diana (Politecnico di Torino, Italy)

TS3.11-5: Design Trade-off and Experimental Validation of Multiphase Starter Generators for 48V Mini-Hybrid Powertrain

Marco Cossale, Radu Bojoi, Andrea Cavagnino, Alberto Tenconi, Silvio Vaschetto (Politecnico di Torino, Italy)

TS3.11-6: PM Synchronous Machine Comparison for Light Electric Vehicles

Mattia Morandin, Enrico Carraro, Nicola Bianchi (University of Padova, Italy);
Michele Degano (University of Trieste, Italy)

>> 5:30 p.m. - 6:30 p.m. _**Ballatoio**_

PD 3.1 Power grid opportunities and EV infrastructure support

Chairman:
• Giorgio Sulligoi (University of Trieste, Italy)

PD3.1-1: Impacts of G2V and V2G Power on Electricity Demand Profile

Prateek Jain, Trapti Jain (Indian Institute of Technology Indore, India)

PD3.1-2: Role and Impact of Coordinated EV Charging on Flexibility in Low Carbon Power Systems

Ivan Pavić, Tomislav Capuder, Ninoslav Holjevac, Igor Kuzle (University of Zagreb, Croatia)

PD3.1-3: Optimal Distributed Consensus Algorithm for Fair V2G Power Dispatch in a Microgrid

Mingming Liu (Maynooth University, Ireland);
Emanuele Crisostomi (University of Pisa, Italy);
Yingqi Gu (University of Edinburgh, United Kingdom);
Robert Shorten (IBM Research, Ireland)

PD3.1-4: New business models for electric mobility: a possible future scenario

Filippo Benesperi, Riccardo Barbieri, Gianni Campatelli, Andrea Meneghin (Università degli Studi di Firenze, Italy)

PD3.1-5: Self-Forecasting Energy-load Stakeholders

Sarah Detzler, Dejan Ilic, Stamatis Karnouskos (SAP Research, Germany)

PD3.1-6: Using Electric Vehicles to Improve Building Energy Sustainability

Raffaele Bruno,Emilio Ancillotti (Italian National Research Council, Italy);
Emanuele Crisostomi, Mauro Tucci (University of Pisa, Italy)

PD3.1-7: Introducing wireless charging facilities for electric vehicles: the case study of Firenze

Riccardo Barbieri, Gianni Campatelli, Andrea Meneghin, Filippo Benesperi (Università degli Studi di Firenze, Italy)

PD3.1-8: Impact of Electric Vehicle Infrastructure on the City of Chatsworth Distribution System

Mohammed Beshir, Zeming Jiang, Laith Shalalfeh (University of Southern California, USA)

PD3.1-9: Can electric vehicles reduce electricity bill? Battery could supply electricity during on-peak hours

Rodolfo Dufo-López, J. Sergio Artal-Sevil, José L Bernal-Agustín, José A Domínguez-Navarro (University of Zaragoza, Spain)

PD3.1-10: Implementing electric mobility new business model in future scenario: the electric park and ride system

Andrea Meneghin, Riccardo Barbieri, Gianni Campatelli, Filippo Benesperi (Università degli Studi di Firenze, Italy)

PD3.1-11: Electric Vehicle Smart Charging using Dynamic Price Signal

Sergejus Martinenas, Anders Bro Pedersen, Mattia Marinelli, Peter Andersen, Chresten Træholt (Technical University of Denmark, Denmark)

PD3.1-12: Flexible Test System Architecture for Electric Vehicle Charging Infrastructure

Martin Nöhrer, Felix Lehfuss, Johannes Stöckl (Austrian Institute of Technology, Austria)

PD3.1-13: Electric Vehicles Charging Control based on Future Internet Generic Enablers

Andrea Lanna, Francesco Liberati, Letterio Zuccaro, Alessandro Di Giorgio (Sapienza University of Rome, Italy)

PD3.1-14: A framework for the distributed management of charging operations

Maria Pia Fanti, Agostino Marcello Mangini (Polytechnic of Bari, Italy);
Giovanni Pedroncelli, Walter Ukovich (University of Trieste, Italy)

PD3.1-15: Flexible Local Load Controller for Fast Electric Vehicle Charging Station Supplemented with Flywheel Energy Storage System

Tomislav Dragičević, Sun Bo, Erik Schaltz, Josep M. Guerrero (Aalborg University, Denmark)

PD3.1-16: Electric Vehicle Charging Stations network - A preliminary evaluation about Italian Highways
Salvatore Micari, Giuseppe Napoli, Laura Andaloro, Vincenzo Antonucci (National Council of Research Nicola Giordano, Italy)

PD3.1-17: An Aggregator for Demand Side Management at Domestic Level Including PEVs
Samuele Grillo (Politecnico di Milano, Italy);
Stefano Massucco, Federico Silvestro, Francesco Baccino (University of Genova, Italy);
Giuseppe Mauri, Paolo Mora (RSE, Italy)

PD3.1-18: Seasonal impacts of EV charging on rural grids A Case-Study from Hvaler, Norway
Bernt A Bremdal (Narvik University College, NCE SMART MARKETS, Norway);
Stine Grasto (Ostfold University College, Norway)

PD3.1-19: Impact of a large fleet of EVs on the efficiency and reliability of an electric power system
Davide Poli, Romano Giglioli, Marco Giuntoli, Giovanni Lutzemberger (University of Pisa, Italy)

PD3.1-20: Experimental Analysis of DC Electric Vehicles Charging Station Operation and its Impact on the Supplying Grid
Pawel Kelm, Ryszard Pawelek, Irena Wasiak (Lodz University of Technology, Poland)

PD3.1-21: Neighborhood Level Network Aware Electric Vehicle Charging Management with Mixed Control Strategy
Benoit Boulet, Di Wu (McGill University, Canada);
Haibo Zeng (University of Virginia Tech, USA)

>> 5:30 p.m. - 6:30 p.m. _**Ballatoio**_

PD 3.2 EV power electronics and motor drives
Chairman:
• Roberto Petrella (University of Udine, Italy)

PD3.2-1: Dead time generator for synchronous boost converters with GaN transistors
Luigi Schirone, Michele Macellari, Fabio Celani (Sapienza University of Rome, Italy)

PD3.2-2: Improvement of active safety systems by the extended Kalman filter based estimation of tire-road friction coefficient
Krisztian Enisz, Dénes Fodor, Zoltan Marton, Istvan Szalay, Gabor Kohlrusz (University of Pannonia, Hungary)

PD3.2-3: Frequency Analysis Based Tire Pressure Monitoring
Zoltan Marton, Dénes Fodor, Krisztian Enisz, Klaudia Nagy (University of Pannonia, Hungary)

PD3.2-4: Comparison of Different PMSM Rotor Configurations
Szilard Jagasics, Istvan Vajda (Obuda University, Hungary)

PD3.2-5: Multi-channel active gear pair vibration control with an electronically commutated motor as actuator
Timo Benzel (Robert Bosch GmbH, Germany);
Andreas Moeckel (Ilmenau University of Technology, Germany)

PD3.2-6: Comparison between an AC-DC Matrix Converter and an Interleaved DC-DC Converter with Power Factor Corrector for Plug-In Electric Vehicles
Gabriele Rizzoli, Luca Zarri, Michele Mengoni, Angelo Tani, Leonardo Attilio, Giovanni Serra, Domenico Casadei (University of Bologna, Italy)

>> 5:30 p.m. - 6:30 p.m. _**Ballatoio**_

PD 3.3 Wireless charging, conductive charging and superfast charging

Chairman:
- Siqi Li (Kunming University of Science and Technology, P.R. China)

PD3.3-1: Three Phase LLC Resonant Converter with D-DLL Control Technique for EV Battery Chargers

Erdem Asa, Mariusz Bojarski, Kerim Colak, Dariusz Czarkowski (New York University, USA)

PD3.3-2: Design Improvement of the inductive link of a Contactless Energy Charging System

Pedram Shahriari Nasab, Mehdi Moallem (Isfahan University of Technology, Iran)

PD3.3-3: Inductive Characteristics of Different Coupling Setups for Wireless Charging of an Electric City-Car

Kishore Naik Mude, Giuseppe Buja, Manuele Bertoluzzo (University of Padova, Italy)

PD3.3-4: ZeEUS: Zero Emission Urban Bus System Testing Different Charging Strategies and Energy Supply Modes for Electric Buses in Live Operational Demonstrations

Umberto Guida, Stephanie Leonard (International Association for Public Transport, Belgium)

PD3.3-5: An innovative next generation E-mobility infrastructure: the eCo-FEV project

Paolo Guglielmi, Vincenzo Cirimele, Michela Diana, Fabio Freschi, Giovanni Piccoli (Politecnico di Torino, Italy);
Nadim El Sayed (Technische Universitaet Berlin, Germany)

PD3.3-6: Design Algorithm of a Uniform Magnetic Field Transmitter Intended for the Wireless Charging of Electric Vehicles

Mariusz Bojarski, Jingduo Huang, Tianqi Hong, Francisco de Leon, Dariusz Czarkowski (New York University, USA)

PD3.3-7: Effect of Wireless Power Link Load Resistance on the Efficiency of the Energy Transfer

Mariusz Bojarski, Erdem Asa, Dariusz Czarkowski (New York University, USA)

PD3.3-8: Boucherot Bridge Based Zero Reactive Power Inductive Power Transfer Topologies with a Single Phase Transformer

Konrad Woronowicz, Alireza Safaee, Tim Dickson (Bombardier Transportation, Canada);
Mohamed Youssef, Sheldon S Williamson (University of Ontario Institute of Technology, Canada)

>> 5:30 p.m. - 6:30 p.m. _**Ballatoio**_

PD 3.4 <u>Special Session</u> on Voltage control of multiconverter DC microgrids for EV: definitions, design, modeling, stability

Chairman:
- Giorgio Sulligoi (University of Trieste, Italy)

PD3.4-1: The Stability of DC Power Systems Feeding Constant Power Loads

Christopher G Hodge (BMT Defence Services, United Kingdom);
John Flower (University of Warwick, United Kingdom)

PD3.4-2: Decentralized Control of a Vehicular Microgrid with Constant Power Loads

Alexis Kwasinski (University of Pittsburgh, USA);
Mahesh Srinivasan (University of Texas at Austin, USA)

PD3.4-3: Aggregation of Plug-in Electric Vehicles in Distribution Networks for Primary Frequency Control

Seyedmahdi Izadkhast (Comillas University, Spain; Delft University of Technology, Netherlands);
Pablo Garcia-Gonzalez, Pablo Frias Marin (Comillas Pontifical University, Spain);
Laura Ramirez Elizondo, Pavol Bauer (Delft University of Technology, Netherlands)

PD3.4-4: More Electric Vehicles DC Power Systems: a Large Signal Stability Analysis in presence of CPLs fed by Floating Supply Voltage

Daniele Bosich, Giovanni Giadrossi, Giorgio Sulligoi (University of Trieste, Italy);
Samuele Grillo, Enrico Tironi (Politecnico di Milano, Italy)

CLEAN CITIES WORKSHOP

AUDITORIUM, PALAZZO DEI CONGRESSI - FLORENCE CONGRESS CENTRE
DECEMBER 18, 2014 - FROM 10:30 A.M. TO 1:00 P.M.

The goal of the workshop is intended to connect leaders from industry, academia and policy makers to discuss the trends, the research results and the needs to the advanced vehicle electrification and to the supporting infrastructure, with particular focus to public transportation. It will provide open platforms for discussions, proposals, solutions and represent a concrete opportunity to coordinate actions and resources for the e-mobility. The governments of important European Municipalities will be invited at the CLEAN CITIES workshop to discuss problems and the incoming scenarios towards the sustainable mobility, interacting with industries and Universities. The workshop will give the opportunity to city delegates, companies and researchers to share ideas and new concepts about the smart integration of the modern technologies inside the towns of the future with an open and positive dialogue.

MODERATORS:
- **Pietro Menga** - President of CEI-CIVES
- **Bobby Wong** - Future Directions Program Director at IEEE

INVITED SPEAKERS
- **C.C. Chan** (Hon Kong University, founder of World Electric Vehicle Association)
- **Umberto Guida** (UITP-International Advanced Public Transport - coordinator)
- **José Fernandez Garcia** (European Commission - DG Mobility)
- **Volker Fricke** (IBM)
- **Ashok Moghe** (Cisco)
- **Ulf Gustafsson** (Volvo bus)
- **Mark Poulton** (Transport for London)
- **Bert Witkamp** (Secretary General AVERE)

Representatives from Municipalities and companies will participate to the final debate.

Expected participants:
- Central and local governments delegates
- Carmakers
- National Policy officers
- Infrastructures Companies
- Environmental Project Officers
- Transportation and Logistic Managers
- Energy Tech Depts. Managers
- Financing Managers
- Urban Transport City Companies
- Energy Providers

Wireless Charging: related standards and needs

SALA VERDE, PALAZZO DEI CONGRESSI - FLORENCE CONGRESS CENTRE
DECEMBER 18, 2014 - FROM 10:30 A.M. TO 1:00 P.M.

Inductive charging is steadily gaining ground in the field of Electric Vehicles. Nowadays inductive charging systems are moving from research labs into the market and are becoming commercial products. Inductive charging is considered the ultimate solution which will pave the way for the actual and broad electromobility implementation. However, regardless of the large technological advances and research investments, technology penetration is not the only bottleneck. Interoperability among systems is a must in order to actually enjoy the benefits of inductive charging systems. Interoperability is currently pursued either through standardisation or ad-hoc cooperation between manufacturers aiming to pursue "de facto" standards. Standardisation is currently equally, if not more, important with pure technical aspects and is a topic that involves the entire supply chain from OEMs and Tier 1 suppliers to road operators, DSO and grid operators. The workshop will open with some keynotes from international associations and key experts; then a general overview of the related technology will follow with emphasis on current standardardization needs while key experts will provide a general overview of wireless charging Standardizations activities. An after-workshop roundtable dialogue will be stimulated, in which all participants will expose their opinion and debate. Discussions of the workshop can focus on Standardization activities needed for the following topics indicatively:

• Health impact
• Allowable frequencies
• Power levels
• Coil alignment (dynamic)
• Package and distances (geometry)
• Communication protocols
• Environmental impact
• Cost impact of system design decisions

The workshop is organised by FABRIC, a 7th framework funded Integrated Project, which aims to perform a feasibility analysis and implementation of on-road charging solutions for future electric vehicles.

MODERATORS:
• **Angelos Amditis** - Institute of Communication and Computer Systems (ICCS), FABRIC IP Coordinator
• **Joachim Taiber** - Clemson University

INVITED SPEAKERS

- **Grzegorz Ombach**, Vice President of Engineering, global research and development Wireless Electric **Vehicle Charging** (WEVC) technology, Qualcomm, USA
- **Konrad Woronowicz**, Fellow Expert, Bombardier Transportation, Canada
- **Jeff Muhs**, Director, Business Development, AIMM, WiTricity Corporation, USA
- **Jae Seung Lee**, Research Institute of North America Manager, Toyota, USA
- **Gian Maurizio Rodella**, Director, Commissione Tecnica di Unificazione nell'Autoveicolo - CUNA, Italy
- **Keith Wilson**, Project Manager, Technical Programs, Global Ground Vehicle Standards, SAE INTERNATIONAL, USA
- **Michael Scholz**, Senior consultant, Electric mobility department, P3 automotive GmbH (Project Leader of the ISO JPT 19363), Germany
- **Peter Van den Bossche**, Lecturer, Vrije Universiteit Brussel, (Secretary of IEC TC69), Belgium

Dialogue session (60min)

Expected participants:

- Automotive Companies
- European and International Authorities
- ICT and Infrastructure Companies
- Researchers
- Standardization experts
- Energy providers
- Charging solution providers
- Road Operators
- Grid Operators
- Distribution System Operators

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Energy storage Technologies for Electrified Vehicles

SALA ONICE, PALAZZO DEI CONGRESSI - FLORENCE CONGRESS CENTRE
DECEMBER 18, 2014 - FROM 10:30 A.M. TO 1:00 P.M.

Electrified vehicles are one of the most promising technologies to enhance energy efficiency and reduce greenhouse gas emission. Their market penetration is currently limited by the high cost of the onboard energy storage system, as well as the concerns related to its effective use, dependability, and safety. The aim of this workshop is to provide an overview of the research trends and of novel solutions to face the above problems. The workshop will alternate presentations by experts from industry and academy and offer a friendly and interactive environment for discussing this challenging and hot topic.

MODERATORS:
- **Andrew F. Burke** - Institute of Transportation Studies, University of California-Davis
- **Federico Baronti** - University of Pisa

INVITED SPEAKERS
- **Andrew F. Burke** - Institute of Transportation Studies, University of California-Davis
- **Federico Baronti** - University of Pisa
- **Chengbin Ma**, University of Michigan-Shanghai Jiao Tong University Joint Institute, Shanghai, China
- **Vincent Lorentz**, Fraunhofer IISB - Group Manager of the "Battery Systems" Group in the "Power Electronics" division

Europe meets IEVC

In the recent years electromobility has been receiving progressively increasing support from governments and large vehicle manufacturers and OEMs in the form of large funding schemes for research and development and the introduction to the market of fully electric vehicles respectively, in an effort to shift globally towards a cleaner and more sustainable form of transport. This workshop aims at bringing together the leaders from the industry, academia and policy makers in Europe to assess the state of electromobility in Europe, identify trends and roadblocks and possibly draft a roadmap towards the large scale implementation of electromobility. The workshop will provide the opportunity for key stakeholders to present state of the art developments in EC funded and national projects and share ideas.

The workshop is organized by FABRIC, a 7th framework funded Integrated Project, which aims to perform a feasibility analysis and implementation of on-road charging solutions for future electric vehicles.

MODERATORS:
- **Angelos Amditis** - Institute of Communication and Computer Systems (ICCS), FABRIC IP Coordinator
- **Bert Witkamp** - Secretary General AVERE

INVITED SPEAKERS
- **Angelos Amditis**, Research Director, Institute of communication and Computer Systems, Greece (**FABRIC** project coordinator).
- **Horst Pfluegl**, Global Research Program Manager, AVL List GmbH, Austria (**ASTERICS** project coordinator).
- **Axel Barkow**, Senior Manager Electrics/Electronics Department, FKA, Germany (**UNPLUGGED** project coordinator).
- **Ioannis Karakitsios**, SmartRue research group, National and Technical University of Athens (NTUA), Greece (**FastInCharge** project representative).
- **Giovanni Coppola**, Product Manager, ENEL, Italy, (**Green eMotion** project representative).
- **Umberto Guida**, European Projects Director, UITP - International Association of Public Transport, Belgium (**ZeEus** project Coordinator).
- **Paolo Guglielmi**, Associate Professor, Department of Energy, Politecnico di Torino, Italy, (**eCo-FEV** project representative).
- **Enrico Cioni**, Mobility Department, Municipality of Florence, Italy (**Ele.C.Tra** project representative).
- **Michela Apruzzese**, Project Manager, Municipality of Reggio Emilia, Italy (**Mobility 2.0** project representative).

EV's components and infrastructures standardization

SALA VERDE, PALAZZO DEI CONGRESSI - FLORENCE CONGRESS CENTRE
DECEMBER 19, 2014 - FROM 10:30 A.M. TO 1:00 P.M.

The goal of this workshop is to bring together leading experts from industry, academia, automotive manufacturers and relevant standardization bodies to discuss about Electric Vehicles and Infrastructure Standardization.

The workshop aims to highlight the state of the art of standization of Eletctrical and Electronic components, of EV and component's testing, of driving cycle standards.

The workshop will include a group of oral presentations followed by a round table open to all the attendees.

MODERATORS:
* **Marco Pierini** - Università di Firenze
* **Federico Caleno** - ENEL

INVITED SPEAKERS
* **Andrea Legnani**, CEI – Italian Electrotecnical Committee: *"Electrical and electronic components for electric and/or hybrid road vehicles" and the state of the art of related technical standards"*
* **Keith Wilson**, Technical Programs Global Ground Vehicle Standards SAE INTERNATIONAL: *"SAE Cooperative research project for the development of Safety Performance Test Procedures for xEVs Equipped with Lithium Ion Rechargeable Energy Storage Systems"*
* **Riccardo Bartolozzi**, Fraunhofer LBF: *"Load testing of e-vehicles and e-powertrain components"*
* **Lorenzo Berzi**, UNIFI: *"The creation of customized driving cycles for electric vehicle simulation and testing"*
* **Jens Groot**, Volvo Group Trucks Technology: *"Test Procedures for Energy Storage Components in Heavy-Duty Vehicles"*
* **Federico Caleno** - ENEL: *"IEC 69 Technical Committee activities"*

Participant companies

McLaren — BMW — MECAPROM

BYD — Enel — BOMBARDIER

IBM — CISCO — SIEMENS

QUALCOMM — MAGNETI MARELLI — TOYOTA

SCHAEFFLER — VOLVO — SAP

WiTricity — AVL

SHARE'NGO the new mobility — Zhidou ZD — SPIN — COMPOLAB advanced R&D

Participant European Projects

Green eMotion — ZeEUS Zero Emission Urban Bus System

Unplugged

eCo-FEV

FABRIC

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