



SAE Torino Group

TO ZEV:

*HIGHLIGHTING THE LATEST POWERTRAIN,
VEHICLE AND INFOMOBILITY TECHNOLOGIES*

June 9-10, 2011 Politecnico di Torino, Turin, Italy

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For Information:

SAE Torino Group— via Carlo Alberto 16 10121 Torino Italy

E-mail: saetozev@polito.it; info@saetorinogroup.org

Website: www.saetorinogroup.org

Overview:

This symposium will address both powertrain and automobile body systems approaches towards “zero emissions vehicles”, more specifically: fuel consumption and emission reductions achievable through electric motors and advanced internal combustion engines technologies and powertrain hybridization and electrification, low rolling resistance tires, aerodynamic improvement, and infomobility services. Speakers are currently being confirmed from: General Motors, Fiat, Audi, Volvo, Renault, Bosch, FEV, AVL, FKFS and several universities.

A two day, two parallel track technical program will provide to attendees an insightful look at new and developing technologies addressing the ambitious ZEV targets, including:

- Combustion optimization and emissions minimization, including new aftertreatment technologies
- Hybrid & electric powertrains
- Alternative Fuels
- Innovative transmission concepts
- Vehicle Mass Lightening and New Vehicle concepts
- Vehicle concepts modeling (EU FP7 VECOM project)
- Vehicle Aerodynamics

As an attendee, you have the opportunity to learn about new and developing technologies, network with other professionals, and attend walking tours of the GM Powertrain facilities and the Politecnico labs.

Organizers:

<i>Michael Bargende</i>	IVK/ FKFS-Universität Stuttgart
<i>Marzio Bianchi</i>	From Concept To Car
<i>Giovanni Cipolla</i>	Former GM Diesel Advanced Engineering & Hybrids Director
<i>Antonello Cogotti</i>	SAE Fellow
<i>Jan Macek</i>	Czech Technical University Prague
<i>Carloandrea Malvicino</i>	Centro Ricerche Fiat
<i>Federico Millo</i>	Politecnico di Torino
<i>Mauro Velardocchia</i>	Politecnico di Torino
<i>Jochen Wiedemann</i>	IVK/ FKFS-Universität Stuttgart
<i>Steve Wollenberg</i>	Automatiks

Partners

 CAMERA DI COMMERCIO INDUSTRIA ARTIGIANATO E AGRICOLTURA DI TORINO 		
		

Sponsors



TO ZEV:

HIGHLIGHTING THE LATEST POWERTRAIN, VEHICLE AND INFOMOBILITY TECHNOLOGIES

Thursday, June 9, 2011			
9:00am 9:10am	Welcome Address F. Profumo , Rector of the Politecnico di Torino V. Ilotte , Board Member of the Torino Chamber of Commerce A. Dal Poz , President of SAE Torino Group, AULA MAGNA		9:00am 9:10am
9:10am 9:35am	Opening Keynote: S. Re Fiorentin , Centro Ricerche FIAT The roadmap towards ZEVs AULA MAGNA		9:10am 9:35am
9:35am 10:00am	Opening Keynote: K. Burgdorf , Volvo Car Corporation Challenges and Opportunities for the Transition to Highly Energy-Efficient Passenger Cars AULA MAGNA		9:35am 10:00am
10:00am 10:30am	Networking Break - Sponsored by AVL		10:00am 10:30am
10:30am 12:10pm	PWT1 - Combustion Optimization and Emissions Minimization, Including New Aftertreatment Chairperson: M. Bargende , IVK/ FKFS- Universität Stuttgart AULA MAGNA	VEH1 – Electromobility Chairperson: J. Wiedeman , IVK/ FKFS- Universität Stuttgart SALA CONSIGLIO DI FACOLTÀ	10:30am 12:10pm
12:10pm 12:30pm	Discussion and Round Table Chairperson: M. Bargende AULA MAGNA	Discussion and Round Table Chairpersons: J. Wiedemann / S. Wollenberg SALA CONSIGLIO DI FACOLTÀ	12:10pm 12:30pm
12:30pm 2:00pm	Lunch EDISU Canteen		12:30pm 2:00pm
2:00pm 4:00pm	PWT3 – Alternative Fuels Chairperson: F. Millo , Politecnico di Torino AULA MAGNA	VEH2 – Vehicle Aerodynamics Chairperson: A. Cogotti , SAE Fellow SALA CONSIGLIO DI FACOLTÀ	2:00pm 4:00pm
4:00pm 4:20pm	Discussion and Round Table Chairperson: F. Millo AULA MAGNA	Discussion and Round Table Chairperson: A. Cogotti SALA CONSIGLIO DI FACOLTÀ	4:00pm 4:20pm
4:20pm 4:30pm	Networking Break - Sponsored by FEV		4:20pm 4:30pm
4:30pm 5:15pm	1st Lab Tour — GM Powertrain and Politecnico Labs Please pre-register or sign in at the registration desk		4:30pm 5:15pm
5:15pm 6:00pm	2nd Lab Tour — GM Powertrain and Politecnico Labs Please pre-register or sign in at the registration desk		5:15pm 6:00pm
7:30pm 9:00pm	Evening Reception – Castello del Valentino, Sala delle Colonne		7:30pm 9:00pm

EVENT TIMETABLE

Friday, June 10, 2011			
9:00am 10:00am	PWT2 Part 1 – Hybrid Electric Powertrain Chairperson: <i>G. Cipolla, Former GM</i> <i>Advanced Engineering & Hybrids Director</i> AULA MAGNA	VEH5 Part 1 - Vehicle Concept Modeling Chairperson: <i>X. Margot, CMT-Motores</i> <i>Termicos, Universidad Politecnica de</i> <i>Valencia</i> SALA CONSIGLIO DI FACOLTÀ	9:00am 10:00am
10:00am 10:30am	Discussion and Round Table Chairperson: <i>G. Cipolla</i> AULA MAGNA	Discussion and Round Table Chairperson: <i>X. Margot</i> SALA CONSIGLIO DI FACOLTÀ	10:00am 10:30am
10:30am 11:00am	Networking Break - Sponsored by Kistler		10:30am 11:00am
11:00am 12:20pm	PWT2 Part 2 – Hybrid Electric Powertrain Chairperson: <i>C. Malvicino, Centro Ricerche</i> <i>Fiat</i> AULA MAGNA	VEH5 Part 2 - Vehicle Concept Modeling Chairperson: <i>J. Macek, Czech Technical</i> <i>University Prague</i> SALA CONSIGLIO DI FACOLTÀ	11:00am 12:20pm
12:20pm 12:40pm	Discussion and Round Table Chairperson: <i>C. Malvicino</i> AULA MAGNA	Discussion and Round Table Chairperson: <i>J. Macek</i> SALA CONSIGLIO DI FACOLTÀ	12:20pm 12:40pm
12:40pm 2:00pm	Lunch EDISU Canteen		12:40pm 2:00pm
2:00pm 3:00pm	PWT2 Part 3 – Hybrid Electric Powertrain Chairperson: <i>G. Cipolla, Former GM</i> <i>Advanced Engineering & Hybrids Director</i> AULA MAGNA	PWT4 Innovative Transmission and Energy Recovery Concepts Chairperson: <i>M. Velardocchia, Politecnico di</i> <i>Torino</i> SALA CONSIGLIO DI FACOLTÀ	2:00pm 3:00pm
3:00pm 3:30pm	Discussion and Round Table Chairperson: <i>G. Cipolla</i> AULA MAGNA	Discussion and Round Table Chairperson: <i>M. Velardocchia</i> SALA CONSIGLIO DI FACOLTÀ	3:00pm 3:30pm
3:30pm 4:00pm	Networking Break - Sponsored by Kistler		3:30pm 4:00pm
4:00pm 4:25pm	Closing Keynote: J. Perrin, Renault Battery Electric Vehicle : the Affordable Zero Emission Solution from 2011		4:00pm 4:25pm
4:25pm 4:50pm	Closing Keynote : P. Antonioli, General Motors Powertrain Europe		4:25pm 4:50pm
4:50pm 5:00pm	Round Table and Adjournment		4:50pm 5:00pm

Registration Hours: Atrio Sala Consiglio Di Facoltà
Thursday 9 June 8:00am - 4:30pm
Friday 10 June 8:00am – 2:00pm

How to get to Politecnico



From Caselle Airport

- ✓ **by train + bus** 20 minutes travel by train to Torino Dora Station + bus No. 10
50 minutes total; €3.40
- ✓ **by taxi** 30 minutes; from €35.00



From Porta Nuova Train Station

- ✓ **by bus** Buses No. 58, 58/, 33, 33/
15 minutes; €1.00
- ✓ **by taxi** 10 minutes; €5.00 to €10.00

From Porta Susa Train Station

- ✓ **by bus** Bus No. 10
10 minutes; €1.00
- ✓ **by taxi** 5 minutes; €5.00 to €10.00

Things to do in Torino



Whatever your interests are you'll be able to find things to do in Torino. Torino has over 100 museums, wonderful architecture and great shopping.

For more information on things to do during your visit to Torino, please visit:

<http://www.comune.torino.it/canaleturismo/en/>

<http://www.extratorino.it/ENG/index.php>

Hotels

SAE has not contracted for a block of hotel rooms for this event.

The following list of local lodging which are offering special rates for "TOZEV" attendees is provided for your convenience.

All attendees are responsible for making their own lodging and travel arrangements.

Hotel Boston ****

Single room 105 Euro, Double room 135 Euro

[via Massena, 70](#)

tel. +39 011 500359

Hotel Diplomatic ****

Single room 79 Euro, Double room 99 Euro

[via Cernaia, 42](#)

tel. +39 011 5612444

NH Hotel Ambasciatori ****

Single room 107 Euro, Double room 122 Euro

[c.so Vittorio Emanuele II, 104](#)

tel. +39 011 57521

Hotel Luxor ***

Single room 75 Euro

[c.so Stati Uniti, 7](#)

tel. +39 011 5620777

Registration fees

Registration Fees

Category	By May, 27 2011	After May, 27 2011
SAE Classic Member (includes registration package 1)	400 Euro + 20% VAT	500 Euro + 20% VAT
SAE Premium Member (includes registration package 1)	375 Euro + 20% VAT	475 Euro + 20% VAT
SAE Elite Member (includes registration package 1)	350 Euro + 20% VAT	450 Euro + 20% VAT
SAE Student Member (includes registration package 2)	100 Euro + 20% VAT	150 Euro + 20% VAT
Non-Member (includes registration package 1)	500 Euro + 20% VAT	600 Euro + 20% VAT
Participant (Organizer, Chairperson, Keynote Speaker) (includes registration package 1)	FREE	FREE
Author (includes registration package 1)	200 Euro + 20% VAT	250 Euro + 20% VAT

Registration Packages

- **Package # 1:** Technical Session, Proceedings CD-Rom, Technical Tours, Coffee Breaks, Lunch, Evening reception (June 9)
- **Package # 2:** Technical Session, FTP Downloadable Proceedings, Technical Tours, Coffee Breaks

Registration fee has to be paid through bank transfer only:

Coordinate bancarie SAE Torino Group / Bank details SAE Torino Group:

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Agenzia : TO MARIA VITT

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Associazione SAE Torino Group

Indirizzo / Address:

Via Carlo Alberto 16 c/o CCIAA - 10121 TORINO

Contact: saetozev@polito.it

Speakers' welcome reception

Wednesday, June 8, h. 19:00 - 21:30

The National Automobile Museum

Corso Unità d'Italia, 40 - 10126 Torino

In the evening of Wednesday, all speakers are invited to a welcome reception in the National Automobile Museum, which has been recently reopened after a radical, large-scale transformation of its contents and its building.

The Museum has a new look, thanks to a modern, innovative design: this is not just a simple architectural renovation, but a new amenity redesigned to be placed among the most cutting-edge of European cultural centres. It's a museum that can attract not only an audience of specialists but also young people, families and students. It is a space for all the local people, who will find in the rebuilt complex a place where they can meet and socialize.

The path taking you around the exhibition tells the story and the evolution of the motor car, as well as the social themes linked to it, its transformation from a means of transport to an object of worship, from its origins right up to the contemporary evolution of creative thought, and all this is done with spectacular displays showing off the valuable pieces in the collection.

Guided tours for TOZEV guests will start at 19.00, and last approximately one hour.

A welcome reception will follow starting at 20.00.



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measure. analyze. innovate.

Lab Tour - GM Powertrain and Politecnico Labs

Thursday, June 9, h. 16:30 - 18:00

Politecnico di Torino

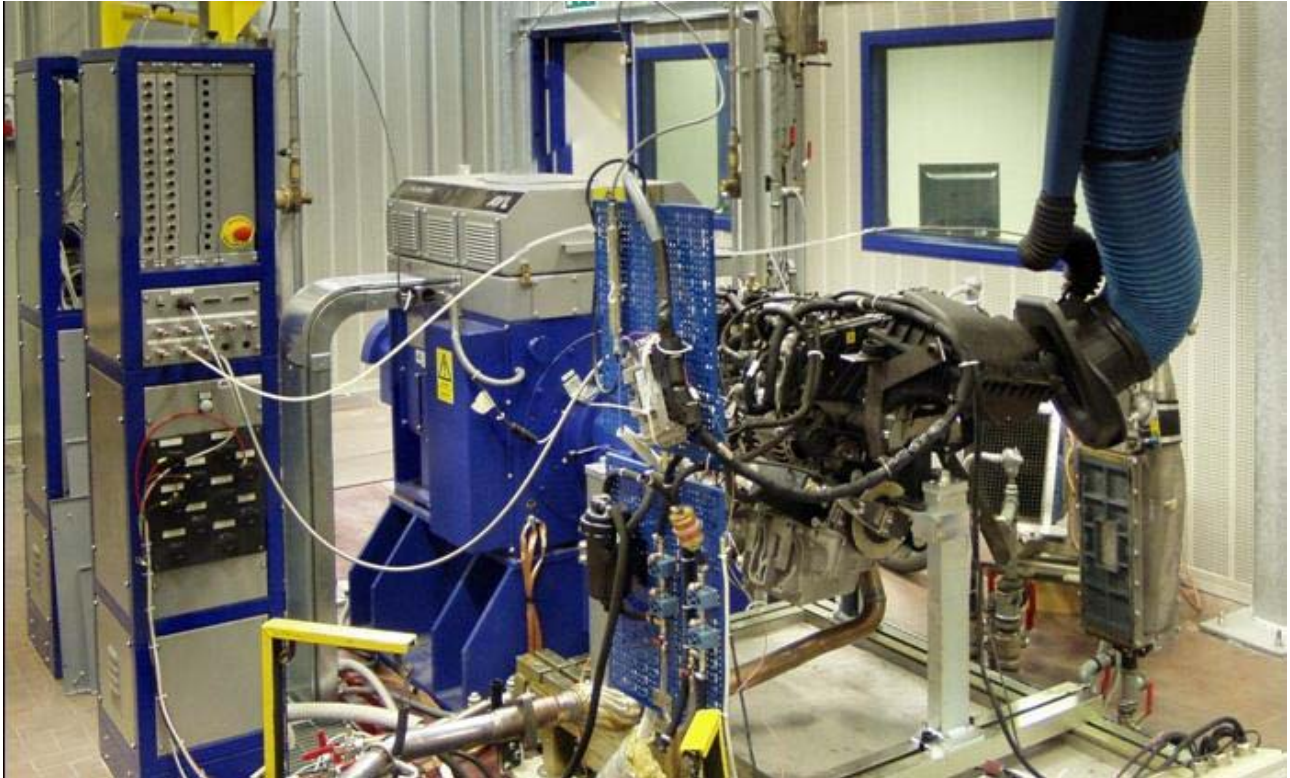
GM Powertrain Europe

The tour of GM Powertrain Europe Research Center includes the visit of state of art laboratories, test benches and the entire facility where currently more than 400 people work.

For the first time an automotive company located its labs inside a university campus. This demonstrates that Torino is part of a long term commitment by GM, and the collaboration with Politecnico is one of its key elements.

Main Politecnico Labs involved in automotive research will also be visited, including Internal Combustion Engines, Vehicle and Transmissions, Aftertreatment, Batteries, Power Electronics and Electric Machines, Controls and Mechatronics.

Please sign up for GM & Polito Lab Tours on June 9 afternoon if interested. Please consider that the number of attendees for the GM tour is limited to 60.



Evening Reception at Castello del Valentino

Thursday, June 9, h. 19:30 -21:00

Sala delle colonne - Castello del Valentino

Viale Mattioli, 39 - 10125 Torino

Built starting from the 16th century, the Castello del Valentino was transformed and enlarged, for the willing of Christine of France, Vittorio Amedeo I's wife, by Carlo and Amedeo of Castellamonte, (1620-1660).

The original character of fluvial villa looking at the river Po was later altered by the development of the front towards the city, with great honors courtyard closed on three sides: in particular, the two side bodies perpendicular to the façade were re-built in the 19th century; the façade is given a portico with an upper lodge and it is sided by two quadrilateral towers.

Decayed after the death of Christine of France, the residence had other destinations of use: veterinary school in the French period, barracks in 1824, application school for engineers from 1859, it is now hosting the Faculty of Architecture of the Politecnico di Torino.

The rooms in the noble floor keep important 17th century décor in fresco and golden or white stucco.

An area of 27.000 meters square left of the Castle is occupied by the Botanical Gardens; founded by Vittorio Amedeo II in 1729, it comprehends various rare plants and it is provided with vast greenhouses, an herbarium and a Library, in which there are kept precious botanical plates of the 17th century.



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9:10am 9:35am	Opening Keynote: S. Re Fiorentin , Centro Ricerche FIAT The roadmap towards ZEVs AULA MAGNA		9:10am 9:35am
9:35am 10:00am	Opening Keynote: K. Burgdorf , Volvo Car Corporation Challenges and Opportunities for the Transition to Highly Energy-Efficient Passenger Cars 2011-37-0013 AULA MAGNA		9:35am 10:00am
10:00am 10:30am	Networking Break - Sponsored by AVL		10:00am 10:30am
	Combustion Optimization and Emissions Minimization, Including New Aftertreatment Session Chairperson: M. Bargende , IVK / FKFS-Universität Stuttgart AULA MAGNA	Electromobility Session Chairperson: J. Wiedemann , IVK / FKFS-Universität Stuttgart SALA CONSIGLIO DI FACOLTÀ	
10:30am 10:50am	Potential for CO₂-Reduction using a Turbocharger with Ball Bearing (Oral only) <i>M. Rauscher, G. Daimer</i> Bosch Mahle Turbosystems	Rating mass related energy demand for vehicles with new powertrain concepts 2011-37-0010 <i>M. Horn, J. Neubeck, J. Wiedemann,</i> IVK/FKFS	10:30am 10:50am
10:50am 11:10am	Performance Analysis of a Turbocharged Heavy Duty Diesel Engine with a Pre-Turbo Diesel Particulate Filter Configuration 2011-37-0004 <i>F. Payri, J.R. Serrano, P. Piqueras, O. García-Afonso,</i> Universitat Politècnica de València	With electricity to ZEV? - Potentials and limits of electric mobility 2011-37-0011 <i>C. Bacher, G. Hohenberg, IVD Prof. Hohenberg GmbH</i>	10:50am 11:10am
11:10am 11:30am	Optical diagnostics of the pollutant formation in a CI engine operating with diesel fuel blends 2011-37-0003 <i>S. S. Merola, G. Valentino, F. Corcione, L. Marchitto, C. Tornatore,</i> Istituto Motori CNR	Project "Zero Emission City (ZEC)" - Evaluation of E-Mobility in the Parma Urban Area (Oral only) <i>C. Iacovini, City of Parma</i>	11:10am 11:30am
11:30am 11:50am	Vehicle Mass Lightening via a Design of Light-weight Structured Substrates for Catalytic Converters 2011-37-0001 <i>M. Presti, L. Pace, W. Mueller, O. Witte-Merl,</i> EMITEC GmbH	Project "Electromobility for Torino (E4To)" - Evaluation of E-Mobility in the Torino Metropolitan Area (Oral only) <i>F. Galliano, GM Powertrain</i>	11:30am 11:50am
11:50am 12:10pm	The Optimization of a Turbocharged Diesel Engine Powertrain through 1D, 3D and Acoustic Analyses (Oral only) <i>F. Bozza, Università di Napoli, D. Siano, M. Costa</i> Istituto Motori CNR	Evaluation of Electric Vehicle Fleet under Urban Driving Conditions (Oral only) <i>H. Kemper, P. Wolters, FEV GmbH</i>	11:50am 12:10pm
12:10pm 12:30pm	Discussion and Round table Chairperson: M. Bargende	Discussion and Round table Chairpersons: J. Wiedemann / S. Wollenberg	12:10pm 12:30pm
12:30pm 2:00pm	Lunch - EDISU Canteen		12:30pm 2:00pm

	<u>Alternative Fuels</u> Chairperson: <i>F. Millo, Politecnico di Torino</i> AULA MAGNA	<u>Vehicle Aerodynamics</u> Chairperson: <i>A. Cogotti, SAE Fellow</i> SALA CONSIGLIO DI FACOLTÀ	
2:00pm 2:20pm	An Investigation on Mixing and Auto-ignition using Diesel and Gasoline in a Direct-Injection Compression-Ignition Engine Operating in PCCI Combustion Conditions 2011-37-0008 <i>J. Benajes, R. Novella, A. Garcia, V. Domenech, Universidad Politecnica de Valencia; R. Durrett, GM R&D Center</i>	An Investigation into the Wake Structure of Square Back Vehicles and the Effect of Structure Modification on Resultant Vehicle Forces 2011-37-0015 <i>R. Littlewood, M. Passmore, D. Wood, Loughborough University</i>	2:00pm 2:20pm
2:20pm 2:40pm	Influences of Bioethanol blends on the combustion performance and emissions of Optical GDI Engines Operating in Homogeneous and Stratified Charge Mixture Conditions 2011-37-0007 <i>P. Sementa, B. M. Vaglieco, Istituto Motori CNR; F. Catapano, Università di Napoli Federico II</i>	Optimizing the external shape of vehicles at the concept stage: integration of aerodynamics and ergonomics 2011-37-0014 <i>E. Ribaldone, CRF SCpA; I. De Puri, IVECO Fiat Spa; F. Cogotti, R. Pizzoni, CRF SCpA; M. Gautero, FIAT Group Automobiles</i>	2:20pm 2:40pm
2:40pm 3:00pm	The Key Role of the Closed-loop Combustion Control for Exploiting the Potential of Biodiesel in a Modern Diesel Engine for Passenger Car Applications 2011-37-0005 <i>C. Ciaravino, General Motors LLC; C. Guido, Istituto Motori CNR; A. Vassallo, General Motors LLC; C. Beatrice, Istituto Motori CNR</i>	Past, Current and Future Developments of Vehicle Aerodynamics at Audi (Oral only) <i>M. Islam, Audi AG</i>	2:40pm 3:00pm
3:00pm 3:20pm	Natural Gas: a realistic way towards ZEV (Oral only) <i>M. Ferrera, Fiat Research Center</i>	Numerical Comparison of Rolling Road Systems 2011-37-0017 <i>A. Hennig, N. Widdecke, T. Kuthada, J. Wiedemann, IVK / FKFS Univ. Stuttgart</i>	3:00pm 3:20pm
3:20am 3:40am	A Way Towards Remarkable Reduction of CO₂-Emissions In Motorsports: the CNG-Engine 2011-37-0006 <i>M. Chiodi, A. Ferrari, O. Mack, M. Bargende, IVK / FKFS-Universität Stuttgart</i>	Aerodynamics: analytical and experimental integrated development process, applied on last FGA vehicles with low environmental impact and under implementation on the new models. 2011-37-0032 <i>M. Stellato, R. Mangiantini, G. Scantamburlo, A. Bonifacino, Fiat Group Automobiles S.p.A.</i>	3:20am 3:40am
3:40am 4:00am	Heated Rapeseed Oil as a Fuel for Diesel Engines in a Low-CO₂ Hybrid-Electric Drivetrain 2011-37-0009 <i>M. Vojtisek-Lom, Czech Technical University in Prague</i>	The Aesthetics of Low Drag Vehicles 2011-37-0016 <i>G. Le Good, G L Aerodynamics & Coventry University; C. Johnson, B. Clough, Coventry University; R. Lewis, TotalSim Ltd</i>	3:40am 4:00am
4:00pm 4:20pm	<u>Discussion and Round table</u> Chairperson: <i>F. Millo</i>	<u>Discussion and Round table</u> Chairperson: <i>A. Cogotti</i>	4:00pm 4:20pm

SPECIAL EVENTS

4:20pm 4:30pm	Networking Break - Sponsored by FEV	4:20pm 4:30pm
4:30pm 5:15pm	1 st Lab Tour — GM Powertrain and Politecnico Labs Please pre-register or sign in at the registration desk	4:30pm 5:15pm
5:15pm 6:00pm	2 nd Lab Tour — GM Powertrain and Politecnico Labs Please pre-register or sign in at the registration desk	5:15pm 6:00pm
7:30pm 9:00pm	Evening Reception – Castello del Valentino, Sala delle Colonne	7:30pm 9:00pm

	<u>Hybrid Electric Powertrain – Part 1</u> Chairperson: <i>G. Cipolla, Past GM Advanced Engineering Director</i> AULA MAGNA	<u>Vehicle Concept Modeling – Part 1</u> Chairperson: <i>X. Margot, CMT-Motores Termicos, Universidad Politecnica de Valencia</i> SALA CONSIGLIO DI FACOLTÀ	
9:00am 9:20am	GM VOLTEC Technology - the Practical EV (Oral only) <i>Maurizio Cisternino, GM Powertrain</i>	Powertrain Simulation Tool 2011-37-0027 <i>A. Barak, V. Klir, L. Cervenka, Czech Technical Univ</i>	9:00am 9:20am
9:20am 9:40am	Newly Developed Toyota Plug-in Hybrid System and its Vehicle Performance 2011-37-0033 <i>T. Takaoka, M. Komatsu, B. Biebuyck, Toyota Motor Corporation</i>	A Vehicle Prototype for Powertrain and Chassis Control Systems Tests 2011-37-0028 <i>O. Avarisli, M. Velardocchia, E. Galvagno, Politecnico di Torino</i>	9:20am 9:40am
9:40am 10:00am	Robust and Safe Automotive Power Electronics: a practical case study on a hybrid vehicle (Oral only) <i>R. Groppo, Fiat Research Center; P. Leteinturier, Infineon Technologies</i>	Development of Design Assistance System 2011-37-0030 <i>S. Bogomolov, A. Mikulec, J. Macek, Czech Technical Univ. Prague</i>	9:40am 10:00am
10:00am 10:30am	Discussion and Round table Chairperson: <i>G. Cipolla</i>	Discussion and Round table Chairperson: <i>X. Margot</i>	10:00am 10:30am
10:30am 11:00am	Networking Break - Sponsored by Kistler		3:00pm 3:20pm
	<u>Hybrid Electric Powertrain – Part 2</u> Chairperson: <i>C. Malvicino</i> <i>Centro Ricerche Fiat</i> AULA MAGNA	<u>Vehicle Concept Modeling – Part 2</u> Chairperson: <i>J. Macek,</i> <i>Czech Technical Univ. Prague</i> SALA CONSIGLIO DI FACOLTÀ	
11:00am 11:20am	Future Powertrains Strategies for CO₂ Reduction (Oral only) <i>G. Cornetti, A. Greis, Robert Bosch GmbH</i>	Application and evaluation of the Eulerian-Lagrangian Spray Atomization (ELSA) model on CFD diesel spray simulations 2011-37-0029 <i>S. Hoyas, J. M. Pastor, D. Khuong-Anh, J. M. Mompó-Laborda, CMT, Universidad Politécnica de Valencia; F. Ravet, Renault</i>	11:00am 11:20am
11:20am 11:40am	Challenges and Solutions for Range Extenders – From Concept Considerations to Practical Experiences 2011-37-0019 <i>G. K. Fraidl, F. Beste, P. E. Kapus, AVL LIST GmbH; M. Korman, Graz University of Technology; B. Sifferlinger, AVL LIST GmbH; V. Benda, FEV Inc.</i>	Multi-Zone Models of Combustion and Heat Transfer Processes in SI Engines 2011-37-0024 <i>J. Hvezda, Czech Technical University</i>	11:20am 11:40am
11:40am 12:00pm	Potentials of Phlegmatization in Diesel Hybrid Electric Vehicles 2011-37-0018 <i>M. Auerbach, M. Ruf, M. Bargende, H.C. Reuss, Universität Stuttgart, IVK; R. Van Doorn, F. Wilhelm, I. Kutschera, Audi AG</i>	A modeling study of de-NOx and soot reaction phenomena in SCRF systems 2011-37-0031 <i>M. Colombo, Politecnico di Milano; G. Koltsakis, Aristotle University Thessaloniki; I. Koutoufaris, Exothermia SA</i>	11:40am 12:00pm
12:00pm 12:20pm	Hydraulic Hybrid Propulsion Systems: Compact and Cost-effective Alternative (Oral only) <i>Z. Filipi, University of Michigan</i>	A basic study on acoustic response of non-symmetric perforated duct mufflers 2011-37-0023 <i>A.J. Torregrosa, A. Broatch, N. Djordjevic, D. Moreno, CMT. Universidad Politécnica de Valencia</i>	12:00pm 12:20pm

12:20pm 12:40pm	Discussion and Round table Chairperson: <i>C.A. Malvicino</i>	Discussion and Round table Chairperson: <i>J. Macek</i>	12:20pm 12:40pm
12:40pm 2:00pm	Lunch EDISU Canteen		12:40pm 2:00pm

	<u>Hybrid Electric Powertrain – Part 3</u> Chairperson: <i>G. Cipolla, Past GM Advanced Engineering Director</i> AULA MAGNA	<u>Innovative Transmission and Energy Recovery Concepts</u> Chairperson: <i>M. Velardocchia, Politecnico di Torino</i> SALA CONSIGLIO DI FACOLTÀ	
2:00pm 2:20pm	Multi-attribute target setting using a vehicle synthesis simulation approach in the case of an electric-hybrid vehicle 2011-37-0020 <i>L. Broglia, D. Gagne, R. Meillier, LMS Imagine</i>	Hybrid Drives: Has a Kinetic System the Ability to Compete with an Electrical System? (Oral only) <i>O. Dingel, J. Ross, IAV GmbH; N. Cavina, I. Trivic, University of Bologna; M. Rioli, IEV</i>	2:00pm 2:20pm
2:20pm 2:40pm	Innovative Thermal System for Hybrid and Thermal vehicles (Oral only) <i>C. Malvicino, Centro Ricerche Fiat</i>	A Novel 2-Speed Transmission System for Electric Vehicles: Principles and Simulation Results 2011-37-0022 <i>A. Sorniotti, Univ. of Surrey; F. Viotto, S. Bertolotto, Oerlikon Graziano Drive Systems; G.L. Pilone, Univ. of Surrey</i>	2:20pm 2:40pm
2:40pm 3:00pm	Vapour Compression Heat Pump for a Fully Electrical Vehicle (Oral only) <i>W. Ferraris, C. Malvicino, Centro Ricerche Fiat</i>	Applicaton of SCADA System for Hybrid-Electric Automotive Drive Performance Analysis 2011-37-0021 <i>Z. Cerovsky, Czech Technical University, Prague</i>	2:40pm 3:00pm
3:00pm 3:30pm	Discussion and Round table Chairperson: <i>G. Cipolla</i>	Discussion and Round table Chairperson: <i>M. Velardocchia</i>	3:00pm 3:30pm
3:30pm 4:00pm	Networking Break - Sponsored by Kistler		3:30pm 4:00pm
4:00pm 4:25pm	Closing Keynote: <i>J. Perrin, Renault</i> Battery Electric Vehicle : the Affordable Zero Emission Solution from 2011		4:00pm 4:25pm
4:25pm 4:50pm	Closing Keynote : <i>P. Antonioli, General Motors Powertrain Europe</i>		4:25pm 4:50pm
4:50pm 5:00pm	Round Table and Adjournment		4:50pm 5:00pm

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