



International Conference
and Exhibition



AUTOMOTIVE POWER ELECTRONICS

06 - 07
APRIL 2011



In collaboration with

PROGRAMME



IEEE

mov'eo

Pôle de compétitivité



Yvelines
Conseil général

CONTEXT AND OBJECTIVES

SIA is launching the 4th edition of APE “Automotive Power Electronics” Conference and Exhibition.

Automotive world is facing an amazing revolution coming through power electronics, to bring a new generation of affordable green cars. APE conference is involving both communities of automotive power R&D and industry power R&D (as well as leading labs involved !) to get the best on this strategically increasing domain.

It focuses on “in-car” systems & components, dealing with all aspects of related power electronics and electrification of vehicles targeting very low CO₂ emissions.

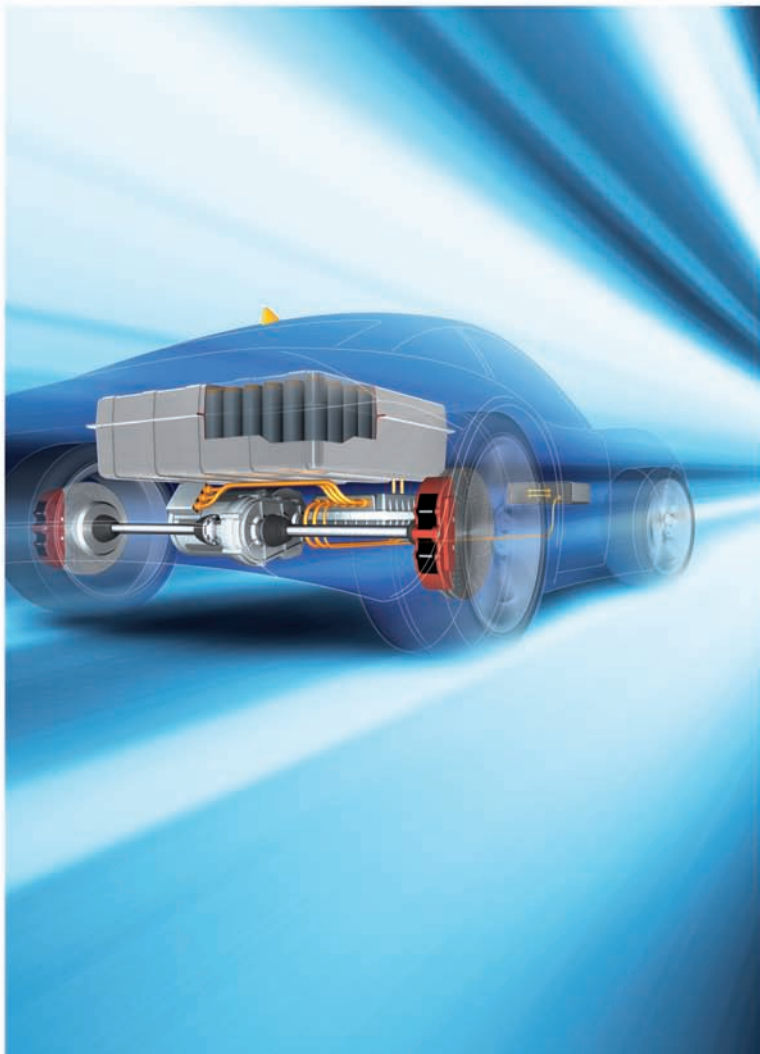
A wide range is concerned:

- Applications for passenger vehicles, buses, and light duty vehicles,
- Innovative technical / technological solutions and new dedicated development tools solutions,
- Power levels: from 100 W up to 100 KW,
- Applications for Internal Combustion Engine Vehicles (ICEV), hybrid vehicles (HV & PHEV), and electrical vehicles (EV),

Ambitious mitigation of automotive stresses: Electrical, Thermal, Chemical, Mechanical, EMC and most effective combinations of them, bringing always more reliable products.

APE offers you in one location: high level scientific and technical conferences, a unique platform for top-level engineers/researchers exchanges, and an exhibition covering a wide range of products and services in the field of automotive power electronics.

In summary, APE provides you – from labs early modeling to series processes tuning - an exclusive moment of conviviality, networking and knowledge sharing among automobile engineers and specialists in the field of world wide power electronics.



IAV - Automotive Engineering

Employing over 4,000 staff across the globe, IAV is one of the leading providers of engineering services to the automotive industry. Our core competencies include powertrain, electronics and vehicle development. As a result, we can provide our clients with production-ready solutions for the entire vehicle on a one-stop shop basis. Our clients include all major automobile manufacturers and component suppliers.

Scope of activities linked to embedded electronics:

- ▶ Electric machine
- ▶ On-board network and harness
- ▶ High and low voltage safety
- ▶ Range extender
- ▶ Energy storage system
- ▶ Energy management system
- ▶ Power electronics
- ▶ Body architecture and safety
- ▶ Instrument panel and Human-Machine-Interface
- ▶ Steering and braking system
- ▶ Suspension system
- ▶ Heating, ventilation and air-conditioning
- ▶ Integration and validation

www.iav.com



GENERAL CHAIR:

Dominique LHOTELLIER – RENAULT

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EU : *Joeri VAN MIERLO – EPE*
WD: *Rik De DONCKER – IEEE*

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About Tyco Electronics Ltd.

Tyco Electronics Ltd. is a leading global provider of engineered electronic components, network solutions, specialty products and undersea telecommunication systems, with fiscal 2009 sales of US\$10.3 billion to customers in more than 150 countries.

We design, manufacture and market products for customers in a broad array of industries including automotive; data communication systems and consumer electronics; telecommunications; aerospace, defense and marine; medical; energy; and lighting.

With approximately 7,000 engineers and worldwide manufacturing, sales and customer service capabilities, Tyco Electronics' commitment is our customers' advantage.

More information on Tyco Electronics can be found at <http://www.tycoelectronics.com/>.



About Infineon Technologies AG

Founded: 1999

Employees: ca. 25.000

Product portfolio: Semiconductors

Infineon Technologies AG, Neubiberg, Germany, offers semiconductor and system solutions addressing three central challenges to modern society: energy efficiency, mobility, and security.

Products:

- Automotive: microcontrollers, discrete/highly integrated power semiconductors, voltage regulators, sensors, power modules for hybrid and electric vehicles
- Industrial & Multimarkets: power discretes, power modules, power ICs, ASICs, RF and protection devices, microcontrollers
- Chip Card & Security: security controllers, security memory, customized chips with security functions

Presence: 28 research and development centers, 11 production sites, and about 40 sales offices in all key microelectronic markets throughout the globe.

Target markets: automotive, industrial, chip cards and security

Customers: ABB, Bosch, Cisco, Continental, Delphi, Gemalto, LG Electronics, Microsoft, Nokia, Philips, Samsung, Siemens, ZTE

Main company/production locations: Munich, Singapore, Tokyo, Milpitas/Dresden, Regensburg, Warstein, Villach, Kulim, Malacca, Batam, Wuxi.



About IAV

Employing over 4,000 staff across the globe, IAV is one of the leading providers of engineering services to the automotive industry. The company has been developing innovative concepts and technologies for future vehicle generations for over 25 years. Core competencies include production-ready solutions in all fields of electronics, powertrain and vehicle development. Clients include all of the world's premier automobile manufacturers and suppliers. In addition to development centers in Berlin, Gifhorn and Chemnitz, IAV also operates from other locations in Europe, Asia as well as North and South America.

EXHIBITION AND SPONSORING

EXHIBITION

The exhibition will allow you to show-case your company, present your latest products and create privileged contacts within this unique gathering of targeted decision-makers.

Booths may be reserved for immediate entry. This offer is limited and it is highly recommended to book your booth space as early as possible by returning the enclosed form.

6 m² fitted-out stand, including:

- Melamine partitions with aluminium structure
- 1 table + 2 chairs + 1 display rack
- 1 flag sign bearing your company's name
- 3 spotlights on a rail +1.5 kW power strip
- Conference registration for 2 people (access to the conference room, proceedings, breaks, lunches)

Booth rate: 1750 € excl. VAT

SPONSORING OFFERS

By becoming a corporate sponsor, you would gain unmatched recognition as an industry leader and generate an abundance of contacts. Consider those sponsorship opportunity.

Gold Sponsor: 10 000 € (excl. VAT)

This formula makes you the major partner of the event and provides you with an optimal visibility.

- Your company's logo on the conference web site with 10 lines about your company activities and on all the conference documents (CD of proceedings, book of abstracts).
- One page of advertising in the Book of Conference (each attendees will have one distributed)
- 5 free registrations to the congress
- 1 exhibition area of 18 sq.m
- Your company leaflet enclosed in the conference bags

Silver Sponsor: 5 000 € (excl. VAT)

- Your company's logo on the conference web site with 10 lines about your company activities and on all the conference documents (CD of proceedings, book of abstracts).
- One half-page of advertising in the Book of Conference (each attendees will have one distributed)
- 2 free invitations for the conference
- 1 exhibition area of 12 sq.m
- Your company leaflet enclosed in the conference bags

Bronze Sponsor: 2 500 € (excl. VAT)

- Your company's logo on the conference web site with 10 lines about your company activities and on all the conference documents (CD of proceedings, book of abstracts).
- 2 free invitations for the conference
- 1 exhibition area of 6 sq.m
- Your company leaflet enclosed in the conference bags

Other forms of sponsorship:

- Sponsorship of Conference Lunch or Cocktail: Please contact us
- Your company's leaflet enclosed in the conference bags: 800 € (excl. VAT)
- Cords and badges support: 1 500 € (excl. VAT)
- Memo pads and pens in the conference bag: 1 000 € (excl. VAT)

For further information on exhibition and sponsoring opportunities, please contact:


Emilie BONNET
emilie.bonnet@sia.fr
Tel: +33 (0)1 41 44 93 70

APRIL 6

- 8:30 Participants registration
- 9:00 Opening Speeches

Session 1 : OEM's vision

- 9:10 Evaluation of CO₂ emissions reduction potential and customer acceptance of Plug in Hybrid Vehicles under real life operation
R. EL CHAMMAS - TOYOTA MOTOR EUROPE
- 9:30 Lifetime Prediction of Inverters Related to the Vehicle Applications
R. PLIKAT - VOLKSWAGEN
- 9:50 Modular and Scalable Power Electronics - Key Components for Future eDrive Systems
W. WONDRAK - DAIMLER
- 10:10 Key issues for EV mass market development
P. BASTARD - RENAULT
- 10:30 Round table with session 1 speakers
- 10:45 **Break and exhibition visit**

Session 2 : Research in the US

- Keynote
- 11:15 Overview of the Advanced Power Electronics and Electric Machinery work within the USDOE Vehicle Technology Program
L. MARLINO - ORNL

Session 3 : Mechatronics integration

- Keynote
- 11:45 Higher temperature power electronics for a larger-scale mechatronics integration
B. ALLARD, C. BUTTAY, D. TOURNIER, R. REBUTEL, J-F. MIGNOTTE, P. LAMELOT, D. BERGOGNE, C. MARTIN, H. MOREL – AMPERE
B. MORILLON, PH. GODIGNON - ST Microelectronics
- 12:15 Efficient packaging, integration and cooling of soft pouch Li cells into a high value energy storage system for (P)HEV applications
J. DUHR, L. BALZANO, V. WEISGERBER, R. BEER, K. J. HAWES, D. KRUGER - DELPHI
- 12:35 Packaging in Mechatronics approach
J. PUZO - AXON
- 12:55 **Lunch and exhibition visit**
- 14:15 Random SVM control of a voltage source inverter feeding a hybrid excited synchronous machine for hybrid/electric vehicle
E. H. MILIANI, L. KEFSI, Y. TOUZANI – IFP Energies Nouvelles
M. GABSI – SATIE, ENS CACHAN
- 14:35 Shielding of Interference in Automotive Traction Grids
E. HOENE, T. NAPIERALA, A. DOMURAT-LINDE - FRAUNHOFER IZM
- 14:55 Round table with session 3 speakers

SESSION 4: Power modules

- Keynote
- 15:10 Driving e-Power toward automotive mass market acceptance
P. LETEINTURIER - INFINEON
- 15:40 Compact vehicle power electronics systems
P. NEWMAN, R. MÜHLEMANN - SEMIKRON
- 16:00 Application requirements for automotive power modules
C. CASTRO-SERRATO, T. REITER, D. GRAOVAC, A. CHRISTMANN - INFINEON
- 16:20 Custom Power under the Hood – High density IGBT module tuned to automotive mission profile
R. BREDTMAN, K. OLESEN, F. SÖHNCHEN – DANFOSS
R. EISELE - Kiel University of Applied Sciences
- 16:40 Round table with session 4 speakers
- 16:55 **Break and exhibition visit**

SESSION 5: Passives Components

- Keynote
- 17:15 Cooling to keep your Key Chips Alive
G. DIEMUNSCH - AAVID
- 17:45 Analysis on DC link filtering capacitor stress of an inverter for embedded systems
T. D. NGUYEN, N. PATIN, G. FRIEDRICH - UTC
- 18:05 DC Link Capacitor technology evolution for xEV applications
N. CHAPPAS - AVX
- 18:25 Meeting the challenge of a connector revolution
M. CUSSET - FCI
- 18:45 Round table with session 5 speakers
- 19:00 **End of the day and exhibition visit**
- 20:00 Networking dinner on the congress place

APRIL 7

SESSION 6 : Power systems

- Keynote
- 09:00 Rethink the electrical vehicle architecture
L. DE SOUSA - VALEO
- 09:30 Optimized Voltage Range for Future Electric and Hybrid-Electric Vehicles
M. KOWAL, T. BLANK, M. SENOL, R. W. DE DONCKER - ISEA
- 09:50 Limiting the overshoot on IGBT during turn-off using stray inductance
J-M. CYR, M. EL-YACOUBI – TM4
- 10:10 Break and exhibition visit
- 10:40 Analysis of current bidirectional buck-boost based automotive switch-mode audio amplifier
G. B. MAIZONAVE, M. A.E. ANDERSEN, C. KJAERGAARD, K. L. LUND, L. B. R. HANSEN - Bang & Olufsen - DTU
- 11:00 Galvanic Isolated, Bi-directional Charger for EV
M. ROSEKEIT - ISEA
- 11:20 High Efficiency Inductive Charging of EVs
Mr. LASSLOP - LASSLOP GMBH
- 11:40 A new on-board fast battery charger
B. BOUCHEZ - VALEO
- 12:00 Round table with session 6 speakers
- 12:15 Lunch and exhibition visit**

SESSION 7: Semiconductor devices

- Keynote
- 13:30 Power semiconductors for automotive applications
A. LINDEMANN - University of Magdeburg
- 14:00 MOSFETs for Start-Stop system in micro hybrid automobiles
S. RAI, A. GORGERINO - IR
- 14:20 GaN for power electronic and lighting enabled by MOCVD
F. SCHULTE, B. SCHINELLER, M. HEUKEN - AIXTRON
- 14:40 Comparison of high voltage MOSFET against IGBTs
G. VITALE - STMicroelectronics
- 15:00 Round table with session 7 speakers

SESSION 8: Reliability & testing

- Keynote
- 15:15 Robustness validation, a must in automotive power applications
W. KANERT - INFINEON
- 15:45 Control strategy to increase semiconductor lifetime within a three-phase VSI for traction applications using an induction machine
M. WECKERT, J. ROTH-STIELOW - STUTTGART UNIVERSITY
- 16:05 Cartography of full deformation fields in embedded electronic boards under thermo-mechanical load with consequences on solder joint reliability
D. N. BORZA, I. TH. NISTEA - INSA ROUEN
- 16:25 Test method to predict EOS Field returns
E. PIEARAERTS, J-L. LEFEBVRE - PRESTO
- 16:45 High Power Trench MOSFET (LFET1T) High Power Reliability Assessment (HPRA) Characterization and Temperature Monitoring
J. CHEN, G. QIN, P. KU, D. ZUPAC, W. BU, P. WANG, E. DE FRESART - Freescale
- 17:05 Round table with session 8 speakers
- 17:20 End of conference**

GENERAL INFORMATION



OFFICIAL LANGUAGE

English: no simultaneous translation



VENUE / ACCESS

La Ferme du Manet – 61 avenue du Manet
78 180 Montigny le Bretonneux
Phone +33 (0)1 30 12 30 30
www.ferme-du-manet.com

Public transportation:

RER C direction St Quentin en Yvelines
Stop at Station “Trappes”
Bus 414 (bus stop beside the station)
Bus Stop “College St François d’Assises”
(100m from the premises)

By car:

From Paris Porte de St Cloud: A13 to A12 Direction Trappes, Rambouillet till the junction between A12 and RN10. After 300 meters, turn right just before the petrol station and follow Montigny, Guyancourt, ZA de Trappes. At the first light turn right then follow the sign Ferme du Manet.

From Velizy, Créteil, Paris Pont de Sèvres through A86: After the tunnel, take the exit « Guyancourt, Voisin le Bretonneux, Montigny ». Follow the D127 ahead, till the end of the road. At the last light, turn right on the D36, direction Montigny, then follow the sign Ferme du Manet.



HOTEL ACCOMMODATION

We have selected a list of the most convenient hotels situated near the “Ferme du Manet”. Delegates are encouraged to make their own hotel reservations early, directly with the hotels of their choice.

MERCURE ***

9 place E.F Choiseul
78180 MONTIGNY LE BRETONNEUX - FRANCE
Phone: +33 (0)1 39 30 18 00
Fax : +33 (0)1 30 57 15 22
H1983@accor.com

FORMULE 1

Rue Gaston Monmousseau
78190 TRAPPES
Mail : h2339@accor.com
www.hotelformule1.com

LE RELAIS DES VOISINS

Avenue Grand Pré
78960 VOISINS LE BRETONNEUX
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CAMPANILE**

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REGISTRATION FORM

AUTOMOTIVE POWER ELECTRONICS

April 6 & 7, 2011

La Ferme du Manet - Montigny Le Bretonneux – France

REF : 2011-01

Please complete and return this form to:

SIA • 79, rue Jean-Jacques Rousseau • F-92158 Suresnes Cedex

Tel: +33 (0)1 41 44 93 70 • Fax: +33 (0)1 41 44 93 79

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Please use BLOCK CAPITALS when filling in this form

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Company: Department:

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Postcode: City: Country:

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REGISTRATION FEES (Tick as appropriate)

- 1 028.56 € VAT Incl. (860 € VAT Excl.) SIA Members
- 1 160.12 € VAT Incl. (970 € VAT Excl.) Non Members
- 580.06 € VAT Incl. (485 € VAT Excl.) Researchers, laboratories and small and medium-sized firms (under 100 employees)
- 358.80 € VAT Incl. (300 € VAT Excl.) Organizing and Technical Committee Members
- Free Speakers (1 per conference)

Preferential rates for students, group and retired – For further information, contact us

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- By check in Euros made payable to: “Société des Ingénieurs de l’Automobile”
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- American Express Diners Visa Eurocard Mastercard

I hereby authorise the organisers to charge my credit card to the amount of €

On my Card n : Expiration date :/.....

3 digit CVV or CVC number (on back of credit card): ___ ___ Cardholder’s name:

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REGISTRATION CONDITIONS

- Registration fees include participation in the conference and exhibition, CD and book of proceedings, refreshment breaks, lunches, and the dinner of the 6th.
- Where it is not possible to send the payment together with the form, each registration should be accompanied by an official purchase order. Failing reception of an official purchase order or payment on the day of the symposium, we regret that you will not be allowed entry to the symposium.
- When we have received the registration form, we will send you a confirmation letter and an invoice. Please indicate the accounts department address where necessary.
- In case of cancellation before March 6, 2011, 30% of the registration fees will be retained by the organisers. After this date, the entire registration fee will be retained. Registered participants not able to attend may nominate a substitute. Written notice must be provided.



Concepts and Products for Hybrid, Electrical and Fuel Cell Powered Vehicles

The global trend for hybrid, electrical and fuel cell powered vehicles demands technology driven solutions for energy distribution.

Tyco Electronics is a leader in next generation transportation technologies and products for hybrid and alternative powered vehicles. Our broad range of capabilities, concepts and products make us your ideal partner for complex systems engineered for hybrid and alternative powered vehicles.

Tyco Electronics' Automotive Division is supporting their customers with products for a secure power distribution in high voltage architecture net with a voltage up to 1000 volt.

Bolted ring tongue and plug/socket connection technologies applied in different power classes to fulfil the highest requirements regarding safety, shielding and tightness compiling environmental conditions.

Contact us, we have solutions!

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