Electric Mobility

eniac JOINT UNDERTAKING

ARTEMIS

Nanoelectronics and Embedded Systems for Electric Mobility

Energy Efficient Electrical E3Car

IoE Internet of Energy

POLLUX

The conference will focus on the range of opportunities and challenges that nanoelectronics and embedded systems present for electric mobility applications. It will provide a forum for collaboration amongst industry, academia, utilities, governments and institutions to understand how EV technologies integrate into current and future electric mobility systems and the electric power grid.

The conference will aim at:

- Establishing an European network of researchers focused on nanoelectronics and embedded systems for electric mobility applications,
- Cooperation among project across Europe, and discussion of the possible role of each project in supporting the European electric vehicle development.

Information:

www.e3car.eu/events/ecar_home_2011.htm

www.artemis-pollux.eu/events/ecar_home_2011.htm

European Conference on Nanoelectronics and Embedded Systems for Electric Mobility

26 - 30 September, 2011
Graz, Austria

Electric Mobility

NANOELECTRONICS
Electric Vehicles
EMBEDDED SYSTEMS

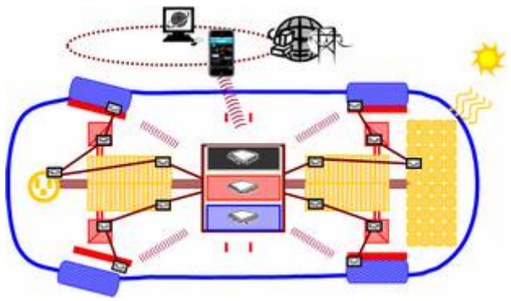
- NANOELECTRONICS TECHNOLOGIES, DEVICES, CIRCUITS ARCHITECTURES AND MODULES FOR ELECTRIC VEHICLES.
- DISTRIBUTED REAL TIME EMBEDDED SYSTEMS PLATFORM FOR NEXT GENERATION ELECTRIC VEHICLES, BY USING A COMPONENT AND PROGRAMMING-BASED DESIGN METHODOLOGY. BATTERY TECHNOLOGIES.
- CONSTRAINTS ON AND DRIVERS OF ELECTRIFICATION TO ASSESS THE FUTURE OF EV AND HEV.

The zero emission capability of the EV and the replacement of oil in the energy mix by using renewable energy sources is a challenging environmental task for the present as well as future generations. The electric vehicles technologies are currently facing several challenges amongst which are: limited driving range, high cost and overall limited efficiency. For the most part of these issues, solutions may be found on the level of the subsystems for energy storage/battery technology, power conversion, electric power train, energy management and connection to the power grid.

To provide input in this essential discussion, the Conference will be focusing on the nanoelectronics and embedded systems technologies for electric mobility applications and their impact on the future of electric vehicles and hybrid electric vehicles.

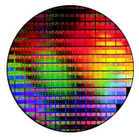
Experts from five European research and development projects (E^3Car, CASTOR, POLLUX, BATMAN and SMARTOP) addressing the electrical vehicle technologies will report about first-hand experiences and latest developments.

ELECTRIC VEHICLE RESEARCH NOVELTY AND ENERGY EFFCIENTY



ENVIRONMENT: Reduce the environmental impact of the manufacture, operation and end of life disposal of vehicles.
HEALTH: Enhance the safety of citizens, drivers, occupants and the public in the manufacture and use of vehicles.
ECONOMY: Enhance the quality and performance of vehicles while reducing life cycle cost.
SOCIETY: Enhance the economic and social benefits derived from the manufacture and use of vehicles in Europe.

Europe is targeting research on innovative electronic components and embedded systems that play a key role in electric vehicle development. Research is focusing on semiconductor components, power modules the and embedded systems that control the different functions in electric vehicles. These are used in the power train, which consumes most of the car's energy, as well as in power converters and lithium-ion batteries. The efforts are concentrated on extending the travel range per battery charge, on integrating components to make the battery, charge unit and power distribution network lighter and more compact, and on increasing the efficiency of the power converter so that as much battery charge as possible is used to drive the vehicle and is not lost through heat dissipation.



ENVIRONMENTALLY AWARE

The worldwide energy consumption is rising dramatically. In the next 20 years energy consumption will double and CO_2 emissions will rise accordingly. The consequence will be a dramatically escalating price for energy and difficult challenges for ensuring Europe's energy supply. Energy issues will become highly significant for competitiveness of the European economy and the quality of life in Europe.

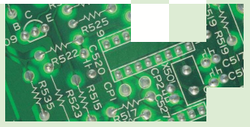
OBJECTIVES

THE INTEGRATION BETWEEN THE NANOELECTRONICS TECHNOLOGIES, ELECTRONICS HARDWARE COMPONENTS AND THE SOFTWARE INFORMATION DRIVEN FUNCTIONS, RESULTING IN INTEGRATED MECHATRONIC SYSTEMS FOR ELECTRIC VEHICLES WILL BE A MAIN RESEARCH AND DEVELOPMENT AREA IN THE NEXT FEW YEARS.

The objective of the **European Conference on Nanoelectronics and Embedded Systems for Electric Mobility** is to bring together experts from the fields of nanoelectronics semiconductor, mechatronic and embedded systems to present the recent advances made in the area, discuss the future research directions, and exchange application experience with respect to the developments in the electric mobility applications.

Experts representing several projects (**ENIAC-E^3CAR, ARTEMIS-POLLUX, ARTEMIS-Internet of Energy, ENIAC-MotorBrain**) funded by national public authorities from several countries in Europe, ARTEMIS Joint Undertaking Initiative, ENIAC and the European Commission will focus during the Conference on the nanoelectronics and embedded systems technologies developments for electric mobility applications and the impact on the future of electric and hybrid electric vehicles.

EVENT INFORMATION



VENUE

The Conference and the Workshops will take place at:

austriamicrosystems AG Headquarters
Tobelbaderstraße 30,
8141, Unterpremstätten,
Austria

GRAZ

Graz is the second-largest city in Austria, with a population of about 285,000. Some 40,000 of this population is made up of students, as Graz is home to no less than six universities (four "standard" universities and two dedicated solely to applied sciences), and is associated with names as illustrious as Johannes Kepler, Erwin Schrödinger and Nikola Tesla.

The roots of Graz can be traced back to Roman times, when a small fort was built where the city centre is today. Graz was first mentioned with its German name in 1128 when the dukes of Babenberg turned the place into a commercial centre.

ORGANISING COMMITTEE

Harald Gall, austriamicrosystems

Ovidiu Vermesan, SINTEF, Norway

Marco Ottella, CRF, Italy

Reiner John, Infineon, Germany

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www.e3car.eu/events/ecar_home_2011htm

www.artemis-pollux.eu/events/ecar_home_2011.htm