



CALL FOR PAPERS

“Automotive Power and Energy”

The Theme: From the last ten years or so, the manufacturers and large groups of the automotive sector have mobilized around the research and development of alternative clean, efficient, intelligent and environmentally friendly vehicles. Alternative fuel vehicles, hybrid electric vehicles (HEVs), plug-in hybrid electric vehicles (PHEVs), electric vehicles (EVs), fuel cell vehicles (FCVs) are among the proposed solution but all of them remain a big challenge for a wide market introduction. This is a new mutation. It is changing profoundly the vehicle, from an architecture of thermal propulsion, controllable (seen as simple) but highly polluting, to a more complex electric or hybrid traction system, not yet completely understood, the number of components (energy sources, actuators, controllers, calculators,...) becomes significant. Moreover, the multidisciplinary nature of new components and their interaction makes these systems more and more complex. In addition, lack of maturity in this area, so far the automotive industry still lacks the necessary knowledge to model, simulate and design these new vehicles. This is particularly true for new energy source devices, new actuators for the propulsion and associated electronics. This growing technological revolution will change, surely, the landscape of the automotive industry. It will, therefore, require the establishment of platforms for simulation and design. These platforms will allow mastering the process of prototyping and also, reducing the time and the cost of study and development of a prototype. Currently, the main areas of investment for vehicle manufacturers in the world, in terms of R&D, are: reducing the consumption of vehicles in order to meet new pollution standards, components and functionalities integration, including electronics and intelligence systems of the vehicle, Alternative fuel vehicles, HEVs, PHEVs, EVs, FCVs experimentation and tests from virtual and/or real models, rapid prototyping and reducing development times. The main objectives of this special section are: to focus on state-of-the-art research and development in automotive power energy, to bring the ideas of the worldwide research community into a common platform, to share the latest advances and results in automotive energy conversion systems (sources, power electronics and actuators), modelling, design, simulation tools and new applications. Topics of interest of this special section include, but are not limited to:

Power electronic converters
Design of vehicle components
Fuel cell, ultra-capacitor, batteries and flywheel storage systems
Hybridization of the energy sources (batteries, ultra capacitors, fuel cell, ...)
Control and energy optimization of traction systems
Energy storage systems and converters for electric vehicles, hybrid electric vehicles, fuel cell vehicles.

Modelling and simulation of the traction chain
Simulation tools for rapid virtual prototyping
HIL
Power electronics interfaces for hybrid energy systems
Energy management
Power electronics interfaces for hybrid energy systems
Modeling, simulation, and analysis

Manuscript Preparation and Submission

Follow the guidelines in “Information for Authors” in the IEEE Transaction on Industrial Electronics <http://tie.ieee-ies.org/tie/>
Please submit your manuscript in electronic form through Manuscript Central web site: <http://mc.manuscriptcentral.com/tie-ieee>. On the submitting page #1 in popup menu of manuscript type, select: SS on Automotive Power and Energy

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Guest Editors

Abdellatif Miraoui, System and Transportation lab (SET) and Fuel Cell lab (FCLAB) - University of Technology of Belfort Montbéliard – Rue Thierry Mieg – 90010 Belfort Cedex – France, Tel.: +33 384 58 34 10, e-mail: abdellatif.miraoui@utbm.fr

Johann W. Kolar, Power Electronics and Electrometrology Laboratory - ETH Zurich - ETL H 22 Physikstrasse 3 - 8092 Zürich – Switzerland
Tel.: +41 44 632 28 34, e-mail: kolar@lem.ee.ethz.ch

Marcello Pucci, Institute of Intelligent Systems for the Automation (ISSIA) - CNR, Palermo – Italy, Tel.: +39 6113513, e-mail: pucci@pa.issia.cnr.it

Editor-in-Chief: **Bogdan M. Wilamowski**,
tieedit@auburn.edu Tel: +1-334-844-1629

Journal Administrator: **Sandra McLain**
tieadm@auburn.edu Tel: +1-334-844-1887

Alabama Nano/Micro Science and Technology Center, Auburn University, 200 Broun Hall, AL 36849-5201, USA, Fax: +1-334-844-1888