



CALL FOR PAPERS

“Fuel cells power processing and control”

The Theme: Among renewable energy vectors, hydrogen is one of the key factors for future energy storage and production. Considerable research efforts, aimed at improving the fuel cell stack reliability and efficiency, are mainly focused on improvement of the fuel cell hearth: the anode/electrolyte/cathode assembly. Nevertheless, future fuel cell applications also need a significant research activity on power processing systems and control techniques, both for stand-alone and grid-connected applications. The former ones are gaining an increasing interest due to the high power density reached in particular by proton exchange membrane (PEM) and direct methanol (DM) fuel cells, and due to the spread of portable systems for telecommunications, remote sensing, military apparatuses, and thanks to the increasing interest in fuel cell-based vehicles, motorcycles, trains and boats. On the other side, high power fuel cells-based systems, especially involving PEM or solid oxide (SO) technologies, are becoming attractive in order to face up the grid power peaks.

The main objective of this Special Section is to bring the ideas of the worldwide research community into a common platform, to present the latest advances and developments in design, mathematical modeling, power electronics, control, computer simulation tools, and practical implementation of renewable energy systems based on fuel cells. Topics of interest include, but are not limited to:

- Power electronics for fuel cells: battery chargers, dc-to-dc converters, single and multi-stage inverters, new converter topologies for fuel cells network integration, automotive applications, portable applications, etc.
- Control of fuel cell systems
- Diagnosis of fuel cell systems
- Stand-alone and grid-connected applications
- New uses of the energy produced by fuel cells
- Non linear modeling and simulation techniques of fuel cell systems
- Hydrogen production by means of renewable energy sources and hydrogen storage

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: “Fuel cells power processing and control”.

Timetable

Deadline for manuscript submissions	December 31, 2008
Information about manuscript acceptance	June 2009
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Guest Editors

Daniel Hissel, Fuel Cell Lab, FCLAB/FEMTO-ST, University of Franche-Comté, Rue Thierry Mieg, F-90010 Belfort Cedex, FRANCE, Tel: +33 384 58 36 21, e-mail: daniel.hissel@univ-fcomte.fr

Giovanni Spagnuolo, D.I.I.E.-University of Salerno, Via Ponte Don Melillo, 84084 Fisciano (SA), ITALY, Tel: +39 089 964258, Fax: +39 089 964218, e-mail: gspagnuolo@unisa.it

Massimo Vitelli, DII-Second University of Naples, Via Roma 81031, Aversa (CE), ITALY, Tel: +39 081 5010240, Fax: +39 081 5037042, e-mail: vitelli@unina.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