

Special Section on:

Modeling, diagnosis and control of fuel cell based technologies and their integration in smart grids and automotive systems

NCREASING DEMAND on pollution reduction is driving innovation in clean energy devices. Among these, fuel cells are regarded as one of the most promising technologies, due to their efficiency, compactness and reliability. However, to achieve the widespread use of hydrogen, which is combustible, -and the resulting "hydrogen economy" -, there are critical technological issues that have to be solved in actual applications. More specifically, relevant features of fuel cell based system operation are closely related to their control and diagnosis. Control problems do not end in the classical temperature and flow regulation, since there is still a diversity of indices and performance variables to optimize, which are subject of current intense research. Moreover, on-line diagnosis and prognosis allow early fault detection and mitigation and therefore increase the lifetime, reliability and performance of the future fuel cell based smart grids and automotive systems. The main objective of this Special Section is to collect, formally present and discuss the most recent and relevant advances in control-oriented modeling and validation, system diagnosis and advanced control design of complex energy conversion systems based on fuel cells.

Editors invite original manuscripts presenting recent advances in these fields with special reference to the following topics:

- Control and system oriented modeling of complex systems based on fuel cells
- Advanced control design and embedded strategies for fuel cell based systems
- Model based and non model based diagnosis and prognosis
- ✓ Fault-tolerant control strategies of fuel cells
- Non-linear system identification and estimation applied to fuel cell systems
- Optimal design of power conversion for fuel cell vehicles

face with renewable energy sources (wind, photovoltaic, etc.) Fuel cell applications for hybrid and plug-in electric vehicles

✓ Power conversion and energy storage in the inter-

- System integration of fuel cells (e.g., in smart grids and/or micro combined heat and power devices)
- ✓ Energy management policies and supervisory strategies for stationary and automotive systems.

Manuscript Preparation and Submission

Check carefully the style of the journal described in the guidelines "Information for Authors" in the IEEE- IES web site: http://www.ieee-ies.org/publications.

Please submit your manuscript in electronic form through: https://mc.manuscriptcentral.com/tie-ieee/.

On the submitting page #1 in pop-up menu of manuscript type, select: " **SS on Modeling, Diagnosis and Control of Fuel Cells**", then upload all your manuscript files following the instructions given on the screen.

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