Special Issue

Advanced Control Strategies for Electric Power Management

Message from the Guest Editors

In the last two decades, the approach to the design of controllers for power management in electrical applications has been rapidly evolving due to the latest advancements in nonlinear control techniques for continuous and/or switched systems such as backstepping, high-order sliding mode, Lyapunov-based control approach, and model predictive control. Indeed, most electrical applications are required to function around several operating points. Therefore, the classical approach dating back to the 1940s, consisting in the adoption of proportional–integral–derivative controllers designed according to a locally linearized version of the nonlinear system, does not suffice. Advanced control strategies exploiting the nonlinear nature of switching, complex electrical systems allow for a larger operational range and for increased robustness. This methodology can be adopted in several fields related to the power management of electrical systems. As a reference, we list some topics of interest for this Special Issue:

- Electric and hybrid terrestrial vehicles;
- Power generation and distribution for electric aircraft;
- Microgrids for power sharing;
- Distribution of renewable energy.

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Energies is an international, open access journal in energy engineering and research. The journal publishes original papers, review articles, technical notes, and letters. Authors are encouraged to submit manuscripts which bridge the gaps between research, development and implementation. The journal provides a forum for information on research, innovation, and demonstration in the areas of energy conversion and conservation, the optimal use of energy resources, optimization of energy processes, mitigation of environmental pollutants, and sustainable energy systems.

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