

Special Issue on

Energy Management, Optimization, and Control of Smart Grids for a Sustainable Future

CALL FOR PAPERS

Development of integrated frameworks for energy management, optimization, and control for smart grids encountering high penetration levels of renewable energy and plug-in electric vehicles is highly required. It is expected that a more substantial fraction of the total consumed demand will be produced by renewable resources.

Moreover, with the rapidly evolving electric vehicle technologies and dropping battery costs, more vehicles are expected on the roads within the coming few years. Both renewable energy and electric vehicles impose a set of looming challenges to power grid operators. Renewable energy sources are intermittent by nature, adversely affecting the power grid unless they are augmented with energy storage. Electric vehicles can collectively represent a significant demand increase during charging, ultimately mandating wide-scale infrastructure upgrades. Infrastructure upgrades can be deferred, and the impact of vehicles can be mitigated if they are intelligently managed, and their charging/discharging process is coordinated and optimally scheduled. The solution to these challenges requires the development of a set of optimal control strategies and energy management algorithms to reliably operate the power grid considering renewable energy sources, moving as well as stationary electric vehicles and controllable loads.

This Special Issue aims to collect innovative solutions and experimental research supported by appropriate modeling and design, but also state-of-the-art studies. We welcome original research and review articles.

Potential topics include but are not limited to the following:

- ▶ Smart grids
- ▶ Grid modernization
- ▶ Energy efficiency
- ▶ Renewable energy systems (wind, solar, fuel cells, hybrid renewable energy systems, etc.)
- ▶ Energy storage systems and microgrids
- ▶ Grid integration of electric vehicles (grid impact, V2X services, etc.)
- ▶ Energy management
- ▶ Application of artificial intelligence in smart grids

Authors can submit their manuscripts through the Manuscript Tracking System at <https://review.wiley.com/submit?specialIssue=852205>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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