



CALL FOR PAPERS

IEEE Transactions on Industry Applications

SPECIAL ISSUE ON

Grid-Connected Power Electronics Systems: Stability, Power Quality, and Protection

Scheduled Publication Time: September/October 2018

Grid-connected power electronics systems have been increasingly found in Renewable Energy Sources (RESs), High-Voltage Direct-Current (HVDC) systems, Flexible Alternating Current Transmission Systems (FACTSs), Variable-Speed Drives (VSDs), and other emerging energy-efficient applications. The widespread adoption of power electronic apparatus in electrical grids brings more flexibility in power control and management, but encounters also a series of unprecedented challenges. The multi-time-scale control dynamics of power electronics systems tend to induce oscillations or resonances across a wide frequency range. The limited over-current capability and the reduced rotational inertia of power converters are further deteriorating the system protection and transient stability. Numerous research efforts have thus been made towards these challenges, ranging from hardware concepts to converter/system modeling and control strategies.

This special issue is devoted to identify the technical barriers and the latest progresses in the utility applications of power electronics systems. Prospective authors are invited to submit innovative approaches, survey papers or tutorials, for review for publication in this special issue. Topics of interest include, but are not limited to:

- New grid codes and standards for grid interconnections of power electronics systems.
- Dynamic modeling and stability analysis of grid-connected power electronics systems, ranging from distributed energy resources, electric vehicle chargers, to large-scale RES-based power plants, FACTSs, and HVDC systems.
- Advanced control strategies for improving the dynamic performance of grid-connected power converters.
- Harmonic emissions and interactions of power electronics in utility applications.
- Fault characteristics and protections of grid-connected power electronics systems.
- Stability and power quality issues in the emerging power-electronic-based power systems, such as RES-based power plants, Multi-Terminal DC (MTDC) systems, ac/dc/hybrid microgrids, electric railway systems, and data centers, etc.
- Emerging utility applications of power electronics, e.g. solid-state transformers, soft open points, electric springs, virtual synchronous machines, dc circuit breakers, active dampers, grid-edge control, etc.
- New converter/filter topologies and modulation strategies for grid-connected power electronics systems, e.g. modular multilevel converters, high-order passive filters, and optimized modulation strategies.

Authors who wish to submit a paper for consideration must submit an abstract to the Guest Editors identified below. Authors who submit an accepted abstract will receive a formal invitation with detailed instructions for submission of the complete manuscript to the IAS ScholarOne Manuscripts site and execution of the mandatory copyright transfer. All submissions will be scanned in CrossCheck for similarity with prior published material. Refer to <http://ias.ieee.org/publications.html> for general information about electronic submission through ScholarOne Manuscripts. Submit manuscripts to the Guest Editor:

Guest Editors: Xiongfei Wang, Aalborg University, Denmark, (xwa@et.aau.dk)

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Timeline

Call for Papers	May 15, 2017
Submission of Manuscripts for Review in SIM	October 15, 2017
Final Decision	June 15, 2018
Submission of Final Files for Approved Papers	July 15, 2018
Publication of Special Issue of IAS Transactions	September/October 2018

Please note that IAS “presentation first” policy is not applicable. Therefore, original material not yet presented at IAS sponsored conference is also accepted.