



CALL FOR PAPERS

Journal of Modern Power Systems and Clean Energy

Special Section on Applications of Power Electronics in Power Systems

Power transformers and steam turbines were the key drivers in the development of the AC power system paradigm at the dawn of the XXth century, characterized by huge synchronous generators feeding millions of passive loads through large interconnected systems, all of them supervised and controlled from a centralized EMS. In the same way, thyristor valves and IGBTs, introduced in the seventies and nineties of the past century, respectively, are called to play a similar role in the decarbonized power systems of the XXIst century, where distributed generators will compete with centralized ones to deliver mostly renewable energy to smarter loads through more flexible and hybrid (i.e., AC-DC) networks, operated in a hierarchical and partly distributed fashion with the help of ubiquitous digital technologies.

Power electronics first appeared in transmission power systems in the form of HVDC lines, and soon after as static var compensators (SVC), whose terrific success and reliability quickly led to a whole and growing family of FACTS devices. Later on, power electronics also entered the distribution business arena, in the form of active filters, DFACTS for voltage regulation, interface for renewable sources, etc. Nowadays, power electronics, particularly the successful Voltage Source Converter (VSC) building block, has become an indispensable component of modern power systems, where multi-terminal DC grids will complement or supersede existing point-to-point HVDC lines, and renewable generators (mostly asynchronous, with low or null mechanical inertia) will replace conventional fossil-fuel generators faster than expected.

This special section aims at addressing the way power electronics will help facing the big challenges arising in this upcoming paradigm, in terms of both power infrastructure (grid-related and converters architectures) and “intelligence” (supervision and control of AC-DC transmission and distribution systems), in order to keep current standards of efficiency and reliability. We invite original submissions dealing with applications of power electronics in this context. The emphasis should be preferably put on the system-wide perspective rather than the technological details of individual devices.

The topics of interest include, but are not limited to:

- Applications related to transmission systems:
 - FACTS for improving transient or voltage stability, damping oscillations, controlling power flows to reduce power loops or increase the effectiveness of transmission corridors.
 - Multi-terminal DC systems focusing on integration of bulk renewable energy systems, optimal network topology, interaction with the AC grid and novel short-circuit protection schemes.

- Advanced control algorithms including hierarchical and distributed approaches applied at this level.
- Applications related to distribution systems:
 - MV/LV DFACTS for improving power quality, power flow control, voltage regulation, balancing and reconfiguration.
 - Mixed AC/DC distribution systems.
 - Advanced secondary substations involving custom power electronic devices.
 - Microgrid interfaces.
 - Efficient integration of charging stations for electric vehicles.
- Applications related to smart integration of renewable generation and storage systems:
 - Centralized and distributed approaches.
 - Advanced coordinated control algorithms with minimal communication infrastructure.

Submission Guidelines

<http://www.editorialmanager.com/mpce> or link via
<http://www.springer.com/40565>
<http://www.mpce.info>

The article templates can be downloaded from <http://www.mpce.info>

Important Dates

Paper Submission Deadline: ~~February 28, 2017~~ extended to **March 15, 2017**
 Acceptance Notification: **June, 2017**
 Date of Publication: **July, 2017**

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MPCE sponsored by State Grid Electric Power Research Institute (SGEPRI) is open accessed, peer-reviewed and bimonthly published journal in English. It is indexed in Science Citation Index Expanded (SCIE), Scopus, Google Scholar, CSAD, DOAJ, CSA, OCLC, SCImago, ProQuest, etc. It is the first international power engineering journal originated in mainland China. MPCE publishes original papers, short letters and review articles in the field of modern power systems with focus on smart grid technology and renewable energy integration, etc. MPCE is dedicated to presenting top-level academic achievements in the fields of modern power systems and clean energy by international researchers and engineers, and endeavors to serve as a bridge between Chinese and global researchers in the power industry. It is published by SGEPRI Press and Springer-Verlag GmbH Berlin Heidelberg commencing from June, 2013.