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Guest Editorial
Special Section on Contemporary Issues in Power Quality

POWER Quality (PQ) in electric power systems is of significant relevance to customers, equipment manufacturers, network service providers and the like, including regulators. Together with the well known issues associated with power quality, new challenges and opportunities continue to emerge due to a number of reasons including: increasing power levels of new types of generating sources while demanding optimal use of existing infrastructure and associated power electronic interfaces with the grid, the need for enhanced power quality measurement and analysis techniques in order to better understand prevailing power quality levels in networks that are being transformed, increasing capabilities of PQ monitoring devices which provide large volumes of data that need summarisation to extract useful information.

The aim of this special issue is to present original research which is aimed at addressing some of these new challenges and opportunities. The expectation of this special issue is that it will provide pathways for further research that is aimed at managing power quality in future electricity networks.

As a response to the call for papers, 207 extended abstracts were received from which 99 full papers were approved for review. The 22 papers selected for publication in this special section cover: power quality aspects associated with solar photovoltaic systems and low voltage networks supplying electric vehicles, modelling and analysis of grid connected power electronic interfaces and loads and associated power quality issues, a new flickermeter accounting for different lamp technologies, a novel electric arc furnace model that can be used for flicker propagation studies, gapless power quality disturbance recording, harmonic mitigation methods and active power filter placement, voltage sag characterisation and case studies covering existing harmonic levels in public low voltage networks and power quality monitoring and reporting.

We wish to sincerely thank all authors who have helped to make this special issue a success and the following Guest Editors who managed the paper review process:

- Professor Gary Chang, National Chung Cheng University, Taiwan
- Professor Mack Grady, Baylor University, USA
- Professor Nelson Kagan, University of São Paulo, Brazil
- Dr. Chester Li, Hydro One Networks Inc., Canada
- Professor Igor Papič, University of Ljubljana, Slovenia
- Professor Alfredo Testa, University of Campania, “Luigi Vanvitelli”, Italy

We also wish to sincerely thank: Professor Wilsun Xu, Editor-in-Chief for ongoing guidance and support and the Editorial Assistants, Ms. Cheryl Koster and Ms. Kristen Capaldo for providing timely technical support.

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CALL FOR PAPERS
IEEE Transactions on Power Delivery
Special Section on
“Contemporary Issues in Power Quality”

Power Quality (PQ) is an important characteristic of electric power systems related to customers, equipment manufacturers, network service providers and the like including regulators. In recent years, new challenges and opportunities in power quality management have emerged due to several key developments in power systems. These include: (1) increased penetration of distributed generation systems such as wind and photovoltaic farms and the need for optimal utilization of the existing infrastructure; (2) disturbances caused by the proliferation of power electronic driven loads including the associated distributed nature of harmonic emission and high frequency concerns; (3) increased capabilities of PQ monitoring devices together with powerful communication infrastructure such as the availability of GPS time stamped data and increased data storage capabilities; (4) opportunities for utilizing PQ disturbance data for advanced power system monitoring such as incipient fault detection and equipment condition monitoring. These and other developments will no doubt demand improved guidelines and standards to ensure electromagnetic compatibility in the power system. This special section is aimed at exchanging thought-provoking novel research outcomes and ideas that will support the development of future electricity grids from PQ perspectives.

Topics of interest for this issue will include, but not limited to:

- Power quality concerns in transmission and distribution networks caused by loads and distributed energy sources interfaced through power electronic interfaces
- Power quality of large scale renewable generating sources: compliance assessment, standards, propagation, mitigation
- Management of power quality: power quality limits, impact of new device/equipment technologies on emission and immunity limits, development of new installation and network standards
- Power quality data collection, storage, and analysis; indices, reporting and benchmarking methodologies
- Advanced monitoring of power quality and state estimation exploiting the capabilities of real time data acquisition, synchronized measurement, and gapless recording
- Power quality data analytics to extract useful information for the purpose of equipment condition monitoring such as detection of incipient faults,
- Power quality data interchange using IEEE PQDIF, IEEE COMTRADE, IEEE C37.118.1 synchrophasors, IEC 61850, and other smart grid standards
- Innovative solutions to real life industry PQ problems
- Techno-economic aspects of power quality
- Advanced modeling and simulation techniques for power quality studies
SUBMISSION GUIDELINES:

This special issue solicits original work that must not be under consideration for publication in other venues. Two-page extended abstracts are solicited for the first round of reviews. Authors of selected abstracts will be invited to submit the full papers in the second round. The format of extended abstract is the same as the Power Engineering Letter (PESL). Submit the extended abstract including a cover letter with author contact information to Guest Co-Editor-in-Chief Sarath Perera (sarath@uow.edu.au) directly.

Important Dates:

May 31, 2015: Submission of extended abstracts
July 15, 2015: Completion of abstract reviews
September 30: Deadline for full paper submission
January 31, 2016: Final decision
February 29, 2016: Publication material due

Guest Editorial Board

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