



CALL FOR PAPERS



IEEE Transactions on Industry Applications

Special Issue on

Multilevel Converter applications in the area of Renewable Energy, More Electric Propulsion, Electric Vehicles and Power Grid integration

Penetration of grid connected Multilevel Converter (MC) and Hybrid Multilevel Converter (HMC) circuits with electric vehicles are rapidly increasing due to industrial loads and renewable energy sources integrations. The mitigation of harmonics generation from converters and different grid conditions (e.g., stiff, weak, unbalanced voltages or current) is of essence.

Over the last decade, multilevel converters and their derived topologies, such as Hybrid MCs (HMC) have gained significant attention in both academia and industry, as they are well suited for medium- and high-power applications. This is because they allow higher voltage/power ratings, offer lower total harmonics distortion, and power losses when compared to conventional two-level converters. However, these converters require proper modulation and control for their safe operation and optimal performance.

Challenges are arising when applying HMCs to grid connected systems, Electric Vehicles, FACTS and microgrid/hybrid microgrid, where distributed renewable energy source are interconnected. MC and HMC technologies are promising solution for “more electric ship”, “more electric aircraft” and “more hybrid/electric vehicles”, power grid connection, and renewable energy integration applications.

The objective of this special issue is to identify, address and disseminate state-of-the-art research works on MC and HMC technologies as applied to the above fields. The guest editorial team solicits original research papers with novel contributions in all the above aspects.

Topics of interest include, but are not limited to:

- New configurations for Multilevel Converters with reduced power component modules, power quality problems, and Harmonic standards (SVC, STATCOM, FACTS applications).
- New pulse-width modulation strategies and fault tolerant control schemes for grid connected system.
- Compensation of homopolar components and new space vector modulation schemes.
- Design, modeling, and control of multiphase multilevel converter configuration.
- Schemes to solve voltage unbalancing with grid tied MC's and voltage boosting configurations.
- Modular Multilevel Converter (MMC) and Hybrid Multilevel Converter (HMC) Configuration for Electrical Vehicle and Grid Connected Applications.
- Hybrid renewable energy management using MMC and HMC
- Electrical safety engineering of electrical and electronic equipment with Multilevel Converters.

Submission Guidelines

Authors who wish to submit a paper for consideration must submit an extended abstract (2-page, free format, PDF version) to Prof. P. Sanjeevikumar 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. Refer to <http://www.ias.org> for general information about electronic submission through ScholarOne Manuscripts. Manuscripts submitted for this Special Issue will be reviewed separately and will be handled by a Guest Editorial Board.

Important Deadlines (Tentative)

- 31-December-2019: Deadline for extended abstract submission.
- 11-February-2020: Deadline for notification to invite full paper submissions.
- 10-March-2020: Deadline for full paper submission for review in S1M.
- 8-September-2020: Deadline for notification of final decision.
- 6-October-2020: Deadline for submission of Final Files in S1M.
- Jan/Feb 2021: Publication on the IA Transactions.

Guest Editors-in-Chief:

- Prof. P. Sanjeevikumar, Department of *Energy Technology*, Aalborg University, Denmark. san@et.aau.dk.
- Prof. Massimo Mitolo, *School of Integrated Design, Engineering and Automation*, Irvine Valley College, California, USA.

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