

Call for Papers

IEEE Journal of Emerging and Selected Topics in Power Electronics Special Issue on Topologies, Modeling Methodologies and Control Techniques for High-Frequency Power Conversion, 2019

Scheduled Publication Date: June 2020

The study of power converters operated at greatly increased switching frequencies compared to conventional practice poses rather unique and transverse challenges to the designer. Dc-dc converters operating in the MHz-to-several tens of MHz range, as well as inverters and rectifiers operated at or above several hundreds of kHz, represent an open research field for what concerns their design, comparison, modeling, power loss analysis, and control strategy. Strictly connected to these aspects is the formulation of dedicated methodologies for an accurate power loss breakdown of the converter, which involves the characterization, modeling and simulation of both active and passive components. Analog, digital or mixed-signal control solutions and gate driving techniques for high-frequency converters also pose dedicated challenges if the dynamic performances of the converter are expected to scale with its switching rate. In applications targeting an integrated or semi-integrated implementation, where pure switched-capacitor or hybrid switched-capacitor converters may represent attractive solutions, an accurate assessment of achievable performances in terms of efficiency and area utilization involves non-trivial investigations when high switching rates are used. Prospective authors are invited to submit original contributions, survey papers or tutorials, for review for publication in this special issue. Application-oriented contributions are particularly welcome. Topics of interest include, but are not limited to:

- Innovative dc-dc, dc-ac and ac-dc topologies for efficient high-frequency power conversion
- High-frequency switched-capacitor and hybrid switched-capacitor converters, discrete or integrated
- Characterization of active and passive components for high-frequency applications
- Modeling methodologies for high-frequency converters, including dynamical modeling and accurate power loss characterization
- Control solutions (analog, digital or mixed-signal) and gate driving techniques for high-frequency converters
- EMI and reliability related issues in high-frequency converters and their applications

All manuscripts must be submitted through Manuscript Central at <http://mc.manuscriptcentral.com/jestpe-ieee>. Submissions must be clearly marked "Special Issue on Topologies, Modeling Methodologies and Control Techniques for High-Frequency Power Conversion, 2019" on the cover page. When uploading your paper, please select your manuscript type "Special Issue." Refer to <http://www.pels.org> for general information about electronic submission through Manuscript Central. Manuscripts submitted for the special issue will be reviewed separately and will be handled by the guest editorial board noted below.

Deadline for Submission of Manuscripts: July 15, 2019

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Proposed Timeline:

- January 31, 2019 Call for Papers to IEEE JESTPE Editorial Office
- July 15, 2019 Manuscript Submission Deadline
- January 15, 2020 Acceptance Notification
- April 1, 2020 Manuscripts Forwarded to IEEE for Publication
- June 2020 Special Issue Appears in IEEE JESTPE