

Call for Papers
IEEE Journal of Emerging and Selected Topics in Power Electronics
Special Issue on Power Converters and Control Techniques for Very Fast Response
Applications, 2020

Scheduled Publication Date: June 2020

Efficient power converters able to change their output voltage in the microsecond scale and beyond play a major role in very fast response (VFR) applications: these include dynamic voltage scaling in microprocessors and integrated circuits, envelope tracking techniques in audio and communication systems, visible light communication, high-frequency AC inverters/generators, wireless power, pulsed loads, etc.

Current trends in VFR converters are twofold: first, operation at high switching frequency (MHz range) naturally allows faster response and higher bandwidth. Second, novel circuit topologies, architectures and control techniques can enable faster dynamics at lower switching frequencies, making it easier to achieve high efficiencies. In both cases many challenges arise around the converter design: frequency-dependent loss mechanisms in active and passive devices, influence of parasitic elements, design of low-loss reactive components capable of operating at high frequencies, optimal utilization of wide band-gap power devices, implementation of adequate control circuitry (analog, digital or mixed-signal), design of high-bandwidth control loops, etc. Therefore, VFR applications are a fertile ground for innovative circuit design solutions and technological advances to keep up with ever-increasing requirements.

The main objective of this Special Issue is to collect the latest developments in power converters, technologies and control techniques for VFR applications. Prospective authors are invited to submit original contributions for review and for publication in this Special Issue. Topics of interest included, but are not limited to:

- Innovative topologies: soft-switching techniques, resonant converters, switch-capacitor converters and hybrid switched-capacitor converters.
- Novel architectures: multiphase converters, multilevel converters, modular converters, etc.
- Modelling and simulation with emphasis on system-level approach.
- Novel control strategies and high bandwidth control loop design.
- Magnetic design and new capacitor technologies.
- Optimal utilization of wide band-gap power devices.

All manuscripts must be submitted through Manuscript Central at <http://mc.manuscriptcentral.com/jestpe-ieee>. Submissions must be clearly marked "Special Issue Power Converters and Control Techniques for Very Fast Response Applications, 2020" 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, 15th 2019

Guest Editors: Diego G. Lamar (gonzalezdiego@uniovi.es), University of Oviedo (Spain).
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Proposed Timeline:

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