

Special Section on:

# High-Frequency High-Voltage-Conversion-Ratio DC/DC Converters

Recently, high-frequency power electronics technology has developed rapidly, which helps to improve power density and dynamic response. Among high-frequency DC/DC converters, the high-frequency high-voltage-conversion-ratio DC/DC converters are widely adopted in many emerging applications such as in PV systems, data-center power systems, EV charging systems and so on, which helps to reduce the number of power conversion stages in either high step-up or high step-down situations. For example, in data-center power systems, high step-down converters are proposed to convert voltage directly from 48V to 1V or even from 400V to 1V, which can take place by a multi-stage conversion structure. Similar requirements exist in many other applications, such as PV or fuel cell, and DC building power system. For these applications, many converters have been investigated, namely impedance source DC/DC converters, coupled inductor DC/DC converters, switched capacitor/tank converters, etc. However, many technical issues come with these methods, such as large voltage or current stress, low system efficiency, large input or output ripple and so on. Until now, there is still huge room for performance improvement in high-frequency high-voltage-conversion-ratio DC/DC systems. Thus, this special issue intends to foster the latest research and demonstrate emerging topics in topologies and applications of this type of converters.

We encourage all researchers working in this area to submit papers to this Special Section. Topics of interest include, but are not limited to:

- ✓ **Isolated topology of high-frequency high-voltage-conversion-ratio DC/DC converters**
- ✓ **Non-isolated topology of high-frequency high-voltage-conversion-ratio DC/DC converters**
- ✓ **Modeling of high-frequency high-voltage-conversion-ratio DC/DC converters**
- ✓ **Control of high-frequency high-voltage-conversion-ratio DC/DC converters**
- ✓ **Very high-frequency approach**
- ✓ **Application of high-performance wide band-gap devices (GaN and SiC)**
- ✓ **Magnetic components design methods**
- ✓ **Optimal layout and heat dissipation characteristics improvement**
- ✓ **Scalable high-voltage-conversion-ratio DC/DC converters**
- ✓ **Wide input or output range applications.**

## Manuscript Preparation and Submission

Check carefully the style of the journal described in the guidelines “Information for Authors” in the IEEE- IES website: <http://www.ieee-ies.org/pubs/jestie>. Please submit your manuscript in electronic form through: <https://mc.manuscriptcentral.com/jestie-ieee/>.

On the submitting page, in pop-up menu of manuscript type, select: “**SS on High-Frequency High-Voltage-Conversion-Ratio DC/DC Converters**”, then upload all your manuscript files following the instructions.

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### Timetable

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**Jan 31, 2021**

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