



Call for Papers

IEEE Journal of Emerging and Selected Topics in Power Electronics

Special Issue on Power Electronics and Drive Systems for Aviation Electrification

In response to the urgent need to achieve global net zero emissions by 2050, as outlined in the COP26 summit, the transportation sector is undergoing a significant transformation towards electrification. While electrification in the automotive industry has seen rapid progress, the aviation industry is accelerating its efforts to achieve net zero emissions by embracing electric propulsion systems. Electric propulsion promises reduced emissions, noise, and operating costs compared to traditional combustion engines. Power electronics and drives play a key role in enabling the efficient and reliable operation of electric propulsion systems for aviation. To support this critical transition towards net-zero aviation, innovative technologies and a skilled workforce are critical. Therefore, this special issue aims to gather cutting-edge research and developments in the field of power electronics and drives, especially topics related to aviation electric propulsion. This special issue will provide a platform for researchers, engineers, policymakers, and stakeholders to share the latest developments in power electronics technologies for aerospace applications. We invite original contributions addressing various aspects of power electronics and drives relevant to aviation applications.

Please note that the primary focus of JESTPE is on power electronics. Therefore, submitted papers must incorporate significant content related to power electronics. Additionally, experimental verification is mandatory for all submissions. Papers lacking experimental verification may be deemed out of the scope of this journal. Topics of interest include, but are not limited to:

- Advanced power electronic converters for aviation electric propulsion systems
- Thermal management techniques for power electronics in aircraft applications
- Integration of energy storage systems with electric propulsion in aircraft
- Power electronics architectures for hybrid-electric aircraft
- Novel materials and components for aviation power electronics
- Electrical machines for aviation electric propulsion
- Electrical power distribution systems in aviation
- Control strategies for electric propulsion drives in aviation.
- Fault diagnosis and prognosis in aviation electric propulsion systems
- Electromagnetic compatibility (EMC) considerations for aviation power electronics
- System-level optimization of power electronics and drives for aviation applications
- Testing and validation methodologies for aviation electric propulsion systems
- Electric Drive Train for aircraft
- Energy management systems for aircraft electrification

All submissions should be made through *Manuscript Central* at <http://mc.manuscriptcentral.com/jestpe-ieee>. The cover page should be clearly marked with "Special Issue on Power Electronics and Drives Systems for Aviation Electric Propulsion" and the appropriate manuscript type should be selected when uploading the submission. Manuscripts submitted for this special issue will be handled by the guest editorial board outlined below. For more information on special issues and electronic submissions, please go to <http://www.ieee-pels.org/publications/jestpe>.

Deadline for Submission of Manuscript: **Aug 30, 2024**

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- **Regine Mallwitz** (Technische Universität Braunschweig, Germany)
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- **Philippe Lasserre** (DEEP Concept, France)
- **Habibu Hussaini** (University of Nottingham, UK)
- **Yue Cao** (Oregon State University, USA)

Proposed Timeline

- **May 15, 2024:** Call for papers to IEEE JESTPE Editorial Office
- **Aug 30, 2024:** Manuscript submission deadline
- **Nov 30, 2025:** Final acceptance notification
- **Dec 31, 2025:** Manuscript forwarded to IEEE for publication
- **Mar 2025:** Special Issue appears in IEEE JESTPE