Call for Papers

Special Section on Electrical Machine Systems in More/All Electric Aircraft

The More Electric Aircraft (MEA)/All Electric Aircraft (AEA) system is being widely recognized as the future for the aerospace industry to meet the power demands of increasing electric loads, reducing aircraft emissions, improving fuel economy, and lowering the cost of the total system. Although MEA/AEA architecture offers significant overall system benefits in high reliability, improved fuel efficiency, and reduced emissions, the MEA/AEA concept imposes increasing demands on the electrical machines and their control system. More electrical machine systems are engaged in this aviation invention. And electrical machines are the critical components used in MEA/AEA, such as generators, electromechanical actuators (EMAs), electrohydraulic actuators (EHAs), electric propulsion, air compressors and fuel pumps, etc. High power density electric machines are the enabling technologies for the successful advancement of MEA/AEA, and there are still a number of areas where improvements must be made in terms of the reliability, rated power, dynamic performance, volume, cost and environmental suitability of systems.

This Special Section aims to bring to together researchers and practitioners from industry, research laboratories, academia and government to present the challenges and opportunities related to Electrical Machine Systems in MEA/AEA. Topics of interest include, but are not limited to:

- Generators: starter/generators, high speed generators, multi-stage alternators, etc.
- EMA/EHA motors: high dynamic motors, high power density motors, high integration actuators, etc.
- Electric propulsion motors: high torque density motors, high efficiency motors, high rated power motors, etc.
- Air compressor and fuel pump motors: high speed motors, high temperature motors, etc.
- High reliability electrical machines: redundant electrical machines, fault tolerant electrical machines, etc.
- Electrical machine controls: intelligent control, artificial intelligence (AI) control, fault diagnosis, etc.
- Power semiconductors: wide bandgap power devices, characterization, gate drives, etc.
- Power converters: topologies, modeling and control, etc.
- Thermal models of electrical machines and power converters
- Thermal management of electrical machines and power converters
- Relevant simulation techniques for electrical machines and power converters: co-simulation, multi-domain simulation and hardware-in-the-loop simulation, etc.
- Special electrical machine topologies and their control technologies

Contact the deputy editor-in-chief if your manuscript is not within the listed topics, as papers within the general topic of electrical machine systems are all welcome by the CES TEMS.

Brief guideline for authors:

Papers styles:

1. Review articles.
2. Original research.
3. Rapid communications.

All manuscripts must be submitted through Manuscript Central at https://mc03.manuscriptcentral.com/tems. Submissions must be clearly marked ***"SS: Electrical Machine Systems in More/All Electric Aircraft"*** on the cover page. When uploading your paper, please select your manuscript type "Special Issue." Refer to http://www.cestems.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.

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Topics of the CES TEMS include but are not limited to electrical machine topologies and designs, field analysis, motor drives, motion control and servo systems, power electronics and power converters, EMI and EMC techniques, renewable energies, xEV and other electrified transportation techniques, applications of new materials, and many others related to the electrical machines and systems.

The CES TEMS is an open-access journal, currently with no publication charge applied to the authors. Published papers will be included in the IEEE Xplore. Inclusion in other globally recognized data base such as the Web of Science (SCI) is under arrangement.

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