

THE JOURNAL OF ENGINEERING

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Special Section: Advances in Rotating Electrical Machines: Topologies, Materials & Applications

Recent governmental policy decisions addressing key global challenges such as climate change and energy security have initiated a new wave of research in the field of rotating electrical machines. While innovations in rotating electrical machines cannot directly solve these global challenges, the machines are set to play a key role within the technology such as that will enable significant energy and CO₂ savings and, in turn, assist in securing a long term sustainable energy situation. Highlights of these technologies are high efficiency domestic appliances, electrified vehicles & aircraft and wind power generation. In addition to the identified grand challenges, it is the case that electrical machines are experiencing an ever expanding range of deployment, in many instances, the expanding remit of rotating electrical machines is in novel and extreme environment applications; here the boundaries of conventional design rules are continually being pushed forward, which again, requires innovation and novelty from the global machine design community.

This Special Section will provide an opportunity for researchers and professionals in both academia and industry from all over the globe to present their recent research and development activities in the field of rotating electrical machines. We welcome both original research and review articles that discuss any insights or technological advancements in new topologies, new materials, new control algorithms or new applications. The section is mainly dedicated to the design and analysis of novel electrical machines, providing a survey of those latest developments whilst simultaneously showcasing the latest exciting applications of rotating electrical machines that may benefit from those advancements. Submissions to this section should be clearly novel or innovative in design, application or in adoption of material. However, the editorial board does welcome any submission that has a clear argument for inclusion in Advances in Rotating Electrical Machines that does not exactly fit the defined submission criteria.

Particular topics of interest include, but are not limited to:

- Novel 'magnet-free' machine topologies and configurations (switched and synchronous reluctance)
- Novel permanent magnet and permanent magnet-assisted machine topologies and configurations
- Unconventional machine topologies and materials – eg. homopolar machines
- Application of emerging permanent magnet materials
- Highly integrated motor/generator-drive
- Application of new and emerging materials to improve electromagnetic, thermal and mechanical design aspects
- Electrical machines in extreme environment and novel applications
- Advances in superconducting electrical machines
- Innovative manufacturing techniques
- New cooling strategies

All submissions are subject to the journal's peer-review procedures. The authors should follow the journal's Author Guide at <http://digital-library.theiet.org/journals/joe/author-guide> and indicate clearly that the paper is submitted to the Special Section on Advances in Rotating Electrical Machines: Topologies, Materials & Applications. All submissions will be screened by the Section Editor and Guest Editors to ensure an appropriate match to the theme of the Special Section, but submissions not meeting the criterion can still be considered for inclusion as a regular article in the Journal.

Important dates:

Submission deadline:
31 May 2017

Publication date:
Nov 2017

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All papers must be submitted through the journal's Manuscript Central system:

<http://mc.manuscriptcentral.com/iet-joe>

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