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Special Session on

High-Torque-Density Electrical Machines

Organized and co-chaired by:

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Call for Papers

Torque density represents the output torque capability of an electrical machine in a given space envelope and having a specific weight. It is an important measure of machine performance, sometimes is regarded as the primary design consideration for wind generators, marine propulsion motors, servo motors, aviation motors, etc. During the last few decades, researchers have done a lot of work on improving the torque density of electrical machines, such as advanced cooling method, superconducting wires, hairpin winding, new magnetic materials, integrated electric powertrain, etc. Besides, some high-torque-density machine topologies have also been introduced and gained lots of attention, such as vernier machine, flux switching machine, transverse flux machine, etc. However, due to the ever-increasing demands of machine torque density, we are facing more and more challenges in high-torque-density electrical machine design, e.g. strong multi-physics coupling, rich harmonic contents, low power factor, high manufacturing difficulty, etc. Hence, more efforts are needed in both academia and industry to solve the design issues of high-torque-density electrical machines.

The objective of this Special Session is to provide a forum so that researchers worldwide can share their research findings and discuss the future developments in the field of high-torque-density electrical machines. Manuscripts with both theoretical and practical/experimental results are warmly welcome.

For this Special Session on high-torque-density electrical machines, topics of interest include, but are not limited to:

- Topological investigation
- Application of new materials
- Design and optimization
- Solutions to mechanical challenges
- Integrated powertrain solutions
- Manufacturing techniques and technologies implemented
- Prototype and demonstrations

Submission of papers: deadline follows the deadline for the regular papers.

All the instructions for paper submission are included in the conference website:

<http://www.icem.cc/2022>