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## Special Session on Sustainable Electric Drives for E-mobility

Organized and co-chaired by

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### Call for Papers

Net Zero Emissions target by 2050 is the key to enable ever increasing demand of electric powertrain systems in transportation application. Considering the efficiency benefit, excessive use of rare earth elements and copper is introducing supply risks. Reducing overall greenhouse gas emission requires proper research and development of sustainable design of electric drive unit that consider every stage of its life cycle. These includes evaluate availability, collecting and processing of the raw materials, manufacturability, usability, and re-cyclability. To cope with sustainable target, alternative materials need to be used that has relatively lower environmental load or lower poisonous substance emission during processing and at the same time provide higher efficiency of the drive unit component as well as the system. It can be obtained in many ways such as increasing the overall efficiency, reducing loss, material reduction by using innovative cooling, material circularity, reuse of additional heat generated from motor or converter. This special session aims at collecting contributions of authors from both academia and industry working in the field of sustainable electric drives for e-mobility.

Topics of interest include, but are not limited to:

- Motor design without rare earth elements.
- Maximize system efficiency by coupled design optimization.
- Efficient multiphysics simulation.
- Electric drive unit design that increases level of recyclability.
- Sustainable insulation system design and material.
- Innovation in manufacturing processes focusing on sustainability/recyclability.

Submission of papers: paper submission follows the rules of regular papers. All the instructions for paper submission are included in the conference website

<https://icem.cc/2024>