



Special Session on
Condition Monitoring of Permanent Magnet Machines for Renewables

Special Session Organizers:

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Technical Outline of the Session and Topics:

Permanent Magnet (PM) machines have become critical components of various renewables applications. They are extensively met in electric transportation as motors and generators in the wind, tidal, and wave energy harvesting. Due to their critical role in such a vast number of applications, the prompt and early fault diagnosis becomes necessary to prevent irreparable machine damage, financial losses, and a compromise between safety and reliability. The scope of this Special Session includes but is not limited to the topics below:

- Condition monitoring, fault diagnosis, and prognosis of PM machines for renewables
- Degradation and aging of PM machine components
- Demagnetization, eccentricity, and stator inter-turn fault detection and fault severity estimation
- Advanced signal processing for condition monitoring of PM machines
- Identification and discrimination between different fault conditions
- Avoidance of false positive and negative diagnostic alarms
- Fault-tolerant mechanisms
- PMAC Drives reliability.