IEEE Journal of Emerging and Selected Topics in Industrial Electronics

Special Section on:

Advanced Fault Modeling, Characterization and Diagnosis in Electric Vehicle Powertrain Components and Systems

Vehicles (EVs) have been receiving increasing research and development interest in recent years to resolve environmental issues caused by the conventional internal combustion engine (ICE) vehicle. Electric vehicles are propelled by their powertrain system with electric motors, power converters, energy sources and the associated control and monitoring systems. These electric powertrain components used for traction application endure different transients and aging effects due to its continuous severe duty operation. Undoubtedly, safety and reliability are of utmost importance in the electric vehicle powertrain components and systems. Hence, it is imperative to investigate and address various faults in the electric vehicle powertrain components and systems. This special section aims to bring together researchers and practitioners from industry, academia and government to present the advanced modeling, monitoring and control techniques related to faults in electric vehicle powertrain components and systems.

We encourage all researchers working in this area to submit papers to this Special Section. Topics of interest include, but are not limited to:

- ✓ **Machine learning based fault diagnosis and prognosis techniques for electric motors and drives**
- ✓ **Reliability and stability assessment of power converters**
- ✓ **Active thermal control strategies for power electronic converters**
- ✓ **Failure prediction of power electronic components and passive components**
- ✓ **Different fault modeling and characterization for the electric powertrain components, e.g. machines and drive**
- ✓ **Condition monitoring for electric motors and drives**
- ✓ **State of health monitoring for EV powertrain system**
- ✓ **Degradation and remaining useful lifetime estimations**
- ✓ **Fault isolation and fault tolerant control in drives**
- ✓ **Classifications of multiple faults in EV powertrain components and system**
- ✓ **New sensing techniques for fault detection and monitoring**
- ✓ **Multi-sensor fusion for fault diagnosis of EV powertrain system and components**
- ✓ **New electric machine and power converter design for better fault tolerance**
- ✓ **Electric machine fault emulation and testing methods**

Manuscript Preparation and Submission

Check carefully the style of the journal described in the guidelines "Information for Authors" in the IEEE- IES website: http://www.ieee-ies.org/pubs/jestie. Please submit your manuscript in electronic form through: https://mc.manuscriptcentral.com/jestie-ieee/.

On the submitting page, in pop-up menu of manuscript type, select: "**SS on Advanced Fault Modeling, Characterization and Diagnosis in Electric Vehicle Powertrain Components and Systems**", then upload all your manuscript files following the instructions.

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Timetable

Deadline for manuscript submissions:	Information about manuscript acceptance:	Publication Date:
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