

Technical Track List

1. Condition Monitoring of Induction Machines

- Detection of broken rotor bars in induction motors under oscillating load through bidimensional entropy and time-frequency maps
- A Novel Methodology for the Reliable Detection of Static and Dynamic Eccentricity in Induction Motors via Frequency Isolation in the Stray Flux
- Wireless Sensor-embedded Leakage Flux and Vibration Measurement for Diagnosis of Electrical and Mechanical Faults in Induction Motors
- Multiphysics model for induction machine bearing fault diagnosis by stator current analysis
- Induction Motor Bearing Fault Diagnosis with Machine Learning Enhanced Empirical Mode Decomposition
- Comparative study of two different analytical techniques for computing inductance mutual inductance matrix in induction machines for fault diagnosis purposes

2. Fault Diagnostics and Fault Tolerance in Motor Drives

- Power Switches Short-Circuit Faults Tolerant Converter for a Four-Phase Switched Reluctance Motor Drive
- Fault Signature Sensitivity based on Residues for Interturn Short Circuit fault in PMSMs
- A Hybrid Fault Detection and Identification Method for Current Sensor Faults in PMSM Drives
- Open Circuit and Short Circuit Fault Diagnosis Method for 5-Level Hybrid T-Type ANPC-FC Inverter Using Artificial Neural Networks
- Rotor Interturn Faults in an Industrial Synchronous Machine Caused by an Stator Ground Fault
- Eccentricity Fault Diagnostic in Hexagon- and Double-Delta-Connected Symmetrical Six-Phase Induction Motors

3. Condition Monitoring of Synchronous Machines

- A Universal Diagnostic Strategy for Direct-Drive Permanent Magnet Generator Faults by Novel Sensing of Stator and Rotor Magnetic Fields
- Electromagnetomechanical Analysis and Harmonic Generation of DOL PM Motors Suffering from Low Severity Inter-Turn Short Circuit Faults

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- Thyristor Rectifier-Embedded Identification of Field Winding, Damper Bar, and Eccentricity Faults in Interturn Fault Detection in Permanent Magnet Synchronous Machines via Instantaneous Symmetrical Component Currents
- Detailed Digital Model for Behavior Analysis and Synthetic Data Generation of a Permanent Magnet Synchronous Machine
- Analysis and Diagnosis of ITSC in Dual Rotor Air-Cored PMSG- Parallel Connected Stator Coils

4. Performance, Degradation and Ageing of Materials

- DC Dielectric Strength Evaluation of Motor Winding Insulation for Aerospace Applications
- Comparison of Parameters for Characterization of Insulation Material Ageing During Lifetime Based on Voltage and Temperature
- A Comparative Study of Dielectric Strength between MV Underground Cable and MMEI Cable for Envisaged Wide-Body All-Electric Aircraft
- Comparison of Electric Field Suppression Techniques in (U)WBG Power Modules Under Unipolar and Bipolar Square Voltages at Varying High Frequencies
- Impedance Sweep Frequency Response Analysis for the In-Situ Inspection of Induction Motors with Distributed Stator Winding
- High-Frequency Numerical Modelling for Impedance Frequency Response in Electrical Machine Stator Coil – A Comparative Study

5. Machine AI and statistical learning methods for fault detection in electrical machines and drives

- Predictive Fault Diagnosis Inter-Turn Short Circuit PM Motor based on Machine Learning Algorithms for Elevator Applications
- Classification of Induction Motor Rotor Faults Using Graph Convolutional Neural Networks and Non-Intrusive Condition Monitoring Signals
- A Neuro-Fuzzy Approach for Broken Rotor Bar Fault Prediction in Induction Motors via Current Spectrum Analysis
- Machine Learning-Based Detection of Inter-Turn Short-Circuit Faults in Synchronous Machines Using Stray Flux Time-Domain Analysis
- Convolutional Neural Networks and Thresholding Approaches for Single and Multi-Sensor Detection of Partial Discharges in Electrical Machines
- Beta-Variational Autoencoder for Intern-Turn Short Circuit Fault Diagnosis in Dual Three-Phase Synchronous Motors

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6. Condition Monitoring and Fault tolerance in Power Electronics

- Online Diagnosis of Open-Circuit Switching Faults in Multiport Solid-State Transformers
- Parameter Estimation of a 5-Level Hybrid ANPC Using Ant Colony Algorithm
- Robust Current Sensor Fault Tolerant Control of an Interleaved DC-DC Converter Based on EDSMO with MFPC
- Detection and Identification of Switching Faults in Boost Converters Using an HSVG Sensing Circuit
- Machine Learning (ML)-Based Fault Detection Strategy for Power Switches in Electric Mobility
- Experimental Investigation of Parallel Connected SiC Power Devices during Active Short Circuit Eventz

7. Condition Monitoring of Induction Machines

- Wideband Frequency-Based Diagnosis for Sensitive State Estimation of Turn-Insulation Degradation in Inverter-Driven Machines
- Induction motor Low Frequency Torque Oscillation diagnostics through Circuit Breaker acquisitions
- Impact of inaccurate motor data on bearing current simulations
- Multiple Principle Component Statistics for Bearing Condition Monitoring
- Determination of Motor Capacitances for Bearing Current and EMI Analysis in Variable Speed Drives

8. Fault Diagnostics and Fault Tolerance in Motor Drives -2

- Thermal and Electrical Performance of Multilayer, Multifunctional Electrical Insulated Cylindrical and Cuboid Cables in Wide Body All-Electric Aircraft
- A Switchable 100% Stator-Ground Detection, Localization, and Severity Estimation Method for Permanent Magnet Synchronous Machines
- The Impact of Inter-Turn Short Circuit Location Change on the Diagnostics Efficiency of a Multipole

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- Evaluation of the Applicability of Frequency Response Analysis to Rotating Electric Machines
- Proposal for acceleration levels for antifriction bearings

9. Condition monitoring and fault tolerance in Power Electronics and Storage

- Ground Fault Detection and Location Method for AC/DC/DC Converters with Supercapacitor Systems
- Fuel cell performance prediction under variable conditions based on Extended Kalman Filter and Random Forests
- Design of experiments methodology applied to satellites lithium batteries aging modeling
- A Novel Method for Fault Detection and Location in Supercapacitor Cells

10. AI and Signal Processing Techniques for Fault Detection in Electrical Machines and Drives

- Simulation-to-Reality Domain Adaptation for Motor Fault Detection
- Early Anomaly Detection in Wind Turbine Generators Using SCADA Data
- Application of Signal Decomposition Methods for Axial Flux PMSM Demagnetization Feature Extraction and Fault Diagnosis
- Reinforcement Learning-Based Fault-Tolerant Control for Open Switch Fault Diagnosis in Dual Active Bridge DC-DC Converters