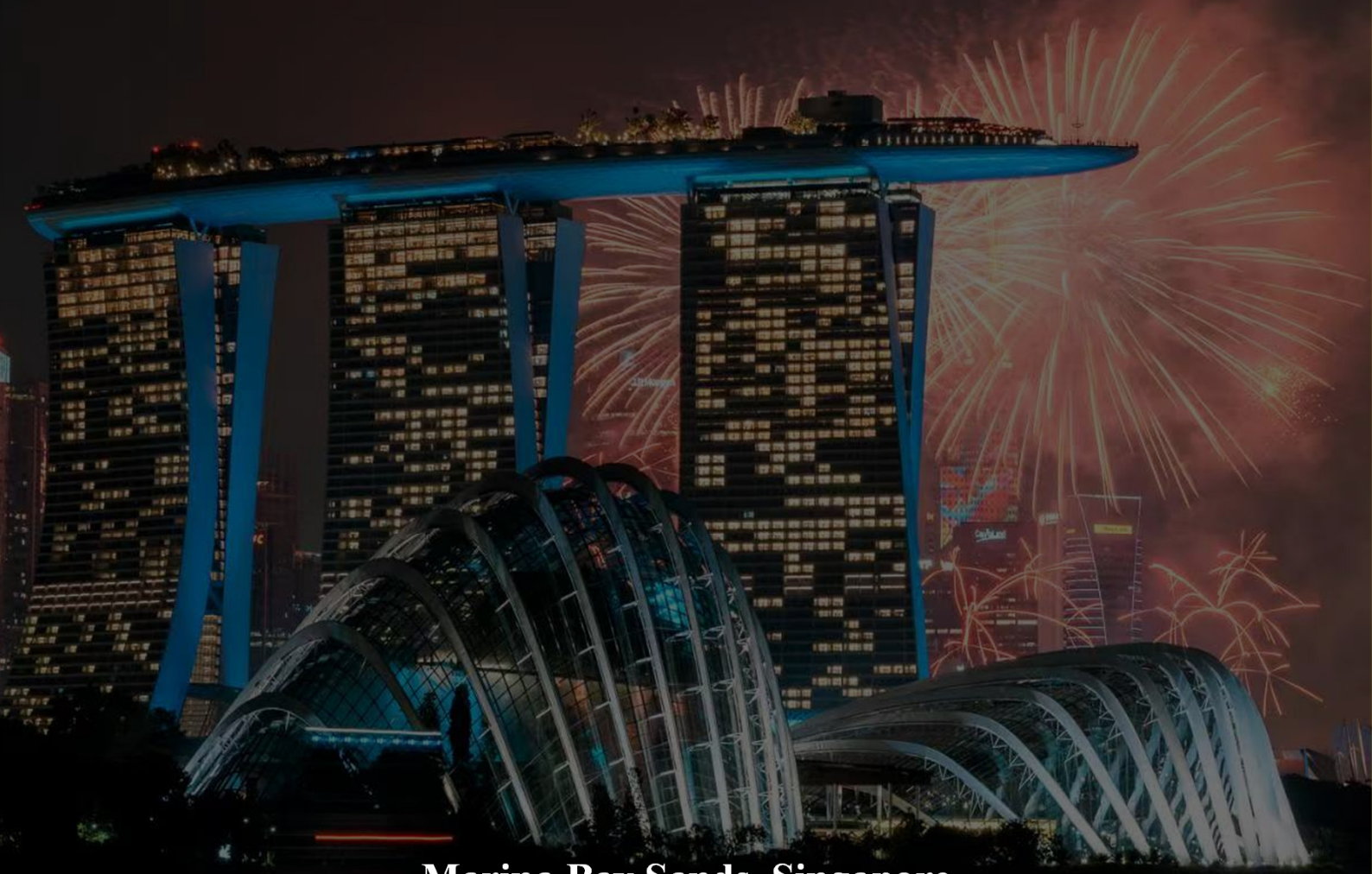


The 29th International Conference on Electrical Machines and Systems



ICEMS 2026

November 24-27



Marina Bay Sands, Singapore

Conference Agenda

SESSION TIMETABLE

November 24 (Tuesday) - Tutorials

AM	Grand Room
8.00	Registration
9:00-11:00	Tutorial Sessions Tutorial 1: Prof. Tianran He Tutorial 2: Dr. Jonathan Hey Tutorial 3: Prof. Shangjian Dai
11:00-11:30	Coffee break
11:30-12:30	Tutorial Sessions (Continued) Tutorial 1: Prof. Tianran He Tutorial 2: Dr. Jonathan Hey Tutorial 3: Prof. Shangjian Dai
13:30-15:30	Tutorial Sessions Tutorial 4: Prof. Zhenbin Zhang Tutorial 5: Prof. Dong Jiang Tutorial 6: Prof. Ronghai Qu
15:30-16:00	Coffee break
16:00-17:00	Tutorial Sessions (Continued) Tutorial 4: Prof. Zhenbin Zhang Tutorial 5: Prof. Dong Jiang Tutorial 6: Prof. Ronghai Qu
17:00-19.00	Welcome Reception
Tutorial 1	Recent Advances in Humanoid Robot Joint Modules: Electromechanical Design, Drive Systems, and Thermal Management
Tutorial 2	Model-Based Design for Electric Drives: From High-Fidelity Modeling to Embedded Deployment
Tutorial 3	Advanced Modelling, Control and Parameter Estimation for High-Speed PMSM Drives
Tutorial 4	Encoderless Control of AC Drives: Concepts, Recent Developments, and Realistic Expectations
Tutorial 5	Power Electronics Converters for Open-winding Motor Drives
Tutorial 6	Theory, Topology and Design of Flux Modulation Permanent Magnet Machines

November 25 (Wednesday) - Keynotes

AM	Grand Room
8.00	Registration
9:00-9:20	Opening Ceremony
9:20-10:00 10:00-10:40	Keynotes Keynote 1: Prof. Ayman M. El-Refaie Keynote 2: Prof. Zi Qiang Zhu Chair:
10:40-11:10	Coffee break
11:10-11:50 11:50-12:30 12:30-13:10	Keynotes Keynote 3: Prof. Akshay Rathore Keynote 4: Prof. Kyo-Beum Lee Keynote 5: Dr.-Ing. Akeshi Takahashi Chair:
13:10-14:10	Lunch

November 25 (Wednesday) - Oral Presentations

PM	Room Number			
	Room 1	Room 2	Room 3	Room 4
14:10-16:10	Industry Session	OS1-1 High-Speed Electrical Machines	OS2-1 Sensorless PMSM Drives I	OS2-2 DC/DC Converters I
16:10-16:30	Coffee break			
16:30-18:30	OS1-2 Axial-Flux & High-Torque-Density Machines	OS1-3 Advanced PM Machine Design	OS2-4 Predictive Current Control & MPC I	OS2-5 Wide-Bandgap Devices & Gate Drives I
	Room 5	Room 6	Room 7	Room 8
14:10-16:10	OS2-3 Observer-Based Motor Control & Estimation	OS3-1 Renewable Energy Forecasting, Diagnosis & Control	OSS-1 Special Session A-1	OSS-2 Special Session C-1
16:10-16:30	Coffee break			
16:30-18:30	OS2-6 Induction & Synchronous Machine Drives	OS3-2 Smart Grids & Microgrids	OSS-3 Special Session B-1	OSS-4 Special Session D

November 25 (Wednesday) - Poster Presentations

PM	Room Number
	Poster Venue
14:10-16:10	PS 1 Electrical Machines and Field Analysis
16:10-16:30	Coffee break
16:30-18:30	PS 2 Special Sessions A, B, F, H

Special Session A: Advanced Control Strategies for High-Performance Motor Drives in Emerging Electrified Transportation

Special Session B: Design and Control of High-Reliability Electric Machine System

Special Session F: Design, Analysis and Thermal Management of Electrical Machines for eVTOL Propulsion

Special Session H: Design and Control of High-Performance Flux-Modulated Machines for Advanced Electric Drive Systems

November 26 (Thursday) - Oral Presentations

AM	Room Number			
	Room 1	Room 2	Room 3	Room 4
8:30-10:30	OS1-4 Thermal Analysis & Cooling I	OS1-5 Winding Technologies & Manufacturing I	OS2-7 PMSM Drive Control I	OS2-8 Wide-Bandgap Devices & Gate Drives II
10:30-10:50	Coffee break			
10:50-12:50	OS1-6 Magnetic Material Modeling and Applications	OS1-7 Electromagnetic Field Modeling	OS2-10 Parameter Identification & State Observers I	OS2-11 DC/DC Converters II
	Room 5	Room 6	Room 7	Room 8
8:30-10:30	OS2-9 Multilevel & AC/DC Converters	OS3-3 Energy Storage & Fuel Cells	OSS-5 Special Session H	OSS-6 Special Session C-2
10:30-10:50	Coffee break			
10:50-12:50	OS2-12 EV Charging & Transportation Power Electronics	OS3-4 Power System Stability, Protection & Control	OSS-7 Special Session B-2	OSS-8 Special Session E
12:50-13:50	Lunch			

November 26 (Thursday) - Poster Presentations

AM	Room Number
	Poster Venue
8:30-10:30	PS 3 Power Electronics and Motor Drives
10:30-10:50	Coffee break
10:50-12:50	PS 4 Electrical Machines and Field Analysis
12:50-13:50	Lunch

November 26 (Thursday) - Oral Presentations

PM	Room Number			
	Room 1	Room 2	Room 3	Room 4
13:50-15:50	OS1-8 AI-Assisted Machine Design & Optimization I	OS1-9 Reluctance & Special AC Machines	OS2-13 Sensorless Control & Drive Optimization II	OS2-14 Grid-Forming & Grid-Connected Converters
15:50-16:10	Coffee break			
16:10-18:10	OS1-10 Vibration, Noise & Electro-magnetic Forces	OS1-11 Faults, Reliability & Insulation	OS1-12 AI-Assisted Machine Design & Optimization II	OS2-16 Predictive Current Control & MPC II
	Room 5	Room 6	Room 7	Room 8
13:50-15:50	OS2-15 Fault-Tolerant & Reliable Motor Drives	OS3-5 AI-Based Fault Diagnosis & Device Monitoring	OSS-9 Special Session C-3	OSS-10 Special Session A-2
15:50-16:10	Coffee break			
16:10-18:10	OS2-17 Energy Storage & Generator Control	OS2-18 Emerging Power Conversion & Drive Technologies	OS1-13 Advanced Machine Analysis & Emerging Concepts	OSS-11 Special Session K

November 26 (Thursday) - Poster Presentations

PM	Room Number
	Poster Venue
13:50-15:50	PS 5 Energy Systems and AI Convergence
15:50-16:10	Coffee break
16:10-18:10	PS 6 Power Electronics and Motor Drives

November 26 (Thursday) - Banquet

PM	Room Number
	Marina Bay Sands
18:30-21:00	Banquet

November 27 (Friday) - Oral Presentations

AM	Room Number			
	Room 1	Room 2	Room 3	Room 4
8:30-10:30	OS1-14 Winding Technologies & Manufacturing II	OS1-15 Thermal & Multiphysics Analysis	OS1-16 Linear & Special Machines I	OS2-19 PMSM Drive Control II
10:30-10:50	Coffee break			
10:50-12:50	OS1-17 Linear & Special Machines II	OS1-18 Flux-Control, Vernier & Special Machines	OS3-6 Energy Management, EVs & Data-Driven Optimization	OS2-22 Parameter Identification & State Observers II
	Room 5	Room 6	Room 7	Room 8
8:30-10:30	OS2-20 Multiphase & Multi-Motor Drives	OS2-21 Reluctance & Bearingless Motor Drives	OSS-12 Special Session F	OSS-13 Special Session I
10:30-10:50	Coffee break			
10:50-12:50	OS2-23 Servo & Motion Control	OS2-24 PWM, Modulation & Harmonic Control	OSS-14 Special Session G	OSS-15 Special Session J
12:50-14:00	Award & Closing Ceremony (including lunch)			

November 27 (Friday) - Poster presentations

AM	Room Number
	Poster Venue
8:30-10:30	PS 7 Special Sessions C, D, G, I, J, K
10:30-10:50	Coffee break
10:50-12:50	PS 8 Electrical Machines and Field Analysis
Special Session C:	Design and analysis of high torque/power density permanent magnet synchronous machines
Special Session D:	Application of AI for Design Optimization and Control of Electrical Machines
Special Session G:	Advanced Topology, Control and Optimization of Power Converter Systems in Transportation Electrification
Special Session I:	Advanced Design and Control of Multiphase and Multi-Winding Electric Machines
Special Session J:	Emerging Topologies and Sensorless Drive Technologies for High-Performance Permanent Magnet Machines
Special Session K:	Advanced Wireless Power Transfer for Intelligent Electrified and Autonomous Systems

November 28-30 (Saturday - Monday)



**2026 IEEE 9th Student Conference on
Electric Machines and Systems
(SCEMS)**

**Nanyang
Technological
University,
Singapore**

ORAL SESSION

WEDNESDAY, NOVEMBER 25

Room 1

Industry Session

Chair

Topics

ORAL SESSION

WEDNESDAY, NOVEMBER 25

Room 2

OS1-1: High-Speed Electrical Machines

Chairs

- 14:10-14:27**
TEMS-0188 **Adaptive Online Learning Process for Multi-Objective Optimization of Ultra-High-Speed Motors for Electric Turbochargers**
Nakazawa, Ryusho; Omura, Naoki; Sato, Yoshio
IHI Corporation
- 14:27-14:44**
TEMS-0710 **Design and Torque Quantization of a Novel Consequent-Pole PM Machine with a Hybrid Rotor Sequence and Flux Barriers**
Zhang, Qiyun; Wang, Jiyao; Xu, Wei
Southeast University
- 14:44-15:01**
TEMS-0546 **Circulating Current Reduction in High-Speed SRMs with Intra-Phase Parallel Coil Connection**
Xu, Wenyi; Kiyota, Kyohei
Institute of Science Tokyo
- 15:01-15:18**
TEMS-0952 **Efficiency Improvement of High-Speed SR Motor Using Amorphous Alloy**
Fujikawa, Shota; Iwaki, Keigo; Nakamura, Kenji
Tohoku University
- 15:18-15:35**
TEMS-1105 **Electromagnetic Design and Optimization of a New Type of High-Speed Axial Flux Interior Permanent Magnet Synchronous Motor**
Zhou, Zhou; Geng, Weiwei; Wang, Yu
Nanjing University of Science and Technology
- 15:35-15:52**
TEMS-0589 **Evaluation of 6-Slot/4-Pole and 6-Slot/2-Pole Permanent Magnet Bearingless Motors for Ultra-High-Speed Applications Under Wide Air-Gap and DC-Link Voltage Constraints**
Kaewngam, Natthanicha; Benjasupattananan, Sasiwimon; Srichiangsa, Theeraphong
Kasetsart University
- 15:52-16:10**
TEMS-0881 **Design Guideline of Advanced Manufacturing-Based Distributed Needle Windings for High Speed Electric Vehicle Traction Motors**
Wang, Wenting; Zou, Tianjie; Jiang, Jianan; Gerada, David; Degano, Michele; Gerada, Chris
Zhejiang University

ORAL SESSION

WEDNESDAY, NOVEMBER 25

Room 3

OS2-1: Sensorless PMSM Drives I

Chairs

- 14:10-14:27** **A Full-Speed-Range Sensorless Control Without Signal Injection for IPMSMs Based on FCS-MPC**
TEMS-0671
Wang, Bokang; Zhang, Yongchang
North China Electric Power University
- 14:27-14:44** **Current Ripple Suppression for Multi-Sampled Motors Based on High-Frequency Feature Extraction**
TEMS-0060
Feng, Pengbo; Liang, Ziyi; Gui, Xianguo
Harbin Institute of Technology
- 14:44-15:01** **Dual-Axis Pseudorandom Frequency Injection Strategy for Sensorless Control of IPMSM Considering Cross-Coupling Effect and Audible Noise**
TEMS-0832
Zhang, Boyan; Du, Jinhua; Song, Cheng; Zhang, Guoqiang; Xu, Geping
Xi'an Jiaotong University
- 15:01-15:18** **Electromechanical Characteristic Identification of Servo System Based on Open Loop Injection**
TEMS-0863
Zhao, Junyu; Zhang, Meiyu; Xu, ZheXi; Xu, Dianguo
Harbin Institute of Technology
- 15:18-15:35** **A Dual Improved Adaptive Extended Kalman Filter for Online Multi-Parameter Identification of PMSMs Under Rank Deficiency**
TEMS-0387
Bai, Xun; Liu, Jiayi; Cao, Jiwei; Li, Liyi
Harbin Institute of Technology
- 15:35-15:52** **Position Estimation Error Suppression Strategy for Electrolytic Capacitorless PMSM Drives Based on Grid-Angle-Assisted ADALINE**
TEMS-1067
Chen, Yuanyang; Ding, Dawei; Zhang, Guoqiang; Wang, Gaolin; Xu, Dianguo
Harbin Institute of Technology
- 15:52-16:10** **Signal-Injection-Free Ripple-Based Parameter Identification for PMSMs With Optimal Switching-Cycle Interval Selection**
TEMS-0736
Hu, Botao; Gan, Chun; Ren, Haotian; Zhang, Chong; Qu, Ronghai
Huazhong University of Science and Technology

ORAL SESSION

WEDNESDAY, NOVEMBER 25

Room 4

OS2-2: DC/DC Converters I

Chairs

- 14:10-14:27** **A Cyber-Resilient Control Framework for Dual Active Bridge Converters via Estimation-Based Threat Detection in CAN Bus**
TEMS-0899
Chowdhury, Sayantan; Kumar, Amritesh; Bhattacharjee, Chayan
National Institute of Technology Silchar
- 14:27-14:44** **Efficiency Improvement of a Bi-directional CLLC Converter for ESS and 380V DC Bus under Light-load Conditions**
TEMS-1174
Lotkham, Kunakorn; Tanjaroen, Wason; Supatti, Uthane
Kasetsart University
- 14:44-15:01** **A Model-Assisted ESO Design for LADRC of Two-Stage LLC Resonant Converters With Second-Harmonic Ripple Suppression**
TEMS-0111
Luo, Xinghong; Yao, Xuliang; Wang, Jingfang; Zou, Tianjie; Wang, Meiqi; Li, Ying
Harbin Engineering University
- 15:01-15:18** **An Input Ripple Compensation Method for Boost Converters**
TEMS-1140
Liu, Zhiqiang; Gao, Congzhe
Beijing Institute of Technology
- 15:18-15:35** **Dual-Time-Scale Active Damping Control for Resonance Suppression in Hydrostatic Spindles**
TEMS-0061
Liang, Ziyi; Feng, Pengbo; Gui, Xianguo
Harbin Institute of Technology
- 15:35-15:52** **Dynamic Performance Improvement of a Four-Switch Buck-Boost Converter via Soft Actor-Critic-Based Reinforcement Learning Control**
TEMS-0945
Ye, Jian; Sun, XiaoTeng; Chen, GuanFan; Pan, Xuewei
Harbin Institute of Technology, Shenzhen
- 15:52-16:10** **Fast Communication Between Offshore Converter and Wind Turbines During DC Fault Ride-Through in Offshore VSC-HVDC Systems**
TEMS-1132
Wang, Baiting; Wang, Wentao; Yang, Zebin; Han, Jingchen; Wang, Xuehua; Ruan, Xinbo
Huazhong University of Science and Technology

ORAL SESSION

WEDNESDAY, NOVEMBER 25

Room 5

OS2-3: Observer-Based Motor Control & Estimation

Chairs

- 14:10-14:30** **An Improved Rotor Position Estimation Scheme for Switched Reluctance Motors**
TEMS-0718
Chen, Maotang; Wang, Chao; Wang, Huijun
Beihang University
- 14:30-14:50** **Sensorless Control for SLP-DSLIM Based on STSMO With SOGI and ESO-PLL**
TEMS-0199
Chen, Yingke; Xu, Wei; Liao, Kaiju; Jiang, Yajie; Zhang, Maoxin; Tang, Yirong
State Key Laboratory of High Density Electromagnetic Power and Systems, Institute of Electrical Engineering, Chinese Academy of Sciences
- 14:50-15:10** **Direct Torque Control Strategy for PMSM Based on a Self-Correcting Flux Observer**
TEMS-0719
Ma, Hongjun; Huang, Wenxin
Nanjing University of Aeronautics and Astronautics
- 15:10-15:30** **Electrical-Angle-Domain Observer-Based DC-Offset Suppression for PMSM Rotor Position Estimation Using Embedded Linear Hall Sensors**
TEMS-0401
Zhang, Junlin; Hua, Wei; Zhang, Chao
Southeast University
- 15:30-15:50** **Online Flux Linkage Calibration for Sensorless Control of SRM Based on Lumped Disturbance Extraction Across Dual Switching State**
TEMS-0738
Jiang, Zijun; Gan, Chun; Ren, Haotian; Zhang, Chong; Gao, Chengkun; Qu, Ronghai
Huazhong University of Science and Technology
- 15:50-16:10** **An Integrated Rotor Temperature Estimation Method for PMSMs Combining Flux Observation and Data-Driven Compensation**
TEMS-0531
Yu, Chaoran; Ma, Zhixun; Huang, Jian; Rachmildha, Tri
Tongji University

ORAL SESSION

WEDNESDAY, NOVEMBER 25

Room 6

OS3-1: Renewable Energy Forecasting, Diagnosis & Control

Chairs

- 14:10-14:27** **A Causality-Enhanced Forecasting Framework for Day-Ahead Wind Farm Cluster Power Forecasting**
TEMS-0892
Yang, Mao; Huang, Yutong; Guo, Yunfeng; Wang, Tiancheng
Northeast Electric Power University
- 14:27-14:44** **Wind Power Forecasting Using a Gated Multi-Expert Network Considering Extreme Weather Events**
TEMS-0416
Yang, Mao; Jiang, Renxian; Guo, Yunfeng; Zhang, Ao; Su, Xin
Northeast Electric Power University
- 14:44-15:01** **A Spatio-Temporal Dynamic Network-Based Method for SCADA Sensor Fault Diagnosis of Wind Turbines**
TEMS-0608
Fang, Ruiming
Huaqiao University
- 15:01-15:18** **An Adaptive Voltage Droop Control Method of DFIG Wind Farm for Improving Frequency Support Duration**
TEMS-0434
Wang, Zhongxing; Yi, Chuanzhuo; Zhang, Ao; Zhang, Xueguang
Harbin Institute of Technology
- 15:18-15:35** **Multi-Meteorological Factor Knowledge Distillation Dynamic Graph Convolutional Network for Photovoltaic Cluster Power Forecasting**
TEMS-0156
Yang, Mao; Jiang, Yuxi; Huang, Yutong; Jia, Mengqi; Su, Xin
Northeast Electric Power University
- 15:35-15:52** **Robust Enhanced CCS-MPC for PMSG-Based Wind Energy Conversion System under Parameter Uncertainty**
TEMS-0969
Devi, Aribam Deleena; Saikia, Lalit Chandra
National Institute of Technology Silchar
- 15:52-16:10** **A GIS-Based Suitability Analysis Framework for Siting Solar Energy-Assisted Charging Stations: A Case Study in Rayong, Thailand**
TEMS-1112
Farungsang, Linux; Siangsano, Apinya; Phattanasak, Matheepot
Modern Automotive and Automation System Technology (MATA), Technopark, KMUTNB, Bangkok, Thailand

ORAL SESSION

WEDNESDAY, NOVEMBER 25

Room 7

OSS-1:

Special Session A-1: Advanced Control Strategies for High-Performance Motor Drives in Emerging Electrified Transportation

Chairs

- 14:10-14:30**
TEMS-0167 **Model-Free Predictive Current Control with ADALINE-Based Variable Control Gain for PMSMs**
Zang, Yonghang; Wang, Bing; Zhou, Fobao; Yin, Zhenxiao; Wang, Xueyan; Zhou, Song; Xing, Boyang; Zhao, Hang
The Hong Kong University of Science and Technology (Guangzhou)
- 14:30-14:50**
TEMS-1149 **Speed Fluctuation Suppression Based on Adaptive Magnetization Current Trajectory for Asymmetric-Rotor-Pole Variable Flux Memory Machines**
Zhang, Jiamou; Liu, Wei; Cao, Haiyang; Wan, Hongyu; Chen, Jinhua; Zhang, Chi
Ningbo Institute Of Materials Technology And Engineering, Chinese Academy of Sciences
- 14:50-15:10**
TEMS-0377 **Torque Performance Optimization of Doubly Salient Electromagnetic Machines Based on Harmonic Current Injection**
Min, Guilu; Ding, Shuye; Xu, Yanwu
Nanjing Normal University
- 15:10-15:30**
TEMS-0215 **Position Error Compensation Strategy for PMSM Sensorless Control Based on an Enhanced Hybrid-Model Active Flux Observer**
Li, Zhiqi; Gao, Huizhen; Su, Jian; Li, Chengrui
Harbin Institute of Technology
- 15:30-15:50**
TEMS-0291 **Predefined-Time Composite Disturbance Observer and Constrained Backstepping Control for Brushless Doubly-Fed Machine-Based Flywheel Energy Storage Systems**
Wang, Xue; Gao, Yuting
Wuhan University
- 15:50-16:10**
TEMS-0445 **Repetitive Control for Bus Voltage Ripple Reduction in Doubly Salient Electromagnetic Generator Systems**
Wu, Chengyue; Zhang, Zhuoran; Wang, Hongcai; Yu, Li
Nanjing University of Aeronautics and Astronautics

ORAL SESSION

WEDNESDAY, NOVEMBER 25

Room 8

OSS-2:

Special Session C-1: Design and analysis of high torque/power density permanent magnet synchronous machines

Chairs

- 14:10-14:27** **Analytical Modeling of Maximum Mechanical Stress in IPMSM Rotors made of Dual-Phase Magnetic Laminated Materials**
TEMS-0446
Yang, Chenyi; Ou, Jing; Liu, Yanyun; Liu, Yingzhen; Liang, Dawei; Xu, Dianguo
Harbin Institute of Technology
- 14:27-14:44** **Data-Driven Modeling and Prediction of Iron Loss in Permanent Magnet Synchronous Motors with Multi-Factor Consideration**
TEMS-0152
Guo, Liyan; Hao, Rongxuan; Yan, Jiaxu; Wang, Huimin
Tiangong University
- 14:44-15:01** **Design and Analysis of a Variable-Rotor-Pole-Number Electrically Excited Synchronous Motor with Integrated Winding**
TEMS-0835
Dong, Zixu; Jiang, Mingyuan; Zhang, Zhang; Zhang, Zhouyang; Niu, Shuangxia; CHAU, Kwok-Tong
The Hong Kong Polytechnic University
- 15:01-15:18** **Electromagnetic Performance Analysis of Slotless Motor with Unbalanced Windings Based on Subdomain Model**
TEMS-0926
Yu, Wenbin; Hu, Peidong; Wang, Zhiqiang; Shi, Tingna
Zhejiang University
- 15:18-15:35** **Reduced-Dimensional Fault-Tolerant Control for Thrust Ripple Suppression in High-Speed Maglev Symmetrical DTP-LSM**
TEMS-1106
Hu, Zongbo; Kang, Jinsong; Li, Xinyue
Tongji University
- 15:35-15:52** **Weakly Coupled Multiphysics Modeling of Electromagnetic Vibration in PMSMs Considering Mesh and Time-Scale Mismatch**
TEMS-0534
Kim, Jin-Gyun; Le, Chi-Hieu
Kyung Hee University
- 15:52-16:10** **Modeling and Suppression of Torque Ripple of Direct-Drive Delta-Shape Permanent Magnet Vernier Motor Considering Effects of Stator Teeth and PM Shape**
TEMS-0864
Zhang, Yixuan; Fan, Deyang; Zhu, Xiaoyong; Xiang, Zixuan; Wu, Jiqi; Xu, Lei; Du, Yi
Jiangsu University

ORAL SESSION

WEDNESDAY, NOVEMBER 25

Room 1

OS1-2: Axial-Flux & High-Torque-Density Machines

Chairs

- 16:30-16:47**
TEMS-0956 **Comparative Design of 100-kW High-Power-Density Permanent Magnet Synchronous Motors for eVTOL Propulsion System**
Yu, Yanlei; Liu, Chengming; Lee, Christopher H. T.; Wang, James
Nanyang Technological University
- 16:47-17:04**
TEMS-1153 **Design and Analysis of a High Power Density Tubular Linear Generator with Fe-Co-V Alloy for Wave Energy Conversion**
Wang, Haoran; Huang, Lei; Shen, Fengyu; Zhang, Jiyu; Li, Yuan; Yang, Jianlong; Song, Linyuan; Chen, Minshuo
School of Electrical Engineering, Southeast University
- 17:04-17:21**
TEMS-0663 **Design and Analysis of High-Torque-Density Permanent Magnet In-wheel Machine for Special Vehicle Applications**
xue, huirong; Han, Jianbin; wang, chen
School of Electrical Engineering and Automation, Anhui University
- 17:21-17:38**
TEMS-0185 **Design of a High-Torque-Density Outer-Rotor Permanent Magnet Synchronous Motor with an Enlarged Air-Gap for Mixing Device Applications**
Benjasupattananan, Sasiwimon; Kaewngam, Natthanicha; Srichiangsa, Theeraphong
Kasetsart University
- 17:38-17:55**
TEMS-1066 **Design of an Axial Flux PMSM with Polymer/Metal Hybrid Stator**
Jiang, Haotian; Lei, Gang; Zhu, Jianguo
University of Technology Sydney
- 17:55-18:12**
TEMS-1124 **Scaling Law of High-Power-Density Permanent Magnet Assisted Synchronous Reluctance Machines Considering Short-Circuit Current Limitation**
Li, Wenyang; Wang, Yawei; Zheng, Yeming; He, Yinjie; hao, shengqiao; Li, Junhao; Hu, Jiabing
Huazhong University of Science and Technology
- 18:12-18:30**
TEMS-1086 **Traction-Oriented Comparison of Axial-Flux Wound-Rotor and PM Motors**
Xu, Xiaohuan; Cao, Zhi; Mahmoudi, Amin; Kahourzade, Solmaz; soong, wen
Flinders University

ORAL SESSION

WEDNESDAY, NOVEMBER 25

Room 2

OS1-3: Advanced PM Machine Design

Chairs

- 16:30-16:47**
TEMS-0830 **Analysis and Optimization of Segmented Surface-Inserted Permanent Magnet Synchronous Motor**
Wang, Shuo; Lu, Hao; Kou, Baoquan
Harbin Institute of Technology
- 16:47-17:04**
TEMS-0648 **Impact of Pole-Stator Slot Number Combinations on Demagnetization Fault Diagnosis in Surface-Mounted Permanent Magnet Synchronous Motors**
Afrandideh, Saeed; Marth, Edmund; Bramerdorfer, Gerd; Ruiz-Sarrio, Jose E.; Antonino-Daviu, Jose
Johannes Kepler University
- 17:04-17:21**
TEMS-0309 **Analysis of Parasitic Torque Associated with Horizontal Driving Force in a Moving-Magnet Permanent Magnet Synchronous Planar Motor**
Shi, Chenyang; Zhang, Lu; Zhao, Chunqiu
Harbin Institute of Technology
- 17:21-17:38**
TEMS-1170 **Design of a Rare-Earth-Reduced Hybrid Permanent Magnet Motor Considering Distinct Roles of Permanent Magnets**
Wu, Jiqi; Xu, Jingwen; Zhu, Xiaoyong; Xiang, Zixuan; Fan, Deyang
Jiangsu University
- 17:38-17:55**
TEMS-0724 **Parametric Strength Optimization of Bezier Curve Shaped Flux Barrier Bridge for V-shaped Rotor of Permanent Magnet Synchronous Machine**
Chen, Zhichao; Liu, Kan; Wei, Dong
College of Mechanical and Vehicle Engineering, Hunan University, China
- 17:55-18:12**
TEMS-0467 **Soft Magnetic Composite Core Application for Performance Enhancement in Permanent Magnet Synchronous Machines**
Guo, Youguang; Yu, Yunfei; Lei, Gang; Zhan, Yuedong; Zhu, Jianguo
University of Technology Sydney
- 18:12-18:30**
TEMS-0888 **Innovative Rotor Step-Skewing in Permanent Magnet Synchronous Machines**
Eschenmann, Leander
Leibniz University Hannover

ORAL SESSION

WEDNESDAY, NOVEMBER 25

Room 3

OS2-4: Predictive Current Control & MPC I

Chairs

- 16:30-16:47** **Current-Ripple-Sampling-Based Online Inductance Identification for FCS-MPC with Fine Switching Granularity in PMSM Drives**
TEMS-0210
Yang, Chenyu; Hu, Mingjin; Hua, Wei
School of Electrical Engineering, Southeast University
- 16:47-17:04** **Dead-beat Predictive Current Control for Dual Three Phase PMSM System Based on Zero Common-mode Voltage Vector**
TEMS-0424
Cao, Yuanhang; Xu, Jinqun; Guo, Hong
Beihang University
- 17:04-17:21** **Iron Loss Reduction in High-speed PMSMs Based on Optimized PWM and Model Predictive Control**
TEMS-0876
Xu, Kai; Chu, Guoyu; Dutta, Dr Rukmi
The University of New South Wales
- 17:21-17:38** **Iterative Learning Enhanced Robust Deadbeat Predictive Control With Extended State Observer for NPC Inverter-Fed Series-End Winding PMSMs**
TEMS-0616
Chen, Hongwu; Liao, Yiwen; Wang, Tianci; Zhang, Bowen; Liu, Yuxin; Yu, Feng; Liu, Chunhua
City University of Hong Kong
- 17:38-17:55** **Model-Based ADRC-MPCC for PMSM Drives in Washing Machine Application with Dynamic Load Variations**
TEMS-0260
Yoon, Yongki
TORQOS
- 17:55-18:12** **Online Input Delay Identification and Compensation for Deadbeat Predictive Current Control of PMSM**
TEMS-0735
Gao, Chengkun; Gan, Chun; Wang, Hongzhe; Zhang, Chong; Jiang, Zijun
Huazhong University of Science and Technology
- 18:12-18:30** **Robust Deadbeat Control for Direct Drive Torque Motor Emulator with Exact Discretization and Parameter Mismatch Adaptation**
TEMS-0162
Du, Haochen; Feng, Pengbo; Liang, Ziyi; Gui, Xianguo
Harbin Institute of Technology

ORAL SESSION

WEDNESDAY, NOVEMBER 25

Room 4

OS2-5: Wide-Bandgap Devices & Gate Drives I

Chairs

- 16:30-16:47** **A Physics-Neural Network Model for Real-Time Simulation of SiC MOSFETs**
TEMS-0672 Chen, Yinbin; Pan, Xuwei; Wang, Can
Harbin Institute of Technology (Shenzhen)
- 16:47-17:04** **Online Inductance Identification of PMSM based on the HF Equivalent Impedance Model Considering Iron Loss**
TEMS-0605 Wang, Yueyang; Bai, Jingang; Zheng, Ping; Li, Jiahong; Sui, Yi
Harbin Institute of Technology
- 17:04-17:21** **Freewheeling Diode and Deadtime Loss Considerations for GaN E-HEMT-Based Reaction Wheel Motor Drives**
TEMS-1168 Lwo, David; Hsieh, Min-Fu
National Cheng Kung University
- 17:21-17:38** **Intrusive Effect of Gate-Current Measurement on High-Side Turn-Off in Double-Pulse Test**
TEMS-0585 Zhi, Shuaiqing; Ma, Mingcheng; Yan, Yishun; Pan, Yanchen; Xu, Dianguo
Harbin Institute of Technology
- 17:38-17:55** **Loss Evaluation of 3-Level T-Type Power Converters for 750V LVDC Marine Thrusters: Comparing Si, SiC, and Si/SiC Device**
TEMS-0069 Selvaraj, Raghu; Rathore, Akshay
National university of Singapore
- 17:55-18:12** **Non-Monotonic Turn-Off Overshoot of IGBT Under Conventional Gate Drive and Its Mechanism**
TEMS-0584 Ma, Mingcheng; Xu, Binbo; Jiang, Wanze; Xu, Dianguo
Harbin Institute of Technology
- 18:12-18:30** **Structural Design Method of 3D Vibration Moter "XReactor" Based on a Dynamic Model Incorporating Nonlinear Magnetic Springs**
TEMS-0628 Kokubo, Soya; Heya, Akira; Ogawara, Riko; Hatano, Shinji; Ando, Masaaki; Inoue, Tsuyoshi

ORAL SESSION

WEDNESDAY, NOVEMBER 25

Room 5

OS2-6: Induction & Synchronous Machine Drives

Chairs

- 16:30-16:50** **An Impedance-Remodeling-Based Strategy for Suppressing Low-Frequency Oscillations in Inverter-Fed Induction Motor Systems**
TEMS-1057
Yang, Zebin; Wang, Wentao; Han, Jingchen; Chen, Canqian; Wang, Xuehua; Ruan, Xinbo
HuaZhong university of science and technology
- 16:50-17:10** **Dynamic Load Torque Compensation in IM FOC Drives Using a Reduced-Order Robust Disturbance Estimator**
TEMS-0983
Peter, Naithan; Kumar, Shahil; Kumar, Krishal
The University of the South Pacific
- 17:10-17:30** **MPC-Based Fast Active Power Regulation for DFIG Connected to DRU-HVDC**
TEMS-0368
Wu, Han; Wang, Tao; Wu, Lijian
Zhejiang University
- 17:30-17:50** **Study on Electrical Parameter Settings for Mechanical-Simulator-Based Sensorless Control of Induction Motors**
TEMS-0544
OBITSU, Ayumi; Kondo, Keiichiro
Waseda university
- 17:50-18:10** **Switching Frequency Stabilization in Rectangular Boundary Model Predictive Control for Induction Motors**
TEMS-0751
Wang, Mingshuo; Qi, Xin
University of Science and Technology Beijing, Beijing
- 18:10-18:30** **Transient simulation of mode switching in a dual mode reluctance motor using vector control**
TEMS-0819
Ono, Ryoma; Kiyota, Kyohei; Qiu, Shou; Tatsuta, Toshiki; Song, Fenping; Nishi, Takashi
Institute of Science Tokyo

ORAL SESSION

WEDNESDAY, NOVEMBER 25

Room 6

OS3-2: Smart Grids & Microgrids

Chairs

- 16:30-16:47** **A Segment Based Shallow Neural Network Framework for Supercapacitor Degradation Modeling and RuL Estimation**
TEMS-0495
Kumar, Shaheel
University of the South Pacific
- 16:47-17:04** **Robust Lithium-Ion Battery SOC Estimation via Adaptive Multi-Kernel Minimum Error Entropy Extended Kalman Filter**
TEMS-0941
Chen, Kezheng; Zhao, Dan; Shen, Ke
Northwestern Polytechnical University
- 17:04-17:21** **Digital Twin Enabled Scalable Solution for cluster of DC microgrids**
TEMS-1033
Singh, Aakash; Shekhar, Shashank; Alam, Aftab
National Institute of Technology Manipur Imphal
- 17:21-17:38** **Distributed Voltage Control Method Under Variable Topology Based on Power Flow Meta Model**
TEMS-0717
Zhang, Kaiyuan; Wang, Zhongguan; Guo, Li; Wang, Chengshan
School of Electrical and Information Engineering, Tianjin University
- 17:38-17:55** **Mechanism-Data Fusion-Based Synchronous Estimation of Capacitance and ESR for T-Type Three-Level Inverters**
TEMS-0940
Jiang, Wei; Zhao, Dan; Shen, Ke
Northwestern Polytechnical University
- 17:55-18:12** **Power Distribution and Coordinated Control Strategy Based on State of Charge of Hybrid Energy Storage System in Ship Microgrid**
TEMS-0440
Zhang, Yang
Harbin Engineering University
- 18:12-18:30** **Current Oscillation Suppression with Harmonic Isolation Enhancement Control for Adjustable Reactance**
TEMS-0615
Zhang, Yizheng; Xu, Ke; Ma, Yinghao; Wang, Jiangyun; Li, Dayi

ORAL SESSION

WEDNESDAY, NOVEMBER 25

Room 7

OSS-3:

Special Session B-1: Design and Control of High-Reliability Electric Machine System

Chairs

- 16:30-16:50**
TEMS-0886 **Fault Diagnosis of Rotor Inter-Turn Short Circuits in Aviation Three-Stage Starter/Generators Based on Fault Signature Transferability**
Han, Xu; Sun, Chenghao; Wu, Chenyang; Feng, Xiuhuan; Jiao, Ningfei
Nanjing Normal University
- 16:50-17:10**
TEMS-0080 **Random Signal Injection Extraction Method of Permanent Magnet Synchronous Motor Based on Virtual Coordinate Transformation**
Chen, Lei; Zhao, Meiling; MAO, Jingfeng; Wang, Huanzhi; Zhu, Xuhui
Nantong University
- 17:10-17:30**
TEMS-1196 **Frequency based reliability assessment of Electrical Machine insulation**
Chandran, Iyyappan; Curti, Mitrofan
Technical University of Eindhoven
- 17:30-17:50**
TEMS-0763 **Integral-Resonant ESO-Based Model-Free Predictive Current Control for Inverter Nonlinearity Suppression in Dual Three-Phase PMSM Drives**
Tao, Ran; Wang, Wei
Southeast university
- 17:50-18:10**
TEMS-0324 **A Novel Asymmetric Magnetic Pole Hybrid-variable-flux PM Machine**
Liu, Dabin; Yang, Hui; Liu, Xiping; Zhu, Xuhui; Liang, Jiangwei; Rong, Cunhao; Yu, Li; Lin, He-Yun; Zhang, Zhuoran
- 18:10-18:30**
TEMS-0788 **A Voltage Ripple Suppression Method for Aircraft Wound Rotor Synchronous Generator under Wide-Speed Operation**
Yang, Yiwei; Yao, Yiming; Zhang, Zhuoran; Wang, Yankun; Wang, Peng
Nanjing University of Aeronautics and Astronautics

ORAL SESSION

WEDNESDAY, NOVEMBER 25

Room 8

OSS-4:

Special Session D: Application of AI for Design Optimization and Control of Electrical Machines

Chairs

- 16:30-16:47**
TEMS-0114 **Kriging-Assisted Multi-Objective Optimization of Axial Flux Permanent Magnet Machine Using Two-Step Adaptive Sampling**
Wu, Zhongze; Mao, Xixuan; Hua, Wei
Southeast University
- 16:47-17:04**
TEMS-0163 **Neural Network-Based Formulation for Topology Optimization of Electric Motors**
Endo, Mitsuru
Institute of Science Tokyo
- 17:04-17:21**
TEMS-0312 **Physics-Assisted Surrogate for PMSM Torque-related Performance Estimation**
Lei, Bowen; Li, Jinlong; Xu, Zhuang; Fu, Weinong; Tan, Nadia; Walker, Adam
University of Nottingham Ningbo China
- 17:21-17:38**
TEMS-0307 **Physics-Guided Generative AI in Actuator Development**
George, Alexi; CHANG, SHUN REN; Law, Bryan; Prakash, Divakaran; Ma, Xiaohe; Hey, Jonathan
A*STAR
- 17:38-17:55**
TEMS-0128 **Sensorless PMSM Control with Neural Network-based Adaptive Parameter Compensation for eVTOL Propulsion**
Raimundo da Silva, Raissa; E. Rivera Abarca, Marco; Padilha Vieira, Rodrigo
Universidade Federal de Santa Maria
- 17:55-18:12**
TEMS-0138 **Adaptive Speed Control of PMSM via Linear Reinforcement Learning-PI Hybrid Strategy**
Zhou, Fobao; Zang, Yonghang; Wang, Xueyan; Yin, Zhenxiao; Zhang, Yujia; Zhao, Hang
The Hong Kong University of Science and Technology (Guangzhou)
- 18:12-18:30**
TEMS-0359 **LLM-Driven Inductor Optimization Framework via Semantic Mapping and Sample-Efficient Surrogate Models**
Zhang, Yitong; Zhang, Chengming; Zhu, Zihao; Li, Jiaxin; Li, Liyi
Harbin Institute of Technology

ORAL SESSION

THURSDAY, NOVEMBER 26

Room 1

OS1-4: Thermal Analysis & Cooling I

Chairs

- 8:30-8:47**
TEMS-0890 **Average Heat Transfer Coefficient Measurements on Spray Cooled Hairpin End Windings**
Parche, Mattis; Bender, Jonas; Brodatzki, Matthias; Dietrich, Benjamin; Wetzel, Thomas; Doppelbauer, Martin
Karlsruhe Institute of Technology
- 8:47-9:04**
TEMS-1107 **Structural Optimization and Parameter Analysis of Motor Oil-Spray Cooling System**
Zhang, Xiao; Geng, Weiwei; Wang, Yu
Nanjing University of Science and Technology
- 9:04-9:21**
TEMS-0967 **Electrical Measurement-Based Modal Parameter Identification for Internal Temperature Estimation in Ultrasonic Motors**
Xu, Bingxin; Cui, Zhiheng; Xu, Zhike; Jin, Long; Shen, Zhan
School of Electrical Engineering, Southeast University
- 9:21-9:38**
TEMS-0384 **Electromagnetic-Thermal Co-Optimization of a Permanent Magnet Synchronous Motor With Variable Cross-Section AM Windings via Intelligent Algorithms**
Yang, Yue; Huang, Xuzhen
Nanjing University of Aeronautics and Astronautics
- 9:38-9:55**
TEMS-0471 **LPTN-Informed Physics-Constrained State-Space Neural Networks for PMSMs Temperature Estimation**
Bian, Haishan; Liang, Yang; Wang, Huimin; Liang, De-Liang
Xi'an Jiaotong University
- 9:55-10:12**
TEMS-0706 **Stress Sensitivity Study of Laminated Amorphous Alloy Core**
LIU, Mingji; Cao, Xuan; Zhan, Yang
North China Electronic University
- 10:12-10:30**
TEMS-1135 **Experimental Investigation of Cooling Performance for Spray Cooled Multi-Layer Hairpin Winding Machines**
Wu, Xuewei; Xu, Zeyuan; Zhang, Fengyu; He, Yuling; Sun, Kai; Cheng, Lihong; Gerada, Chris; Gerada, David

ORAL SESSION

THURSDAY, NOVEMBER 26

Room 2

OS1-5: Winding Technologies & Manufacturing I

Chairs

- 8:30-8:47**
TEMS-0561 **A Hybrid PCB Litz-Solid Winding Structure with Optimized DC and AC Resistance**
Zheng, Jinghao; Wen, Zhaoliang; Xu, Dianguo
Harbin Institute of Technology
- 8:47-9:04**
TEMS-0428 **Thermo-Mechanical Homogenization of a Racetrack Foil Coil**
Geelen, Stefan; Curti, Mitrofan; Lomonova, Elena
Eindhoven University of Technology (TU/e)
- 9:04-9:21**
TEMS-0095 **Aluminum-Copper Composite Conductors for Reduced Eddy Current Losses in Hairpin Windings**
Zürlein, Tobias
Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU)
- 9:21-9:38**
TEMS-0391 **Development of High Fill Factor Slotless Permanent Magnet Motor with Non-Uniform Copper-Foil Winding**
Xu, Hua; Shi, Dan; Cai, Shun; Shen, Jian-Xin
Zhejiang University
- 9:38-9:55**
TEMS-0862 **Numerical Study on Frequency-Dependent Damping Characteristics of Cryogenic Eddy Current Dampers and Proposal of a Hybrid Conductor Structure**
Watanabe, Kodai; Heya, Akira; Nakamura, Shinsaku; Ogawara, Riko; Inoue, Tsuyoshi
Nagoya University
- 9:55-10:12**
TEMS-1121 **PMSM design methodology under life-cycle environmental criteria**
Benabed, Mohamed; Hlioui, Sami; Ben Ahmed, Hamid; Cisse, Koua Malick; Guyon, Olivier
- 10:12-10:30**
TEMS-0849 **A Self-Triggered Series-Resonant Type Saturated Core Fault Current Limiter for Accelerated DC Component Suppression**
Liu, Jiawei; Yuan, Jiaxin; Yuan, Biao; Ma, Guangchen; Zhou, Hang
Wuhan University

ORAL SESSION

THURSDAY, NOVEMBER 26

Room 3

OS2-7: PMSM Drive Control I

Chairs

- 8:30-8:47**
TEMS-0479 **A Robust Speed Control Strategy for Smooth Magnetization State Manipulation of Variable-Flux Machines**
Dong, Xinyu; Wang, Mingqiao; Liu, Yong; Zheng, Ping; Bai, Jingang; Jia, Boru
Harbin Institute of Technology
- 8:47-9:04**
TEMS-0370 **Torque Control of Permanent Magnet Synchronous Motors with Enhanced Model Predictive Strategy**
Zhao, Kaiqi; Li, Yuxuan
Harbin Engineering University
- 9:04-9:21**
TEMS-0771 **Adaptive Synchronous Compensation for Speed Error Control in Four-Wheel Distributed Motor Drive Systems**
Liu, Chunhui; Liu, Kan; Wei, Dong; LI, LING; Chen, Jianya; Peng, Xiaoyan; Chen, Yongdan; Liu, Yue
China North Vehicle Research Institution
- 9:21-9:38**
TEMS-0064 **Current Control Strategy for Independent-Coil-Based Permanent Magnet Linear Synchronous Motor Based on PIR controller**
Yanqing Li
Harbin Institute of Technology
- 9:38-9:55**
TEMS-0409 **Energy Balance Control Combined with Extended State Observer for Permanent Magnet Synchronous Motor**
Zhang, Qiang; Yu, Bowen; Shi, Hongyu; Wang, Ziwen; Zhang, Zikang
Harbin Engineering University
- 9:55-10:12**
TEMS-0780 **Slot Harmonic Suppression of Permanent Magnet Synchronous Machine Drive System with Current Zero-crossing Prediction**
LI, LING; Liu, Kan; Wei, Dong; Liu, Chunhui; Chen, Jianya; Peng, Xiaoyan; Han, Liang
College of Mechanical and Vehicle Engineering, Hunan University
- 10:12-10:30**
TEMS-0757 **Deadbeat Current Harmonic Suppression Method for Permanent Magnet Synchronous Motor Based on Moving Average Filter**
Li, Fei; Zhang, Zhuoran; Zhou, Ruoxiao; Gao, Ying
Nanjing University of Aeronautics and Astronautics

ORAL SESSION

THURSDAY, NOVEMBER 26

Room 4

OS2-8: Wide-Bandgap Devices & Gate Drives II

Chairs

- 8:30-8:50**
TEMS-0250 **A Harmonic Current Extraction Method for PMSMs Based on Improved Fundamental Current Reconstruction and Adaptive Filtering**
Ke, Min; Yan, Yan; Lin, Zhichen; Shi, Tingna
Zhejiang University
- 8:50-9:10**
TEMS-1156 **Online Multi-Objective Gate Control Optimization for Si/GaN Hybrid-Parallel Switches with Variable PWM Frequency in Electric Drive Applications**
Liu, Tianyi; Zheng, Zedong
Tsinghua University
- 9:10-9:30**
TEMS-0766 **Differential Current Sensing Based Gate Current Control for Dynamic Current Balancing of Paralleled SiC MOSFET Power Modules**
Huang, Chengcong; Liu, Kan; Wei, Dong; Tong, Jiaxiang; Chen, Jianya; Han, Liang
College of Mechanical and Vehicle Engineering, Hunan University, China
- 9:30-9:50**
TEMS-0684 **Effects of Mutual Inductive Coupling on Switching Characteristics and System Stability in GaN Half-Bridge Circuits**
Yan, Yishun; Pan, Yanchen; Zhi, Shuaiqing; Xu, Dianguo
Harbin Institute of Technology
- 9:50-10:10**
TEMS-0517 **Modeling and Analysis of Factors Affecting Current Sharing in Parallel SiC MOSFETs and a Low-Cost Current-Sharing Strategy**
Wang, Lurenhang; Li, Liyi
Harbin Institute of Technology
- 10:10-10:30**
TEMS-0905 **Characteristics of Switched Reluctance Motor Driven by Series-End Winding Converter Applied with Switching-Pause Control**
Kojima, Ryoto; Kawarazaki, Keitaro; Hoshi, Nobukazu
Honda R&D Co., Ltd.

ORAL SESSION

THURSDAY, NOVEMBER 26

Room 5

OS2-9: Multilevel & AC/DC Converters

Chairs

- 8:30-8:50**
TEMS-0806 **A Method to Consider Phase of Traction Inverter Harmonics Current for DC-Link Harmonic Current Reduction by Converter Switching**
Katayama, Aira; Tominaga, Haruka; Kondo, Keiichiro; Taniguchi, Shun; Aoyagi, Shigehisa
Waseda University
- 8:50-9:10**
TEMS-0939 **Non-Invasive On-State Resistance Estimation for Three-Level ANPC Inverters via Instantaneous Power Balance and Recursive Identification**
Deng, Huayang; Zhao, Dan; Shen, Ke
Northwestern Polytechnical University
- 9:10-9:30**
TEMS-0451 **Hierarchical Circuit Optimization of MMC Based on an Efficient Thevenin Equivalent Model**
Jiang, Yan; Luo, Quanming; Ma, Yiming
Chongqing University
- 9:30-9:50**
TEMS-1183 **Hybrid Si-SiC Device-Based Nine-Level Switched Capacitor Multilevel Inverter for High-Efficiency Power Conversion**
Singh, Vijay; Tripathi, Ravi Nath
Rajiv Gandhi Institute of Petroleum Technology Jais, Amethi, Uttar Pradesh, India
- 9:50-10:10**
TEMS-0613 **Loss Analysis of a Modular Multilevel Matrix Converter under Different Modulation Methods**
Feng, Keyu; Hu, Zhaohua; Yang, Hemin; Wang, Chao; Teng, Yufei; Guo, Haishan; Shi, Huabo; Wang, Kui; Li, Yongdong
Department of Electrical Engineering, Tsinghua University
- 10:10-10:30**
TEMS-0328 **Optimization of Control Strategies for Three-Phase Inverters in E-Trucks**
Beckemeier, Christian; Hagedorn, Maximilian; Mertens, Axel
Leibniz Universität Hannover

ORAL SESSION

THURSDAY, NOVEMBER 26

Room 6

OS3-3: Energy Storage & Fuel Cells

Chairs

- 8:30-8:47**
TEMS-0707 **Capacity Optimization of Flywheel–Lithium Battery Hybrid Energy Storage System for Wind Farm Power Smoothing**
Li, Xiaotian; He, Jiayi; Liu, Minghui
Shanghai Electric Generation Power Equipment Co., Ltd. Generator Plant
- 8:47-9:04**
TEMS-0859 **Embedded Neural-Network-Based Observer for Model-Free Control: Case Study of a Fuel-Cell-Fed Multiphase Interleaved Buck Converter**
Thounthong, Phatiphat; Yodwong, Burin; Mungporn, Pongsiri; Pierfederici, Serge; Nahid-Mobarakeh, Babak
King Mongkut's University of Technology North Bangkok
- 9:04-9:21**
TEMS-0669 **Hybrid Energy Storage-Based Optimization for Antarctic Integrated Energy Systems Considering Reliability**
Huang, Yuxi; Chang, Xinyue; Xue, Yixun; Su, Jia; Zhang, Jingxuan; Sun, Hongbin
Taiyuan University of Technology
- 9:21-9:38**
TEMS-1166 **Hybrid Flux Observer with Linear/Nonlinear Switching ESOs for Sensorless Control of Magnetic Lead Screw-based Wave Energy Converters**
Zhang, Jiahui
Southeast University
- 9:38-9:55**
TEMS-1099 **Optimization of a Hybrid Energy Storage System (HESS) for a Microgrid DC System with PV Integration: A Comparative Analysis of Performance and Efficiency**
Narayan, Avishay
The University of the South Pacific
- 9:55-10:12**
TEMS-1011 **Real-Time Implementation Of Intelligent Energy Management For PV-Battery-Supercapacitor Hybrid Storage System**
Prakash, Upshanth; Jannif, Nayzel; Mehta, Utkal
The University of the South Pacific
- 10:12-10:30**
TEMS-1158 **Rotor Additional Inertia Analysis of Slope Chain-Rail Gravity Energy Storage Systems Based on Key Design Parameters**
Wu, Gaoyun; Jiao, Shenglin; Li, Yanshuo; Wang, Zufan; Zhao, Haisen
North China Electric Power University

ORAL SESSION

THURSDAY, NOVEMBER 26

Room 7

OSS-5:

Special Session H: Design and Control of High-Performance Flux-Modulated Machines for Advanced Electric Drive Systems

Chairs

- 8:30-8:50**
TEMS-0302 **An Axial-Flux Variable Flux Machine Design and Torque-Speed Modulation for Low-Voltage Electromobility Application**
Ma, Xiaohe; Kong, Chun Jeng; Tran, Quang Vinh; Hey, Jonathan
Singapore Institute of Manufacturing Technology (SIMTech), Agency for Science, Technology and Research (A*STAR)
- 8:50-9:10**
TEMS-0154 **Reduction of Iron Loss in PM Vernier Machines Through Armature MMF Harmonic Suppression**
Sanci, Serhat; Hey, Jonathan; Lee, Christopher H. T.
A*STAR
- 9:10-9:30**
TEMS-0524 **An Improved Field-weakening Permanent Magnet Vernier Machine with Phase-decoupled Hybrid-layer winding**
Ge, Jingyang; Xie, Shuangchun; Shen, Fawen; Ma, Zhengzhou; Yu, Kailiang; Zhu, Shengdao; Lee, Christopher H. T.
Nanyang Technological University
- 9:30-9:50**
TEMS-0299 **Design of a Magnetically Geared Machine for Mobility Traction Application**
Ikemi, Takeshi; Sasaki, Mikito; Mifune, Tomoya; Yamashita, Yuki; Calverley, Stuart; Radu, Dragan
Mitsubishi Heavy Industries, Ltd.
- 9:50-10:10**
TEMS-0281 **Improvement of Torque Settling Time in Magnetic-Geared SR Motor Using State Feedback Control**
Nohara, Sogo; Iwaki, Keigo; Nakamura, Kenji
Tohoku University
- 10:10-10:30**
TEMS-0142 **Loss Reduction of Permanent Magnet Vernier Machine with Optimized Trapezoidal Flux Barrier**
Fang, Hongwei; Zhang, Jinguo; Shen, Haoyu; Su, Xiaowan; Zhang, Yuxin
Tianjin University

ORAL SESSION

THURSDAY, NOVEMBER 26

Room 8

OSS-6:

Special Session C-2: Design and Analysis of High Torque/Power Density

Permanent Magnet Synchronous Machines

Chairs

- 8:30-8:50**
TEMS-0827 **Boundary-Constrained Design of Concentrated-Wound Flat-Wire In-Wheel Machines and Performance Comparison with Round-Wire Equivalents**
Li, Haolin; Wu, Zhongze; Hua, Wei
Southeast University
- 8:50-9:10**
TEMS-0824 **Comparative Investigation of Bridge-Retained and Carbon Fiber Sleeved Interior Permanent Magnet Machines in Electric Vehicles**
Zhang, Wentao; Wu, Zhongze; Hua, Wei
Southeast University
- 9:10-9:30**
TEMS-0558 **Comparative Study of Lumped-Parameter, Neural-Network, and Hybrid Temperature Prediction for Electrical Machines**
Liang, Dawei; He, Tianran; Xiao, Yang; Zhu, Zi Qiang; Ou, Jing; Yu, Guodong; Xu, Dianguo
Harbin Institute of Technology
- 9:30-9:50**
TEMS-0921 **Comparative Study of Multi-tooth Dual PM Machines Considering PM Demagnetization**
Dey, Ankan; Zhu, Z.Q.
The University of Sheffield
- 9:50-10:10**
TEMS-0805 **Mixed NdFeB and Ferrite Magnets in Dual-PM Machines**
Jiang, Haoran; Zhu, Z.Q.; Li, Shiyun
The Hong Kong Polytechnic University (PolyU)
- 10:10-10:30**
TEMS-0837 **Theoretical Analysis and Design of Surface Permanent Magnet Machines with Consequent-Pole Dual-Layer Halbach Array**
Xu, Minxuan; Wang, Yawei
Huazhong University of Science and Technology

ORAL SESSION

THURSDAY, NOVEMBER 26

Room 1

OS1-6: Magnetic Material Modeling and Applications

Chairs

- 10:50-11:07**
TEMS-1060 **Exploration of PMASynRM Topologies Enabled with Blend of Magnets for Rare-Earth Reduction**
Kumar, Praveen; Wilson, Robin; EL-Refaie, Ayman
Marquette University
- 11:07-11:24**
TEMS-1063 **Flux-Locus-Based Core Loss Modeling for Electrical Machines under Complex Magnetization**
Yu, Yunfei; Guo, Youguang; Lei, Gang; Zhu, Jianguo
University of Technology Sydney
- 11:24-11:41**
TEMS-0351 **From Conventional Windings to AM Shaped Profiles for AC Loss Reduction**
Ermakova, Anna; Simpson, Nick
University of Bristol
- 11:41-11:58**
TEMS-0186 **Magnetic Hysteresis Property Modeling of Amorphous Alloy in Medium Frequency Transformer Cores Based on Magnetic Domain Analysis**
Zhou, Chenglin
Shenyang University of Technology
- 11:58-12:15**
TEMS-1062 **Physics-Informed Neural Network for Core Loss Prediction and Material Identification of Amorphous Magnetic Materials**
Zhang, Siwei; Guo, Youguang; Lei, Gang; Zhu, Jianguo
University of Technology Sydney
- 12:15-12:32**
TEMS-0201 **Prospects of FeN PMs in Traction eMotors**
Ferrari, Simone; Pescetto, Paolo; Pellegrino, Gianmario
Politecnico di Torino
- 12:32-12:50**
TEMS-0833 **Measurement and Modeling of Cutting-Induced Degradation in Core Materials for Electrical Machines**
Yue, Shuaichao; Liu, Yuan; Yin, Jiatong; Zhou, Jiapeng; Li, Yongjian
Hebei University of Technology

ORAL SESSION

THURSDAY, NOVEMBER 26

Room 2

OS1-7: Electromagnetic Field Modeling

Chairs

- 10:50-11:07**
TEMS-0458 **Analysis and Modeling of Three-Dimensional Magnetic Field in Halbach Arrays Considering End Effects**
Chuangyue, Lin; Wang, Mingyi; Zhang, Lu; Li, Liyi
Harbin Institute of Technology
- 11:07-11:24**
TEMS-0354 **Finite Element Analysis of Soft Magnetic Material Effects in a U-Shaped Stator Reluctance Actuator**
Xu, Jingxuan; Pan, Donghua; Sun, Wen; Li, Liyi
Harbin Institute of Technology
- 11:24-11:41**
TEMS-0692 **Influence of Temperature Sensor Installation Gap on the Stator Core Magnetic Field in Large Turbo-generators**
Li, Xiaotian; Xu, Baichuan; Xu, Guojun
Shanghai Electric Generation Power Equipment Co., Ltd. Generator Plant
- 11:41-11:58**
TEMS-1253 **Online Temperature Field Measurement and 3D Model Parameter Identification for the Field Winding of a Salient Pole Synchronous Generator**
Meiswinkel, Marius; Ridder, Andreas; Ebrahimi, Amir
Universität Bremen
- 11:58-12:15**
TEMS-0308 **Research and Verification of a Separation Method for Improving Magnetic Field Calculation Accuracy**
Zhao, Chunqiu; Zhang, Lu; Shi, Chenyang; Lu, Hao; Kou, Baoquan
HIT
- 12:15-12:32**
TEMS-0502 **Robust DC Electric Field Measurement Using High-Frequency Injection for Phase-Error-Free Field-Mill Sensor**
Song, Ujin; Kang, Ye Gu
University of Seoul
- 12:32-12:50**
TEMS-0261 **Trade-off Between Cogging Torque and Unbalanced Magnetic Pull in Magnet Adhesive Thickness for Salient-Pole Permanent Magnet Generator**
Limmuel, Eugenia; Nur, Tajuddin; Sarifudin, Alfian; Aymen, Flah
Automotive and Robotics Program, Computer Engineering Department, Binus ASO School of Engineering, Bina Nusantara University, Jakarta, Indonesia

ORAL SESSION

THURSDAY, NOVEMBER 26

Room 3

OS2-10: Parameter Identification & State Observers I

Chairs

- 10:50-11:07** **Four-Quadrant Experimental Verification of an MTPA Angle Search Method Using Virtual Signal Injection with Inductance Identification**
TEMS-1049
Arai, Taishi; Maekawa, Sari; Shibata, Sho; Hamada, Shizunori
Meiji University
- 11:07-11:24** **Active Damping Controller With Inverter-Current-Only Feedback Based on a Resonant-Frame Extended State Observer for LC-Equipped High-Speed PMSMs**
TEMS-0079
Liu, Xiaowang; Liu, Jiaxi
The Department of Electrical Engineering, Harbin Institute of Technology
- 11:24-11:41** **Low Speed Sensorless Control Using a Single-Shunt Current Sensor with a Dynamic Range ADC**
TEMS-0593
Watanabe, Kaito; Maekawa, Sari
Meiji University
- 11:41-11:58** **An Online Asymmetric Voltage Drop Compensation Method for Flux Estimation of FMDRM System Based on Inductance Continuity**
TEMS-0739
Liu, Zhe; Gan, Chun; Ren, Haotian; Zhang, Chong
Huazhong University of Science and Technology
- 12:15-12:32** **Inertia and Resonance Parameter Identification for Direct Drive Servo Systems with High Inertia Ratios**
TEMS-0539
Morita, Ryosuke; Maekawa, Sari; Hanafusa, Kazuki; Suzuki, Ittetsu
Meiji University
- 12:32-12:50** **Resolver Excitation Delay Observer based on Real-Time Hilbert Transformation**
TEMS-0712
Mi, Wenyuan; Zhao, Hang; Zhang, Wei Jia; Yu, Jincheng
The Hong Kong University Of Science And Technology (Guangzhou)

ORAL SESSION

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Room 4

OS2-11: DC/DC Converters II

Chairs

- 10:50-11:07**
TEMS-1152 **Adaptive Unscented Kalman Filter With Passivity-Based Control of a DC-DC Boost Power Converter Supplying Constant Power Loads in DC Microgrid**
Zhou, Yang; Zhang, Zehua; Wang, Panbao; Wang, Wei; Xu, Dianguo
Harbin Institute of Technology
- 11:07-11:24**
TEMS-0500 **Tri-Active Voltage Pulse Method for Sensorless Flying Start of PMSM Drives with a Single DC-Link Current Sensor**
Choi, Hyung-Seok; Yun, Min-Hyeok; Kim, Hyeon-Sik
Department of Next Generation Energy System Convergence, Gachon University
- 11:24-11:41**
TEMS-0776 **An Interleaved High Step-Up DC/DC Converter with Ultra-Low Input Current Ripple and Reduced Switching Voltage Stress**
Cheng, Cheng; Zhang, Longlong; Liu, Huiyang
College of New Energy, China University of Petroleum (East China)
- 11:41-11:58**
TEMS-0762 **Analysis and Improvement of High-Frequency Characteristics of DC-Link Capacitors in High-Power SiC Converters**
Peng, Cheng; Qiu, Cai; Zheng, Tianle; Yang, Qichou; Hu, Sideng
Zhejiang University
- 11:58-12:15**
TEMS-1084 **Experimental Measurement and Simulation Analysis of Motor Stator Deformation**
Miyashita, Yu; Akatsu, Kan
Yokohama National University
- 12:15-12:32**
TEMS-0421 **Research on Double-Layer Interleaved Parallel Three-Phase ANPC Converter and Its Harmonic Characteristics**
Wang, Zheng; Long, Peiyu; Chai, Feng
Harbin Institute of Technology
- 12:32-12:50**
TEMS-1200 **A High-Performance 48V-6V Resonant Switched-Capacitor Converter for Data Center Applications**
Li, Xiang; Guan, Yueshi; Yao, Tingting
Harbin Institute of Technology

ORAL SESSION

THURSDAY, NOVEMBER 26

Room 5

OS2-12: EV Charging & Transportation Power Electronics

Chairs

- 10:50-11:10**
TEMS-0178 **Analysis of Charger Reliability and battery SOC according to CC-CV Transition Voltage**
Yun, Sun Jae; Jang, Yun Sik; Joo, Sung Yong; Kang, Feelsoon
Gyeongsang National University
- 11:10-11:30**
TEMS-0132 **Modeling of Parasitic-Capacitance-Induced Voltage Degradation in Half-Wave Cockcroft-Walton Multipliers for Micro Aerial Vehicle Power Supplies**
Peng, Jinzhe; Li, Jingyi; Wang, Yiming; Qi, Mingjing
Beihang University
- 11:30-11:50**
TEMS-1036 **Efficiency Optimization of Phase-Shift Control for Underwater Wireless Power Transfer Based on Deep Learning**
Tian, Wei; Li, Tao; Sun, Zhichao; Wang, Yijie
Harbin Institute of Technology
- 11:50-12:10**
TEMS-0711 **Emergency Power Generation Method Based on Parallel Operation of Two PMSMs Driven by a Single Inverter**
Yamamoto, Natsuki; Kawabata, Yoshitaka
Ritsumeikan University
- 12:10-12:30**
TEMS-0765 **Impedance-Matching Method and Improvement Strategy for the DC-Link Network of Large-Capacity Traction Converters**
Ye, Zetao; Qiu, Cai; Li, Hua; Zheng, Tianle; hu, sideng
Zhejiang University
- 12:30-12:50**
TEMS-1118 **Integration of a Modular DC-DC Converter and Battery Management System for Electric Vehicle Applications**
Siangsano, Apinya; Farungsang, Linux; Srisomboon, Panupan; Phattanasak, Matheepot; Ghoachani, Roghayeh; Martin, Jean-Philippe; Pierfederici, Serge
Modern Automotive and Automation System Technology (MATA), Technopark, KMUTNB, Bangkok, Thailand

ORAL SESSION

THURSDAY, NOVEMBER 26

Room 6

OS3-4: Power System Stability, Protection & Control

Chairs

- 10:50-11:07**
TEMS-1029 **A Combined Pre-filtering and Feedforward Scheme for Enhanced q-Axis Impedance Reshaping of Grid-Connected Inverters**
Chen, Canqian; Wang, Wentao; Zhang, Shenhao; Yang, Zebin; Wang, Xuehua; Ruan, Xinbo
Huazhong University of Science and Technology
- 11:07-11:24**
TEMS-0158 **Welch-FFT Based Spectral Feature Extraction for Stator Ground-Wall Insulation Location and Severity Monitoring in Inverter-Fed Motors**
Fu, Yu; Xu, Chenxi; Liu, Zicheng; Qu, Ronghai
Huazhong University of Science and Technology
- 11:24-11:41**
TEMS-0617 **A Vector-Based Power Allocation Method for a Containerized PEMFC-Battery-PV Hybrid Power Station**
Liao, Yiwen; Chen, Hongwu; Liu, Yuxin; Chen, Xu; Liu, Chunhua
City University of Hong Kong
- 11:41-11:58**
TEMS-0975 **Fault Current Predictive Control of High Inertia Energy Storage Synchronous Condenser for LVRT Enhancement**
Lv, Qingyang; Zhu, Donghai; Hu, Jiabing; Zou, Xudong; Kang, Yong
State Key Laboratory of Advanced Electromagnetic, Technology Huazhong University of Science and Technology
- 11:58-12:15**
TEMS-0988 **Intelligent Localisation of Open-Circuit Inverter Faults in Machine- and Grid-Side Converters of Back-to-Back PMSG WECS**
Peter, Naithan; Kumar, Shahil; Chand, Shyamal; Prakash, Upshanth; Janiff, Nayzel
The University of the South Pacific
- 12:15-12:32**
TEMS-0838 **Series Arc Fault Identification using Adaptive Moving Average with Area-Based Arc Detection Index Analysis**
Ilman, Abdillah; Asfani, Dimas Anton; Yulistya Negara, I; Sujod, Muhamad
Institut Teknologi Sepuluh Nopember
- 12:32-12:50**
TEMS-0552 **Enhancing Grid Stability of Electric Arc Furnace-Based Smelter Systems under High Fluctuating Loads Using Coordinated STATCOM-BESS Control**
Rosyadi, Marwan; Abduh, Syamsir; Rendroyoko, Ignatius; Soedibyo, Bayu
Institut Teknologi PLN

ORAL SESSION

THURSDAY, NOVEMBER 26

Room 7

OSS-7:

Special Session B-2: Design and Control of High-Reliability Electric Machine System

Chairs

- 10:50-11:10**
TEMS-0557 **Accelerated Thermal Fatigue Testing of Aluminum Hairpin Windings Using Drive Cycle-Based I²R Loading**
Stefanovski, Vladimir; Abu-Libdeh, Aya; Kar, Narayan; Edrisy, Afsaneh
University of Windsor
- 11:10-11:30**
TEMS-0841 **Design and analysis of Dual-Voltage Doubly Salient Brushless DC Generator for Aerospace Applications**
Hu, Guangyuan; Zhang, Jian; Guo, Zhihao; Yu, Li; Yang, Hui; Zhang, Zhuoran
- 11:30-11:50**
TEMS-0755 **Comparative Thermal Analysis of Hybrid PM Machines under Thermal Limits**
Dey, Ankan; Zhu, Zi Qiang
The University of Sheffield
- 11:50-12:10**
TEMS-0649 **Design of Integrated PM Propulsion Motors**
Hu, Pengfei; Xiao, Yuting; Wang, Bitan; Fang, Zhaobo; Cao, Yijun; Cui, Fengrui
Naval University of Engineering
- 12:10-12:30**
TEMS-0784 **Effects of Pole Arc Ratio and Segmentation Number on Demagnetization Characteristics of Halbach Array PM Machines Under Multiple Operating Conditions**
Wang, Peng; Zhang, Zhuoran; Yao, Yiming; Li, Jincai; Liao, Chendong
Modified Third-Harmonic Pole Shaping for Concurrent Low-Noise and High-Torque
- 12:30-12:50**
TEMS-0968 **Fluid-Thermal Coupled Investigation of an Improved Gas-Oil-Separated Hybrid Cooling Structure for a High-Speed Permanent-Magnet Turbo-Generator**
Bian, Xizhao; Zhao, Mei; Yu, Guodong; Xu, Yongxiang; Zou, Jibin
Harbin Institute of Technology

ORAL SESSION

THURSDAY, NOVEMBER 26

Room 8

OSS-8:

Special Session E: Electric Drive Systems and Motor Health Monitoring for Robotic Joint

Actuators

Chairs

10:50-11:07 **A Cross-Modal Feature Interaction Network for Anti-Noise Few-Shot PMSM Inter-Turn Short Circuit Fault Diagnosis**
TEMS-0786

Quan, Yu; Li, Wenlong; Xu, Hui

Nanjing University of Science and Technology

11:07-11:24 **Projection-Based Predictive Current Allocation for Torque Ripple Reduction in Switched Reluctance Motors**
TEMS-0781

Lin, Xijian; Ji, Huayu; Chen, Zifeng; Zhang, Shuo; Xiao, Dianxun

A Seamless Mode-Switching Observer with Disturbance Latching for Humanoid Robot

11:24-11:41 **IPMSM Drives Using a Single DC-Link Current Sensor**
TEMS-0151

Zhang, Yujia; Lin, Maohui; Yin, Zhenxiao; Zhou, Fobao; Zhao, Hang

Hong Kong University of Science and Technology (Guangzhou)

11:41-11:58 **Bearing Degradation Condition Monitoring Method of High-reliability Fault-Tolerant Permanent Magnet Motors Based on Stator Current Signal**
TEMS-0386

Ma, Yang; Xu, Jinquan; Guo, Hong; Tian, Xinlei; Wang, Chao

Beihang University

11:58-12:15 **Online Temporal-Network-Based Compensation for Resonance Suppression in Dual-Inertia Position Control Systems**
TEMS-0842

Wu, Zhuoyuan; Shen, Yang; LIN, Donglong; Zhao, Hang

The Hong Kong University of Science and Technology (Guangzhou)

12:15-12:32 **Post-Contact Object Direction Estimation Based on Robot Joint Torque Response**
TEMS-0821

Kim, Namgyun; Kang, Ye Gu

University of Seoul

12:32-12:50 **Multi-Modal FFT Feature-Based Machine Learning Approach for Stator Fault Diagnosis in PMSMs**
TEMS-0203

Abbas, Zuhair; Hwang, Sujin; Hur, Jin

Incheon National University

ORAL SESSION

THURSDAY, NOVEMBER 26

Room 1

OS1-8: AI-Assisted Machine Design & Optimization I

Chairs

- 13:50-14:07**
TEMS-0803 **A Tri-Model Stacking Surrogate with Multi-Criteria Active Learning for Computationally Expensive Multi-Objective Motor Optimization**
Wilson, Robin; Kumar, Praveen; EL-Refaie, Ayman
Marquette University
- 14:07-14:24**
TEMS-1023 **Electromagnetic-Mechanical Coupling Optimization for Hybrid PM Assisted Synchronous Reluctance Machines Based on Surrogate Model**
Hou, Chenlei; Wang, Yawei
Huazhong university of science and technology
- 14:24-14:41**
TEMS-0130 **An Integrated Surrogate Model for Permanent Magnet Machines Based on an Adaptive Coupling Representation Mechanism**
Kong, Shuyi; Shi, Tingna; Chen, Hao; Gu, Xin
- 14:41-14:58**
TEMS-0129 **Interpretable Machine-Learning Using Design Variables to Identify Dominant Factors of Stray Load Losses in Induction Motors**
Oyamada, Masatsugu; Kunimatsu, Sadaaki; Mizumoto, Ikuro
TMEIC Corporation
- 14:58-15:15**
TEMS-0348 **Constrained Multi-Fidelity Bayesian Optimization for Multi-Objective Electric Motor Design**
Sato, Yoshio; Nakazawa, Ryusho; Omura, Naoki
IHI Corporation
- 15:15-15:32**
TEMS-0769 **Fast Prediction of Electromagnetic Force Waves in PMSMs Based on Multiphysics Samples and a Bayesian-Optimized Neural Network**
Cao, Haifeng; Zeng, Depeng; Sun, Zhaopeng; Zheng, Qingwei; Feng, Xiaoqian; Shi, Wenbo; Wang, Xi; Jiang, Chenxing
Xiamen University
- 15:32-15:50**
TEMS-0383 **Thrust Ripple Suppression Strategy of High-Thrust Permanent Magnet Linear Synchronous Motor Based on Segmental Primary and Its Multi-Objective Optimization**
Wang, Mingyi; Yiming Xu; Zhang, Lu; Li, Liyi
Harbin Institute of Technology

ORAL SESSION

THURSDAY, NOVEMBER 26

Room 2

OS1-9: Reluctance & Special AC Machines

Chairs

- 13:50-14:07**
TEMS-0292 **Analysis of the Pole Pair Configurations for a AC-excited Machine with Dual Stators**
Wang, Yunong; Gao, Yuting; Wang, Xin
School of Electrical Engineering and Automation, Wuhan University
- 14:07-14:24**
TEMS-0722 **Coupling Analysis and Low-Coupling Design of Hybrid Excitation Bearingless Switched Reluctance Motor**
Yang, Zhengzhong; Wang, Chao; Wang, Huijun
Beihang University
- 14:24-14:41**
TEMS-0567 **Data-Driven Modeling of Switched Reluctance Machines Using Neural Networks**
Pinarello Scalcon, Filipe; Knight, Andrew
University of Calgary
- 14:41-14:58**
TEMS-0725 **Radial Displacement Self-Sensing and Control for Bearingless Switched Reluctance Motor**
Yang, Qiang; Wang, Chao; Wang, Huijun
Beihang University
- 14:58-15:15**
TEMS-0958 **Research on Operating Characteristics of Switched Reluctance Pulse Generator Supplying Nonlinear Pulsed Loads**
Liu, Yanting; Zhou, Fulin; Chai, Zhiyuan; Liu, Hao-Wei; Liu, Chuang
Nanjing University of Aeronautics and Astronautics
- 15:15-15:32**
TEMS-0723 **Sensorless Operating Strategies for Switched Reluctance Motors Under Heavy Load Conditions**
Wang, Haixu; Wang, Chao; Wang, Huijun
Beihang University
- 15:32-15:50**
TEMS-0893 **Sinusoidal Optimization of Doubly Salient Electromagnetic Machines via Pole Arc Matching and Rotor Skewing**
Zhong, Jie; Yin, Yujie; Meng, Xiaoli
Nanjing University of Aeronautics and Astronautics, College of Automation

ORAL SESSION

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Room 3

OS2-13: Sensorless Control & Drive Optimization II

Chairs

- 13:50-14:10**
TEMS-0124 **Harmonic Suppression in Sensorless Permanent Magnet Synchronous Motors Drives Using a Neural Network-Based Composite Observer Scheme**
Zhao, Chenhao; Wang, Huanzhi; Yu, Kailiang; Zuo, Yuefei; Li, Tianyi; Cao, Donghui; Shen, Yiming; Lee, Christopher H. T.
Nanyang Technological University
- 14:10-14:30**
TEMS-0816 **Loss-Optimized Inverter Modulation in High-Speed Traction Drives with Permanent-Magnet Synchronous Machines**
Hagedorn, Maximilian
Leibniz University Hannover
- 14:30-14:50**
TEMS-0682 **An ESO-Based Online Inertia Identification and PI Self-Tuning Strategy for PMSM Drives in CNC Turntables**
Wang, Wei; Xu, ZheXi; Song, Shitao; Gu, Jun; Zhao, Junyu; Xu, Dianguo
Harbin Institute of Technology
- 14:50-15:10**
TEMS-0814 **Model-Superposition-Based Loss Modeling and Efficiency Optimization Control for High-Speed Permanent Magnet Synchronous Motor**
Song, Cheng; Du, Jinhua; Zhang, Boyan; Wang, Mengxin; Su, Pengcheng; Zheng, Di
School of Electrical Engineering, Xi'an Jiaotong University
- 15:10-15:30**
TEMS-0704 **Observer-Gain Design for the Low-Speed Regenerative Region in a High-Torque-Response Coasting Restart Method of an Induction Motor for EVs**
Kai, Takumi; Obitsu, Ayumi; Kondo, Keiichiro
Waseda University
- 15:30-15:50**
TEMS-0214 **Sensorless Control of Permanent Magnet Synchronous Motor Based on Complex-Coefficient Frequency-Adaptive Extended State Observer**
Zhao, Mengji; An, Quntao; Lu, Yuzhuo; Sun, Xuemei
Harbin Institute of Technology

ORAL SESSION

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Room 4

OS2-14: Grid-Forming & Grid-Connected Converters

Chairs

- 13:50-14:07**
TEMS-0743 **A Semi-Grid-Forming Current Control for DFIG to Emulate the Damper Winding Behavior of Synchronous Generators During Grid Fault Period**
Wang, Siwen; Zhao, Rende; He, Jinkui; Wang, Hanlin; Li, Guangchen; Guo, Zhiyong
China University of Petroleum (East China)
- 14:07-14:24**
TEMS-0430 **Equivalent Hybrid Synchronization Control for Grid-Following Converter in Weak Grids**
Yi, Chuanzhuo; Wang, Ting; Zhang, Ao; Wang, Zhongxing; Zhang, Xueguang
Harbin Institute of Technology
- 14:24-14:41**
TEMS-1015 **Graphical Assessment of Fault Recovery for Grid-Forming Converters Based on Current-Plane Analysis**
Han, Jingchen; Wang, Wentao; Wang, Baiting; Zhang, Shenhao; Wang, Xuehua; Ruan, Xinbo
Huazhong University of Science and Technology
- 14:41-14:58**
TEMS-1016 **Impact of Averaging-Based Oversampling Delay on Off-Grid VSI Stability**
Zhang, Shenhao; Wang, Wentao; Chen, Canqian; Wang, Baiting; Wang, Xuehua; Ruan, Xinbo
Huazhong University of Science and Technology
- 14:58-15:15**
TEMS-0689 **Seamless GFL-GFM Mode Transition for Parallel Grid-Connected Inverters**
Kim, Dongmin; Song, Wooseok; Cha, Hanju
Chungnam National University
- 15:15-15:32**
TEMS-0427 **Sequence Impedance Modeling of Hybrid GFL/GFM Stations and Stability Analysis**
Zhang, Ao; Wang, Zhongxing; Yi, Chuanzhuo; Zhang, Xueguang
Harbin Institute of Technology
- 15:32-15:50**
TEMS-0206 **Synchronization Stability of Andronov-Hopf Oscillator Based GFM Inverters**
Li, Li; Zhang, Yifan; Wu, Yang; Lin, Xinpo; Li, Haoyu; Song, Huihui
Harbin Institute of Technology

ORAL SESSION

THURSDAY, NOVEMBER 26

Room 5

OS2-15: Fault-Tolerant & Reliable Motor Drives

Chairs

- 13:50-14:07** **Fault Diagnosis of Inter-Turn Short-Circuit Fault in PMSM for Electric Vehicles Based on Full-Order Sliding Mode Observer**
TEMS-0612
Wang, Mingqiao; Li, Jiahong; Liu, Wei; Zheng, Ping; Sui, Yi; Bai, Jingang
Harbin Institute of Technology
- 14:07-14:24** **Fault-Tolerant Control of T-type Inverters via Neutral-Point Voltage Unbalancing Without Front-End Rectifiers**
TEMS-0176
Baek, Daewon; Ko, Youngjong
Pukyong National University
- 14:24-14:41** **Open-Circuit Fault-Tolerant Control Scheme for a Low-Power Hybrid Magnetic Bearing Drive With Multiple Converter Topologies**
TEMS-0777
Lin, Yi; Jiang, Dong
Huazhong University of Science and Technology
- 14:41-14:58** **Power Switch Open-Circuit Fault Detection Method for Dual-Three-Phase PMSM Starter/Generator system Based on Negative Sequence Current**
TEMS-0150
Li, Xingtong; Tian, Xinlei; Zhang, Ling
School of Electrical and Control Engineering, North China University of Technology
- 14:58-15:15** **Research on Fault-Tolerant Operation Control of Five-Phase Open-Winding Motors under Zero-Sequence Current Suppression**
TEMS-0085
Zhao, Wenhao; Su, Yi; Nie, Sanchun; Feng, Ding; Zheng, Jun
Southwest Jiaotong University
- 15:15-15:32** **Weighting-Trade-Off-Based Fault-Tolerant Current Reconstruction Method for Five-Phase Permanent Magnet Synchronous Motors Under Single-Phase Open-Circuit Fault**
TEMS-1143
Huang, Xikai; Sun, Xiaoyong; Chen, Chao; Chen, Zhen
Beijing Institute of Technology
- 15:32-15:50** **Suitability Analysis of Electrical Parameters for IPMSM Diagnosis Under Various Fault Conditions**
TEMS-0192
Im, Seyoung; Heo, Jun-Hyeok; Yang, Yunsu; Hur, Jin
Incheon National University

ORAL SESSION

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Room 6

OS3-5: AI-Based Fault Diagnosis & Device Monitoring

Chairs

- 13:50-14:07** **A TK_TSNet Model for Motor Bearing Misalignment Fault Diagnosis**
TEMS-0729 Gao, Ganlu; Yang, Ming; Zhu, Junyan; Teng, Yue
Harbin Institute of Technology, School of Electrical Engineering and Automation
- 14:07-14:24** **Data-Driven RUL Estimation of Induction Motor Bearings Through PCA-Guided Vibration Analysis**
TEMS-1197 Bainiyatu, Miliana; Mala, Ashurita; Raj, Krish; Kumar, Rahul
The University of the South Pacific
- 14:24-14:41** **Explainable Edge AI for PMSM Stator Inter-Turn Short Circuit Fault Diagnosis Using CatBoost and Current-Derived Features**
TEMS-1127 HADJI-RAHIM, KEVIN; Thongprasri, Pairote; Poolphaka, Paisak; Supatti, Uthane
Kasetsart University
- 14:41-14:58** **Intelligent Multimodal Fusion for Partial Discharge Identification of Post Insulators in High-Voltage Switchgear**
TEMS-0155 Wang, Jinyu; Zhu, Tianle; Zuo, Pengqi; Jin, Lijun
College of Electronic and Information Engineering, Tongji University
- 14:58-15:15** **Pairwise Input with Handcrafted Signal Features for LSTM-Based Motor Fault Diagnosis**
TEMS-0676 Seangwong, Pattasad; Nguyen, Son
Khon Kaen University
- 15:15-15:32** **Prediction of the Remaining Useful Life of a PEMFC using a Time Delay Neural Network**
TEMS-0984 Kumar, Krishal; Takala, Viviann; Kumar, Shahil
University of the South Pacific
- 15:32-15:50** **RUL Prediction for Rolling Bearings Based on Dual-Attention CNN-BiGRU with Asymmetric Loss**
TEMS-0694 Xu, Hui; Li, Wenlong; Quan, Yu
Nanjing University of Science and Technology

ORAL SESSION

THURSDAY, NOVEMBER 26

Room 7

OSS-9:

Special Session C-3: Design and Analysis of High Torque/Power Density

Permanent Magnet Synchronous Machines

Chairs

- 13:50-14:07** **A Double Annular Stepped Baffle Oil Cooling Structure for Eliminating Flow Dead Zones in SSDR Axial-Flux Permanent Magnet Motors**
TEMS-1021
Li, Junxi; Li, Wenlong; Zhu, Jingheng; Quan, Yu
Nanjing University of Science and Technology
- 14:07-14:24** **Permanent Magnet Magnetomotive Force Editing of Axial-Flux Permanent Magnet Machine**
TEMS-1136
Chen, Nanting; Wang, Yawei
HUST
- 14:24-14:41** **A Five-Phase Fault-Tolerant Segmented-Tooth Consequent-Pole Permanent-Magnet Vernier Machine for High-Torque-Density eVTOL Propulsion**
TEMS-0935
Hsieh, Min-Fu; Huynh, Anh; Duong, Minh-Hoc Le; Nguyen, Viet-Tan; Lee, Chin-Hung
National Cheng Kung University
- 14:41-14:58** **Design and Optimization of Dual-Stator Single-Rotor Axial Flux Permanent Magnet Motor**
TEMS-1008
Guo, Hongying; Duan, Zhaoyu; Nie, Sichuang; Zou, Huanqing; Wu, Shaopeng
Harbin Institute of Technology
- 14:58-15:15** **Multi-Stage Hybrid Topology Optimization for IPMSMs**
TEMS-0873
Tonchua, Kantapat; Khunkitti, Pirat
Khon Kaen University
- 15:15-15:32** **Transient Analysis of Single-Phase Short-Circuit Faults in a Novel Equidirectional Toroidal Winding Six-Phase High-Speed Permanent Magnet Synchronous Machine**
TEMS-0218
Liu, Yi
Nanjing University of Science and Technology
- 15:32-15:50** **Investigation of Coreless Permanent Magnet Synchronous Motor with Additive Manufacturing Winding**
TEMS-0831
Shen, Yiming; Meng, Fanbo; Shen, Xiaojun; Zhu, Jingwei; Yu, Kailiang; Wang, Huanzhi; Kajitani, Ryo; Shohei, Watanabe; Lee, Christopher H. T.
Nanyang Technological University

ORAL SESSION

THURSDAY, NOVEMBER 26

Room 8

OSS-10:

Special Session A-2: Advanced Control Strategies for High-Performance Motor Drives in Emerging Electrified Transportation

Chairs

- 13:50-14:10**
TEMS-0219 **A Small-Signal Gain Analysis of Quasi-Sliding Mode Functions for Low-Speed Sensorless PMSM Drives**
Kuang, Nairui; Li, Zhiqi; Li, Chengrui
Harbin Institute of Technology
- 14:10-14:30**
TEMS-0168 **Harmonic-Selective Bessel Complex-Vector Observer with Luenberger-Type PLL for Speed Sensorless PMSM Drives**
Li, Wenjie; Deng, Yongting; Zhai, Chuanlong; Kang, Yuxin; Xu, Laixiang; Cao, Haiyang
Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences
- 14:30-14:50**
TEMS-1130 **Influence Analysis of Asymmetrical Back-EMF Amplitudes in Permanent Magnet Synchronous Motor Systems**
Chen, Chao; Huang, Xikai; Sun, Xiaoyong; Chen, Zhen
Beijing Institute of Technology
- 14:50-15:10**
TEMS-0231 **Investigation of the Guidance Stiffness of Permanent Magnet Electrodynamic Suspension**
Lu, Hao; Wang, Shuo; Kou, Baoquan
School of Electrical Engineering and Automation, Harbin Institute of Technology, Harbin 150001, China
- 15:10-15:30**
TEMS-0620 **Optimized Modeling and Stability Analysis of Speed Control Loop for Low Carrier Ratio PMSM Drive System**
Jin, Xiaoyu; Gao, Shang; Xu, Jianhao; Zhang, Xuan; You, Ye; Liu, Pengcheng; Wang, Zheng
Southeast University
- 15:30-15:50**
TEMS-1076 **Thrust Fluctuation Suppression for PMSLM Based on Model-Assisted Adaptive Linear Active Disturbance Rejection Control**
Wang, WeiZhen; Sang, Na; Chen, Dechao; Cao, Haiyang; Wan, Hongyu; Liu, Wei; Liu, Zhitai; Zhang, Chi
Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences

ORAL SESSION

THURSDAY, NOVEMBER 26

Room 1

OS1-10: Vibration, Noise and Electromagnetic Forces

Chairs

- 16:10-16:27**
TEMS-0804 **A Torque Ripple Suppression Method for Permanent Magnet Synchronous Machines Based on Slot Wedge Structure Optimization**
Shi, Wenbo; Feng, Xiaoqian; Cao, Haifeng; Zhang, Qiang; Zeng, Depeng; Liu, Mingjun; Ou, Junfeng; Ren, Yueru; Zhao, Ying; Zheng, Qingwei
College of Intelligent Systems Science and Engineering, Harbin Engineering University
- 16:27-16:44**
TEMS-0532 **A Vibration-Based Inverse Approach for Electromagnetic Force Validation in PMSMs**
Le, Chi-Hieu; Kim, Jin-Gyun
Kyung Hee University
- 16:44-17:01**
TEMS-1018 **Effect of Control Strategies and PWM Techniques on Noise and Vibration of Permanent Magnet Synchronous Machines under Low Carrier Frequency**
Zheng, Yinzhaoh; Li, Shiyun; Lu, Kejin; Zhu, Zi Qiang; Li, Henghui; Wang, Siqi; Chen, Xiao; Jewell, Geraint; Liu, Yue; Wu, Hui; Luo, Ruiren
Aston University
- 17:01-17:18**
TEMS-0112 **Evaluation of Impedance Properties of Electrical Bypass Plate for Preventing EDM Currents in Motor Support Bearings**
Gunji, Daisuke; Fujimoto, Hiroshi; Setoi, Mutsumi; Takabayashi, Hideaki
The University of Tokyo
- 17:18-17:35**
TEMS-1128 **Permanent Magnet Shape Optimization for Torque Ripple Suppression in 3-Slot/2-Pole Axial Flux Motors**
Yu, Zhencheng; Wang, Yuxuan; Geng, Weiwei; Wang, Yu
Nanjing University of Science and Technology
- 17:35-17:52**
TEMS-0808 **Rapid Prediction and Active Mitigation of Electromagnetic Vibration and Noise in Electrical Machines with Current Harmonic Injection**
Yin, Hang; Niu, Shuang-Xia; Hu, Mingjin; Lyu, Zekai; Hua, Wei
The Hong Kong Polytechnic University
- 17:52-18:10**
TEMS-0113 **Simultaneous Parameter Optimization on Hardware and Control Design for Torque Ripple Reduction**
Shimizu, Osamu; Gunji, Daisuke; Lu, Tong; Fujimoto, Hiroshi
The University of Tokyo

ORAL SESSION

THURSDAY, NOVEMBER 26

Room 2

OS1-11: Faults, Reliability & Insulation

Chairs

- 16:10-16:27** **A Shaft Voltage Analysis Mechanism in EV Traction Motors under Variable Load Conditions**
TEMS-0190
Roh, Kyeong-Min; Jo, Byoung-Wook; Hur, Jin
Incheon National University
- 16:27-16:44** **Vibration Analysis of Short-Circuit Faults in High-Power Permanent Magnet Motors for Electric Locomotives**
TEMS-1129
Ma, Mingyang; Lu, Yang; Zhang, Jiangtao; Sun, Deqiang; Li, Jian
Huazhong University of Science and Technology
- 16:44-17:01** **Characterization of Parasitic Capacitance and Shaft Voltage in PMSMs According to Winding Method**
TEMS-0273
Nam, Jung-Hyun; Jo, Byoung-Wook; Hur, Jin
Incheon National University
- 17:01-17:18** **Investigation into Number and Placement of Dynamic Vibration Absorbers Attached to Outer Circumference of Motor for Effective Vibration Suppression**
TEMS-1137
Senda, Shunya; Kosaka, Takashi; Funasaka, Naho
Nagoya Institute of Technology
- 17:18-17:35** **Fault Diagnosis Strategy for Rotor Inter-Turn Short-Circuit in DFIG Based on High-Frequency Injection**
TEMS-1061
Bai, Jingang; Wang, Yuheng; Wang, Xixi; Liu, Wei; Zheng, Ping
Harbin Institute of Technology
- 17:35-17:52** **ROM-Based Training Data Generation for 1D-CNN Eccentricity Estimation in PMSMs**
TEMS-0654
Kim, Daehan; You, Yongmin
Department of Future Mobility Convergence, Chonnam National University
- 17:52-18:10** **Investigation of the Influence of Stepwise Gearbox Component Integration on Bearing Currents and Bearing Voltages in Electric Drive Systems**
TEMS-0242
Bleicher, Maximilian
Leibniz University Hannover

ORAL SESSION

THURSDAY, NOVEMBER 26

Room 3

OS1-12: AI-Assisted Machine Design & Optimization II

Chairs

- 16:10-16:27**
TEMS-1044 **A Stator-Side Optimization Method for Thrust Fluctuation Suppression in TPMSLM**
Bai, Jingang; Liu, Xuanting; Zheng, Yuhong; Li, Wanquan; Zheng, Ping
Harbin Institute of Technology
- 16:27-16:44**
TEMS-0091 **Design and Shape Optimization of Electromagnetic Bone Conduction Device Using Cantilever Structure**
Ezaka, Marin; Kitagawa, Wataru; Nakashima, Masahiro; Masuda, Ryouhei
Nagoya Institute of Technology
- 16:44-17:01**
TEMS-0486 **Electromagnetic Performance Prediction of PMSMs Based on Physics-Guided Air-Gap Flux Density Surrogate Modeling**
Lin, Xiangru; Fang, Shuhua; Xu, Qiangren; Wang, Chenggang; Sun, Qihang; Zheng, Xinlei
School of Electrical Engineering, Southeast University
- 17:01-17:18**
TEMS-0453 **Estimation Model for the Rotor Mechanical Strength of IPM Motors Based on Data-Driven and Analytical Modeling**
Liu, Feng; Wang, Xiuhe; Lee, Christopher H. T.
Nanyang Technological University
- 17:18-17:35**
TEMS-0116 **Novel Genetic Algorithm with Guaranteed Material Connectivity for Discrete Multi-material Topology Optimization of Electric Machines**
Jiang, Shan; Hahn, Ingo
Friedrich-Alexander-Universität Erlangen-Nürnberg
- 17:35-17:52**
TEMS-0972 **Thermal-Electromagnetic Topology Optimization of Additively Manufactured Electrical Conductors for Aerospace Electrical Machines**
Muhammad, Niaz; Carrillo, Borja; Simón, Ibon
Universidad de Navarra–TECNUN
- 17:52-18:10**
TEMS-0954 **Research on the Electromagnetic Vibration Suppression in Fractional-slot PMSM using Stator Auxiliary Slots**
Zhao, Shihao; Chen, Jinhua; Liu, Wei; Zhang, Chi
Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences

ORAL SESSION

THURSDAY, NOVEMBER 26

Room 4

OS2-16: Predictive Current Control & MPC II

Chairs

- 16:10-16:27** **A Model Predictive Torque Control Method with Advanced Steady-State Performance Based on a New State Space Configuration**
TEMS-1045
Li, Zishan; Wu, Yunlong; Li, Wanquan; Yang, Shijie; Zheng, Ping
Harbin Institute of Technology
- 16:27-16:44** **A Model-Free Self-Commissioning Method for Servo Systems Based on Quantitative Feedback Theory and Reinforcement Learning**
TEMS-0681
Song, Shitao; Gu, Jun; Xu, ZheXi; Xu, Dianguo
Harbin Institute of Technology
- 16:44-17:01** **An Improved Chopping Current Control for Switch Reluctance Motor (SRM) Drives using Finite Control Set Model Predictive Control (FCS-MPC)**
TEMS-0997
Kohmuan, Pakjira; Poolphaka, Paisak; Thongprasri, Pairote; Phattanasak, Matheepot; Jamshidpour, Ehsan; Lubin, Thierry; Takorabet, Nouredine
Electrical Engineering Department, Faculty of Engineering at Sriracha, Kasetsart University Si Racha Campus, Thailand
- 17:01-17:18** **Model-Free FCS-MPC based Dynamic Linearization Data Model for Dual Three-Phase PMSM with Torque Ripple Reduced**
TEMS-0229
Xiaojun, Zhang; Tan, Ruilong; Situ, Anqi; Kang, Min; Yang, Lei; Yang, Jiaqiang
Zhejiang University of Science and Technology
- 17:18-17:35** **Model-Free Predictive Current Control for Double Stator DC-Biased Hybrid Excitation Machine Using an Improved High-Order Extended State Observer with QPR Harmonic Suppression**
TEMS-1034
Wan, Changhui; Fan, Yiming; Yu, Zhiheng; Ren, Qiulin; Wei, Liangliang
Sun Yat-sen University
- 17:35-17:52** **Model-Free Predictive Current Control for SPMSM Based on Adaptive Generalized Integrator Extended State Observer**
TEMS-0740
Lin, Jinpu; Dou, Manfeng; Yang, Heming; Dang, Mengxi; Zhao, Dongdong; Hua, Zhiguang
Northwestern Polytechnical University
- 17:52-18:10** **Model-Free Predictive Current Modeling for PMSM Drives Using Auto-Regressive with Exogenous Input Model**
TEMS-0656
Tang, Zichun; Gou, Bin; Feng, Xiaoyun; Liu, Wei
Southwest Jiaotong University

ORAL SESSION

THURSDAY, NOVEMBER 26

Room 5

OS2-17: Energy Storage & Generator Control

Chairs

- 16:10-16:30** **A Discharge Control Strategy for Flywheel Energy Storage Systems with Capacitor-Energy-Storage-Error-Based Disturbance Observer**
TEMS-0236
Tan, Ruilong; Xiaojun, Zhang; Kang, Min; Yang, Lei; Yan, Yonghui
Zhejiang University of Science and Technology
- 16:30-16:50** **Design and Control of Two-Stage Integrated On-Board Chargers for Two-Wheelers**
TEMS-0622
Dam, Debarati; Basak, Saptarshi
Indian Institute of Technology Delhi
- 16:50-17:10** **An Energy-Conversion-Based Control Strategy for Improving the Dynamic Response of the Single-Phase Inverter**
TEMS-0408
Zhang, Qiang; Shi, Hongyu; Wang, Ziwen; Zhang, Zikang; Yu, Bowen
Harbin Engineering University
- 17:10-17:30** **Fast Sliding-Mode MPPT Control for Semi-Direct-Drive PMSG-Based High-Altitude Wind Power Systems**
TEMS-0894
Zhou, Zixun; Wang, Shanming; Liu, Wenmao; Li, Hongchao; Cui, Yunfei; Wang, Yu; Zheng, Quan
Tsinghua University
- 17:30-17:50** **Loss Analysis of a Large-Capacity Variable-Speed Pumped Storage Machine Fed by Fully Rated M3C Under Steady State and Fast Power Response**
TEMS-0342
Yang, Xiaochun; Gao, Yuting; Chen, Dongxiao; Li, Guifen; Hu, Zhaohua
School of Electrical Engineering and Automation, Wuhan University, Wuhan, China
- 17:50-18:10** **Predictive Flux Control of Dual Stator Winding Machine for Renewable Energy Generation**
TEMS-0576
Yang, Haitao; Zhang, Yongchang; Zhang, Shengan; Ma, Shuo
North China Electric Power University

ORAL SESSION

THURSDAY, NOVEMBER 26

Room 6

OS2-18: Emerging Power Conversion & Drive Technologies

Chairs

- 16:10-16:30** **Generalized Hybrid Modular Multilevel Converter Topology and Control Scheme for Quasi-n-Level Operation**
TEMS-1032
Laumann, Jan Niclas; Mertens, Axel
Leibniz University Hannover
- 16:30-16:50** **Mechanical-Impedance Matching Based Analysis Method for Electromechanical Coupling Influence on Torsional Vibration of Machine Drives**
TEMS-0580
Wang, Qishuai; Yang, Shuying; Liu, Jiakang; Zhu, Guangze; Fang, Jiayu
Hefei University of Technology
- 16:50-17:10** **Online Battery Impedance Estimation Under Operating Conditions via a Front-End Converter in an Integrated Motor Drive System**
TEMS-0394
Jeon, Wan; Kang, Ye Gu
University of Seoul
- 17:10-17:30** **Reliability Analysis of SMPS Under Universal AC Input Voltage Conditions**
TEMS-0177
Jang, Yun Sik; Lee, Jung Ho; Lee, Kyoung Lim; Kang, Feelsoon
Gyeongsang National University
- 17:30-17:50** **Research on Electromechanical Coupling Modeling and Decoupled Control of DFIG-Based Natural Gas Differential Pressure Power Generation Systems**
TEMS-1199
Sun, Xiang; Zhang, Longlong; Cheng, Cheng; Dong, Wenbo; Xu, Litao; Jin, Qiongtong
College of New Energy, China University of Petroleum (East China)

ORAL SESSION

THURSDAY, NOVEMBER 26

Room 7

OS1-13: Advanced Machine Analysis & Emerging Concepts

Chairs

- 16:10-16:27** **A Variable-Flux Line-Start Machine with Mechanical Flux-Adjusting Elements for Increased Start-Up Performance**
TEMS-0355
Krainer, Thomas; Weissitsch, Gabriel; Peer, Markus; Marth, Edmund; Bramerdorfer, Gerd
Johannes Kepler University
- 16:27-16:44** **Reducing Rare Earth Elements in Large Offshore Wind Direct Drive Permanent Magnet Generators**
TEMS-0533
Khosravimehr, Erfan; Kodalle, Fabian; Ebrahimi, Amir
University Bremen
- 16:44-17:01** **Analysis and Mitigation of Controller-Induced Current Harmonics on Rotor Electromagnetic Behavior in HTS Synchronous Motors**
TEMS-0166
Wu, Wu Sitong
the National Key Laboratory of High Density Electrical Energy Conversion, Huazhong University of Science and Technology
- 17:01-17:18** **Design Considerations for Pole-Changing Machines in Aerospace Applications**
TEMS-1255
Mekahlia, Abdelhak; BENMAMAS, Loucif; Ramarotafika, Rindrarivelo
Safran Tech
- 17:18-17:35** **Design of a Novel Axial Flux Hybrid Excitation Synchronous Motor for UAV Propulsion Applications**
TEMS-0748
Kim, Se-Eun; YOU, YONGMIN
Department of Future Mobility Convergence, Chonnam National University
- 17:35-17:52** **Switching Speed Manipulation of Mechanical Modulators in the Rotor of a Variable Flux PMSM through Direct-Axis Current Injection**
TEMS-0092
Weissitsch, Gabriel; Krainer, Thomas; Bagnara, Matthew; Marth, Edmund; Bramerdorfer, Gerd
Johannes Kepler University
- 17:52-18:10** **Analytical Calculation of No-Load Magnetic Field for a Permanent Magnet Linear Motor with the Same Number of Poles and Slots**
TEMS-0944
Cai, Ziyi; Chen, Jinhua; Yang, Jiutong; Yan, Wenyan; Liu, Guangwei
UCAS

ORAL SESSION

THURSDAY, NOVEMBER 26

Room 8

OSS-11:

Special Session K: Advanced Wireless Power Transfer for Intelligent Electrified and Autonomous Systems

Chairs

- 16:10-16:30**
TEMS-1035 **Controllable Rectification Technology Based on Phase-Shift Control of the Secondary-Side Lagging-Arm**
Chen, Fuze; Zhang, Jiantao; Cui, Shumei; Fang, Zhenyang; Zhang, Zebin; Zhu, Chunbo
Harbin Institute of Technology
- 16:30-16:50**
TEMS-1179 **A Landing-Gear-Interoperable Control Method for UAV Wireless Power Transfer With a Unified Conformal Receiver**
Yang, FengShuo; Song, Kai; Lan, Yu; Zhang, Ben; Xiong, Mingxing; Zhang, Qingxuan; Jiang, Jinhai; Wang, Xudong; Xu, Wanli
Harbin Institute of Technology
- 16:50-17:10**
TEMS-0535 **Low Stator MMF Harmonic Winding for Single-Winding Bearingless PM Synchronous Motor**
Wang, Huimin; Yang, Yue; Li, Xinmin; Yu, Lihong; Guo, Liyan
Tiangong University
- 17:10-17:30**
TEMS-0550 **Primary-Side Power Regulation with Low-rate Communication for CC/CV Control in Non-Moored Underwater Wireless Power Transfer Systems**
Shi, Wentao; Li, Dan; Lan, Hai; Guo, Dong; Cheng, Bing; Jiao, Liantong; Shi, Zeqi
College of Intelligent Systems Science and Engineering, Harbin Engineering University
- 17:30-17:50**
TEMS-0086 **Six Degrees of Freedom Anti-Misalignment Method for Wireless Power Transfer Systems in Superconducting Maglev Transport**
Su, Yi; Zhao, Wenhao; Nie, Sanchun; Zheng, Jun
Southwest Jiaotong University
- 17:50-18:10**
TEMS-1181 **Vision-Based Foreign Object Detection for Wireless Power Transfer Systems Using Custom YOLOv8 Architecture**
Adnan, Hafiz Rumman; Tian, Zihan; Cheng, Shihao; Zhang, Xiaofan; Ali Yahya Mohammed, Qaid; Zhao, Haisen
North China Electric Power University

ORAL SESSION

FRIDAY, NOVEMBER 27

Room 1

OS1-14: Winding Technologies & Manufacturing II

Chairs

- 8:30-8:47**
TEMS-1069 **AC Loss Suppression in Hairpin Motors Using Unequal Cross-Section and Copper-Aluminum Hybrid Winding**
Li, Jiaxuan; Sun, Xiaoyong; Ran, Zhitong; Huang, Xikai
Beijing Institute of Technology
- 8:47-9:04**
TEMS-0187 **Analysis of Partial Discharge Characteristics in Hairpin Windings Considering Manufacturing Tolerances and Springback**
Hong, Jin-Ho; Heo, Jun-Hyeok; Hur, Jin
Incheon National University
- 9:04-9:21**
TEMS-0658 **Bending Effect on PDIV and Lifetime of PEEK-Coated Flat Wire for 800V E-Motor Applications**
Elkomos, Mina; Elmezain, Mohammed; Gulec, Mehmet; Vandenbroucke, Wouter; Sergeant, Peter
Ghent University
- 9:21-9:38**
TEMS-0202 **Capacitance Ratio Based Prediction of Partial Discharge Inception in Electrical Machine Insulation**
Khalil, Salar; Heo, Jun-Hyeok; Hur, Jin
Incheon National University
- 9:38-9:55**
TEMS-0645 **Computationally efficient modelling of per-turn impedance matrix of a racetrack coil array using homogenization**
Wenceslaus, Benish; Curti, Mitrofan
Eindhoven University of Technology
- 9:55-10:12**
TEMS-0062 **Görge Polygon and Differential Leakage Coefficient of Symmetrical Polyphase Integer Slot Windings**
Schmidt, Erich
TU Vienna; NAGOYA UNIVERSITY
- 10:12-10:30**
TEMS-0638 **Winding Factor Unified Calculation for Stator-Modular Phase-Group Concentrated Winding PMSMs**
Wang, Bitan; Zhao, Wenliang; Liu, Cong; Wang, Ning; Zhongkun, Cao
School of Electrical Engineering, Shandong University

ORAL SESSION

FRIDAY, NOVEMBER 27

Room 2

OS1-15: Thermal & Multiphysics Analysis

Chairs

- 8:30-8:47**
TEMS-0618 **A Predictive Thermal Modelling Framework for Design Optimisation of Modular Electrical Machines**
Fatahilmi, Yusril
The University of Edinburgh (IDCORE)
- 8:47-9:04**
TEMS-0793 **Thrust Test of a High Temperature Superconducting Linear Motor Mover with Onboard Cryogenic Cooling below liquid nitrogen temperature 77 K**
Hu, Juntong; Yang, Wenjiang; Vaschetto, Silvio; Freschi, Fabio
Beihang University School of Astronautics
- 9:04-9:21**
TEMS-0767 **Investigation of Temperature Rise Characteristics of Electrical Machine with Slot-Bottom Heat Dissipation Tooth Structures**
Qiao, Binbin; Zhu, Falong; Hao, He; Huang, Xiangqian; Wu, BoCheng
Hangzhou Three Phases Technology Co., Ltd
- 9:21-9:38**
TEMS-0820 **Modeling of Permeability Degradation in Laser Cut Non-Oriented Electrical Steel Used in Electric Machines Employing Residual Thermal Stress Field**
Marzia, Syeda; Li, Ze; Kar, Narayan
University of Windsor
- 9:38-9:55**
TEMS-0513 **Non-uniform Temperature Distribution Modeling and Analysis of Coreless AFPM Motor with Inter-Disk Series Coils**
Jia, Yanghua; Li, Jian; Zhang, Mengjia; Chen, Zhichu; Lu, Yang
Huazhong University of Science and Technology
- 9:55-10:12**
TEMS-0848 **Proposed Structure and Performance Evaluation of a Variable-Magnet Vernier Motor for Wide-Range, High-Efficiency Drive**
Takenaka, Hikaru
Shibaura Institute of Technology
- 10:12-10:30**
TEMS-0352 **Influence of Dimensional Constraints on Flat Heat Pipe Cooling Systems in Permanent Magnet Synchronous Motors for Aircraft Propulsion**
Hua, Yuxi; Zhang, Zhuoran; Xue, Han; Lin, Qiuyu; Gao, Huamin
Nanjing University of Aeronautics and Astronautics

ORAL SESSION

FRIDAY, NOVEMBER 27

Room 3

OS1-16: Linear & Special Machines I

Chairs

- 8:30-8:47**
TEMS-0297 **A Dual-output Actuator Designed for Mobile Robot Application**
Ma, Xiaohe; Kong, Chun Jeng; Tran, Quang Vinh; Hey, Jonathan
Singapore Institute of Manufacturing Technology (SIMTech), Agency for Science, Technology and Research (A*STAR)
- 8:47-9:04**
TEMS-1092 **PM-Free Axial-Flux Electric Machines: Classification, Operating Principles, and Research Challenges**
Xu, Xiaohuan; Cao, Zhi; Mahmoudi, Amin; Kahourzade, Solmaz; Soong, Wen
Flinders University
- 9:04-9:21**
TEMS-0996 **Design and Performance Analysis of a Stator-Dislocated Dual Three-Phase Axial Flux Permanent Magnet Motor**
Jiang, Junjie; Geng, Weiwei
Nanjing University of Science and Technology
- 9:21-9:38**
TEMS-0411 **Design Study of a Axial-Radial Hybrid Flux Motor with a Toroidal Winding for Flywheel Energy Storage**
Wang, Changhu; Xu, Yanliang; Feng, Lin
Shandong University
- 9:38-9:55**
TEMS-0636 **Effect of Lamination Sheet Thickness on Thrust and Eddy-Current Loss in a Transverse Flux Linear Switched Reluctance Motor**
Miyao, George; Hirayama, Tadashi
Kogakuin University
- 9:55-10:12**
TEMS-0488 **An Axial Flux Self-Bearing Motor with Separated Winding for An Implantable Maglev Pediatric Ventricular Assist Device**
Osa, Masahiro; Masuzawa, Toru; Nishinaka, Tomohiro
Ibaraki University
- 10:12-10:30**
TEMS-0403 **Investigation of the Complex Demagnetization Mechanism during Multi-Step Post-Assembly Magnetization in Spoke-Type PMSMs**
Wu, Yanting; Shi, Dan; Zhu, Zi-Ang; Chen, Xiao; Shen, Jian-Xin
Zhejiang University

ORAL SESSION

FRIDAY, NOVEMBER 27

Room 4

OS2-19: PMSM Drive Control II

Chairs

- 8:30-8:47**
TEMS-0597 **A Study on Harmonic Suppression in Permanent Magnet Synchronous Motors based on Random Synchronized SVPWM**
Liu, Jiakang; Yang, Shuying; Wang, Qishuai; Zhu, Guangze
Hefei University of Technology
- 8:47-9:04**
TEMS-0960 **Systematic Design of a Combined Proportional-Integral and Resonance Controller to Compensate for Electromagnetic Force Order $2p$ of a PMSM**
Jopert, Meike; Jansen, Jonas; Mertens, Axel
Leibniz University Hannover
- 9:04-9:21**
TEMS-1054 **Cogging Torque Cancellation in Axial Gap Motors Using Multiple-Wave Magnets with a Periodic Boundary Symmetric Arrangement**
Yamauchi, Asa; Mizuno, Akito; Kitagawa, Wataru
Nagoya Institute of Technology
- 9:21-9:38**
TEMS-0247 **Data-Driven Subspace Model Identification Method in Vibration Prediction of Permanent Magnet Synchronous Motor**
Han, Xinyu; Yan, Yan; Li, Hongjie; Lin, Zhichen; Shi, Tingna
Zhejiang University
- 9:38-9:55**
TEMS-0909 **Expanding the Speed Range of Torque Ripple Suppression in Vector-Controlled SRM Using Repetitive Control**
Takahashi, Hayato; Kawarazaki, Keitaro; Hoshi, Nobukazu
Tokyo University of Science
- 9:55-10:12**
TEMS-0727 **Sensorless Safety Redundant Control of Permanent Magnet Synchronous Motors for Industrial Robot**
Teng, Yue; Yang, Ming; Xiang, Tianxiang; Zhu, Junyan; Gao, Ganlu
Harbin Institute of Technology, School of Electrical Engineering and Automation
- 10:12-10:30**
TEMS-1160 **An Analytical Model-Based Torque Ripple Reduction Method for PMSMs and SynRMs**
Dupont, Antoine; Gyselinck, Johan
Université Libre de Bruxelles

ORAL SESSION

FRIDAY, NOVEMBER 27

Room 5

OS2-20: Multiphase & Multi-Motor Drives

Chairs

- 8:30-8:47** **2-in-1 Motor Drive System Using a Single Inverter**
TEMS-1125 Hirano, Takumi; Akatsu, Kan
Yokohama National University
- 8:47-9:04** **Single-Phase Integrated Charging for Dual-Inverter Open-Winding Motor Drives With Independent Power Control and Ripple Mitigation**
TEMS-0293 Li, Gaofeng; Wei, Jiadan
Nanjing University of Aeronautics and Astronautics
- 9:04-9:21** **A Reverse-Series IGBT-Based Winding Switching Topology for Dual-Winding PMSM Drives With Overvoltage Suppression**
TEMS-0435 Cui, Mingkai; Chai, Feng; Long, Peiyu; Chen, Lei
Harbin Institute of Technology
- 9:21-9:38** **High-Frequency Equivalent Modeling Method of Dual Three-Phase PMSM Drives for Conducted EMI Prediction**
TEMS-0414 Tian, Dajie; Zhou, Qiang; Xu, Jinquan; Li, Xiao; Guo, Hong
Beihang University
- 9:38-9:55** **Joint Active Electromagnetic Interference Suppression for Active Magnetic Bearings and Dual Three-Phase Motors**
TEMS-1090 Li, Mingjian; Zhou, Mingqu; Jiang, Dong
School of Electrical and Electronic Engineering
- 9:55-10:12** **Robust Condition Monitoring of Single-Phase BLDC Fan Motors in Corrosive Environments via Physics Model-Based Residual FFT**
TEMS-0503 Shin, Heemun; Kang, Ye Gu
University of Seoul
- 10:12-10:30** **Offline Parameter Identification of Dual-Winding Induction Machines Based on Three-Phase Inverter**
TEMS-0683 Bi, BinQi; Yang, Haitao; Zhang, Yongchang
North China Electric Power University

ORAL SESSION

FRIDAY, NOVEMBER 27

Room 6

OS2-21: Reluctance & Bearingless Motor Drives

Chairs

- 8:30-8:47**
TEMS-0320 **A High-Precision Switching Power Amplifier for Short-Stroke Reluctance Actuators**
Tian, Hao
School of Electrical Engineering and Automation, Harbin Institute of Technology
- 8:47-9:04**
TEMS-0643 **Radial Suspension Force Analysis and Validation of a Novel 12-Phase Open-Coil Bearingless Motor**
Quan, Xiao; Gu, Chunyang; Zhang, Jing; Buticchi, Giampaolo; Zhang, He
University of Nottingham Ningbo China
- 9:04-9:21**
TEMS-1075 **Analytical Derivation of Higher-Order Current Harmonics for Torque Ripple Suppression in Switched Reluctance Motors**
Fabio, Muhammad; Qiu, Shou; Kiyota, Kyohei
Institute of Science Tokyo
- 9:21-9:38**
TEMS-0734 **Asynchronous Sampling Error Compensation Method of Current Reconstruction for Open-Winding Switched Reluctance Motors Drives**
Shan, Xinzhen; Gan, Chun; Ren, Haotian; Zhang, Chong; Qu, Ronghai
School of Electrical and Electronic Engineering, HUST
- 9:38-9:55**
TEMS-0073 **Field Current Estimation of Electrically Excited Synchronous Machines Using Model Reference Adaptive System**
Jiang, Bowen; Liu, Yujing; Tang, Junfei; Hall, Sebastian; Lindström, Joachim
Chalmers University of Technology
- 9:55-10:12**
TEMS-1148 **Fourier-Enhanced Multi-Domain Feature Aware Fusion Method for Accurate Magnetic Core Loss Prediction Under Complex Conditions**
Hu, Youkang; Zhang, Yongkang; Wang, Jiyao; Xu, Wei
Southeast University
- 10:12-10:30**
TEMS-0822 **Characteristics of Switched Reluctance Motor Driven by Four-Leg Converter Applied with Switching-Pause Control**
Kojima, Ryoto; Kawarazaki, Keitaro; Hoshi, Nobukazu
Honda R&D Co., Ltd. / Tokyo University of Science

ORAL SESSION

FRIDAY, NOVEMBER 27

Room 7

OSS-12:

Special Session F: Design, Analysis and Thermal Management of Electrical Machines for eVTOL Propulsion

Chairs

- 8:30-8:50**
TEMS-0520 **Design and Analysis of a Coaxial Counter-Rotating Dual Rotor Axial-Flux PM Motor for Electric Vertical Take-off Aircraft Propulsion Application**
Xu, Jian; Xu, Lei; Zhu, Xiaoyong; Zhang, Chao
School of Electrical and Information Engineering, Jiangsu University
- 8:50-9:10**
TEMS-0595 **Evaluation of a High-Torque-Density Axial-Flux Permanent Magnet Motor with U-Core Stators for eVTOL Propulsion System**
Yu, Yanlei; Liu, Chengming; Lee, Christopher H. T.
Nanyang Technological University
- 9:10-9:30**
TEMS-1171 **Improved Stator Cooling Method for High Power Density Electrical Machines**
Ahmadi Darmani, Mostafa; Sadeghianjahromi, Ali
University of Warwick
- 9:30-9:50**
TEMS-1203 **Mission Profile Based Motor Sizing for Agricultural UAV Propulsion: A Thermal-Equivalent Torque Approach**
Bhardwaj, Vaibhav; Jain, Amit
IIT Delhi
- 9:50-10:10**
TEMS-0826 **Performance Analysis of Electric Vertical Take-off and Landing Machine Optimized Based on Different Optimization Current Density**
Wu, Zhongze; Cang, Ziyu; Hua, Wei
Southeast University
- 10:10-10:30**
TEMS-0931 **Periodic Variation of Torque Ripple With Pole Arc Coefficient in Coreless Axial-Flux Halbach Motor**
Xu, Haoen; Dao, Chengyi; Zheng, Junqiang
School of Electrical Engineering and Automation, Nantong University, Nantong, China

ORAL SESSION

FRIDAY, NOVEMBER 27

Room 8

OSS-13:

Special Session I: Advanced Design and Control of Multiphase and Multi-Winding Electric Machines

Chairs

- 8:30-8:50**
TEMS-0802 **An Efficiency-Enhanced Method for Dual Three-Phase Permanent Magnet Synchronous Machines Based on the Dual-Vector Model Predictive Control**
Zeng, Depeng; Feng, Xiaoqian; Zheng, Qingwei; Shi, Wenbo; Ou, Junfeng; Liu, Mingjun; Cao, Haifeng; Ren, Yueru; Zhang, Qiang
College of Intelligent Systems Science and Engineering, Harbin Engineering University
- 8:50-9:10**
TEMS-1002 **Design and Performance Analysis of a Dual Three-Phase Permanent Magnet Synchronous Motor for Electric Propulsion**
Huang, Mengting; Zhang, Haoyu; Dou, Chujie; Han, Shouliang; Wu, Shaopeng
Harbin Institute of Technology
- 9:10-9:30**
TEMS-1165 **Fundamental Current Decoupling of Multiphase Machines Under Asymmetric Operation Based on GSC and SOGI Virtual Phase Shifting**
Ni, Shusen; Zheng, Zedong; Xu, Lie
Tsinghua University
- 9:30-9:50**
TEMS-0300 **Hybrid Modulation Strategy for Switching Harmonic Suppression in Dual-Unit PMSM with Coupled Inductors**
Chen, Zipeng; Zhang, Wentao; Liu, Shilong; Cheng, Sizhe; Xu, Yongxiang; Zou, Jibin
Harbin Institute of Technology
- 9:50-10:10**
TEMS-1003 **Modeling and Harmonic Current Suppression of Asymmetrical Dual Three-Phase PMSMs Based on an Internal Model Based ADRC**
Dou, Chujie; Wu, Shaopeng; Nie, Sichuang; Yu, Jiaqiang; Chen, Zhichu
Harbin Institute of Technology
- 10:10-10:30**
TEMS-0135 **Topology Optimization of Fully Excited Maglev Planar Motors Based on Virtual Current Superposition**
Zhou, Haoying; Wang, Xiaolin; Bao, Xucong; Zhu, Mingxun; Yi, Junxiao; Huang, Sihuan
Nanjing University of Aeronautics and Astronautics

ORAL SESSION

FRIDAY, NOVEMBER 27

Room 1

OS1-17: Linear & Special Machines II

Chairs

- 10:50-11:07**
TEMS-1150 **A Double Sided Coreless PMLSM With Motor Assisted Eddy Current Braking for Electromagnetic Sleds**
Mu, Junren; Zhang, He; Kou, Baoquan; Xu, Dafu
Harbin Institute of Technology
- 11:07-11:24**
TEMS-0353 **An Efficient and High-Accuracy Hybrid Analytical–Polynomial Model for Fast Prediction of Coupled Multi-Axis Forces in Voice Coil Motors**
Sun, Wen; Pan, Donghua; Xu, Jingxuan; Li, Liyi
Harbin Institute of Technology
- 11:24-11:41**
TEMS-1155 **An Extension to the State of the Art IM FEA for Use in Bearingless IM with an Arbitrary Number of Phases as well as Pole-Specific Rotors**
Mallinger, Stefan; Gruber, Wolfgang
Johannes Kepler University Linz
Institute of Electric Machines and Power Electronics
- 11:41-11:58**
TEMS-0381 **Design and Torque Analysis of an Interior Permanent Magnet Spherical Motor with Tiered Stator**
Mitsume, Ryoya; Heya, Akira; Uchio, Yoshiki; Ogawara, Riko; Inoue, Tsuyoshi
Nagoya University
- 11:58-12:15**
TEMS-0448 **Eddy Current Loss Suppression and Thrust Improvement of Coreless Linear Motors with Additively Manufactured Windings with Auxiliary Teeth**
Wang, Zheng; Huang, Xuzhen
Nanjing University of Aeronautics and Astronautics
- 12:15-12:32**
TEMS-0714 **Investigation of Thermal Characteristics of Reluctance-Based Magnetic Lead Screw with Flux-Concentrating Structure**
Ayuzawa, Hayate; Heya, Akira; Ogawara, Riko; Inoue, Tsuyoshi
Nagoya University
- 12:32-12:50**
TEMS-0222 **Optimized Analysis of Electromagnetic Characteristics of Voice Coil Motor for Maglev**
Lu, Hao; Wang, Shuo; Kou, Baoquan
Harbin Institute of Technology

ORAL SESSION

FRIDAY, NOVEMBER 27

Room 2

OS1-18: Flux-Control, Vernier & Special Machines

Chairs

- 10:50-11:07**
TEMS-0301 **Comparison of Electrical and Mechanical Flux-Weakening Strategies in Surface-Mounted PM Motors**
Wan, Zhongxin; Long, Peiyu; Chai, Feng
Department of Electrical Engineering, Harbin Institute of Technology, Harbin
- 11:07-11:24**
TEMS-1101 **Comprehensive Analysis of Bridgeless SynRM with Multi-layer Tapered Flux Barrier**
Zhang, Chen; Wang, Yawei; Li, Junhao; Hou, Chenlei; Zheng, Yeming; Qu, Ronghai
Huazhong University of Science and Technology
- 11:24-11:41**
TEMS-0529 **Design and Investigation of a New Asymmetric Dual-stator Flux Modulation PM Arc Motor**
Chen, Nan; Fang, Shuhua; Lin, Xiangru
Southeast University
- 11:41-11:58**
TEMS-0812 **Measurement of the Rotational Speed of an Induction Motor Based on Changes in Magnetic Flux Around the Rotor**
Kavec, Matúš
Brno University of Technology
- 11:58-12:15**
TEMS-0756 **Optimal Design of Axial-Flux Permanent Magnet Motors for Humanoid Robot Joints**
Feng, Lin; Xu, Yanliang; Zhou, Peng
School of Electrical Engineering, Shandong University
- 12:15-12:32**
TEMS-0910 **Performance Evaluation of a Permanent Magnet Vernier Motor with Winding Switching**
TAKANO, YASUHIRO
Shibaura Institute of Technology
- 12:32-12:50**
TEMS-0902 **Optimization of Back-EMF Harmonics and Cogging Torque in a 6-Slot/7-Pole Doubly Salient Permanent Magnet Machine via Eccentric Pole Shaping and Center Notching**
Zhou, Shijie; Meng, Xiaoli
Nanjing University of Aeronautics and Astronautics, College of Automation

ORAL SESSION

FRIDAY, NOVEMBER 27

Room 3

OS3-6: Energy Management, EVs & Data-Driven Optimization

Chairs

- 10:50-11:07**
TEMS-0938 **Deep Reinforcement Learning for Voltage Regulation of DC-DC Buck Converters: A Comparative Study of DQN and DDPG**
Zhang, Min; Zhao, Dan; Shen, Ke
Northwestern Polytechnical University
- 11:07-11:24**
TEMS-0097 **Research on the Optimal Operation Strategy of a Photovoltaic-Driven Mine Water Treatment System**
Chen, Jianing; Ma, Xiaojing; Wang, Man; Xu, Wenpan
Xinjiang University
- 11:24-11:41**
TEMS-0551 **Estimation of Inertial and Resistance Parameters Including Track Internal Resistance for Improved Torque Control of Electric Tracked Vehicles**
Jang, Jungwoo; Kang, Ye Gu
University of Seoul, School of Electrical and Computer Engineering
- 11:41-11:58**
TEMS-0209 **Hierarchical Feature-Conditioned Reinforcement Learning for Generalizable Mixed-Integer IPMSM Design Optimization**
Chavan, Varun; Endo, Mitsuru; Tsutsui, Yukio
Institute of Science Tokyo
- 11:58-12:15**
TEMS-1065 **Monte Carlo-driven Stochastic V2G Scheduling via Deep Reinforcement Learning for Grid Stability and EV Mobility Assurance**
Htet, Naing Khant; Supatti, Uthane; Sangpanich, Umarin; Somboonviwati, Kullawadee; Siratarnsophon, Piyapath
Department of Electrical Engineering, Faculty of Engineering at Sriracha, Kasetsart University
- 12:15-12:32**
TEMS-1095 **Reinforcement-Learning-Based Purge-Disturbance Compensation for a Hydrogen Generation System Fueled by NaBH₄**
Ogawa, Daiki; Hoshi, Nobukazu
Tokyo University of Science
- 12:32-12:50**
TEMS-1169 **Multi-agent Joint Optimization for Charging Process of Electric Vehicles at Large Scales Based on NMP State Representation and Adaptive Matching**
Gao, Shuang; Zhu, Zijian; Diao, Chen
Tianjin University

ORAL SESSION

FRIDAY, NOVEMBER 27

Room 4

OS2-22: Parameter Identification & State Observers II

Chairs

- 10:50-11:07**
TEMS-0437 **Compensation for Air-Gap Estimation Errors in a Disturbance-Observer-Based Reluctance Actuator**
Zhang, Rui; Wang, Mingyi
Harbin Institute of Technology
- 11:07-11:24**
TEMS-0360 **A Hybrid TD3-Assisted Sensorless Control Method for PMSM Drives Under Parameter Uncertainty**
Ma, Xujie; She, Qi
Tianjin University
- 11:24-11:41**
TEMS-1026 **Data Sampling for Parameter Identification in Inverter-Fed Motor Drives**
YAZAKI, YUICHIRO
Nagoya University
- 11:41-11:58**
TEMS-0449 **Investigation of BEMF-Observer-Based PMSM Parameter and Health Estimation and Prediction Methods for Electric Hybrid Aircraft**
Noguchi, Shunsuke
Japan Aerospace Exploration Agency
- 11:58-12:15**
TEMS-0774 **Online Multi-Parameter Identification Strategy for PMSM Based on Adaptive Variable Structure Extended Sliding Mode Observer**
Gu, Jun; Song, Shitao; Xu, ZheXi; Xu, Dianguo
Harbin Institute of Technology
- 12:15-12:32**
TEMS-0737 **PRBS Injection Based Online Parameter Identification of PMSM With SiC Inverter Nonlinearity Compensation**
Zhong, Yiming; Gan, Chun; Ren, Haotian; Zhang, Chong
Huazhong University of Science and Technology
- 12:32-12:50**
TEMS-0562 **Super-Twisting Sliding Mode Disturbance Observer-Based Neural-Network Controller for Motor Drives**
Pham, Quang-Dai; Le-Phan, Nhat-Minh; Zhao, Chenhao; Lee, Christopher H. T.
Nanyang Technological University

ORAL SESSION

FRIDAY, NOVEMBER 27

Room 5

OS2-23: Servo & Motion Control

Chairs

- 10:50-11:10** **A Model Following Control Approach for Vibration Suppression in Servo Systems**
TEMS-0728
Zhu, Junyan; Yang, Ming; Xiang, Tianxiang; Teng, Yue; Gao, Ganlu
Harbin Institute of Technology, School of Electrical Engineering and Automation
- 11:10-11:30** **Adaptive Generalized Active Disturbance Rejection Control of PMSM Drive System Using Inertia Identification**
TEMS-0758
Liu, Hao-Wei; Zhou, Hao-Yu; Liu, Yanting; Zuo, Yuefei; Liu, Chuang; Wang, Kai
Nanjing University of Aeronautics and Astronautics
- 11:30-11:50** **Improved Load Disturbance Rejection in Induction Motor Drives Using GA-Optimized Fractional-Order PI Control**
TEMS-0985
Kumar, Krishal; Peter, Naithan
The University of the South Pacific
- 11:50-12:10** **Modeling and Control of Position–Current Dual-Loop Servo Systems for Nonlinear Disturbance Compensation**
TEMS-0590
Lan, Tianhao; Yang, Ming
Harbin Institute of Technology
- 12:10-12:30** **Position Control of Joint Module Based on Hybrid Controller using an Encoder Only on Load Side**
TEMS-0602
Guo, Huan; Wang, Jiyao; Xu, Wei
School of Electrical Engineering Southeast University
- 12:30-12:50** **QFT-Based Robust PI Controller Design with Resonance Suppression for Double-Inertia Servo Systems**
TEMS-0678
Zhang, Meiyu; Zhao, Junyu; Xu, Dianguo
Harbin Institute of Technology

ORAL SESSION

FRIDAY, NOVEMBER 27

Room 6

OS2-24: PWM, Modulation & Harmonic Control

Chairs

- 10:50-11:10**
TEMS-0240 **A Modulation Strategy for Common-Mode EMI Suppression of a Triple Two-Phase Open-Winding Bearingless Motor**
Ding, Xiaofeng; Li, Haolin; QI, XIN; Deng, Ziyu; Guo, Jiaxin
Beihang University
- 11:10-11:30**
TEMS-0378 **A Study on Selective Harmonic Elimination Technique Based on Mind Evolutionary Algorithm Optimized BP Neural Network**
Li, Jiayang
Harbin Engineering University
- 11:30-11:50**
TEMS-1081 **Effects of High Switching Frequencies in SPWM and SVPWM on the Magnetic Suspension Performances of a Single-Drive Bearingless Motor**
THONGSEESANG, Nikorn; Wattanasophon, Sirichai; Boonyapakdee, Nattapon; Sugimoto, Hiroya; Chiba, Akira; Srichiangsa, Theeraphong
Kasetsart University
- 11:50-12:10**
TEMS-1091 **Extended NSPWM for Expanding Linear Modulation Range Using Two-Cycle Averaging in Three-Phase Voltage-Source Inverters**
Morita, Sho; Kawarazaki, Keitaro; Hoshi, Nobukazu
Tokyo University of Science
- 12:10-12:30**
TEMS-0241 **Research on SHEPWM Algorithm for Non-consecutive Harmonic Elimination**
Li, Jiayang
Harbin Engineering University
- 12:30-12:50**
TEMS-0778 **Three-Sub-Sector-Based High-Frequency Zero-Sequence Circulating Current Suppression for Parallel Inverters**
Tong, Jiaxiang; Liu, Kan; Wei, Dong; Huang, Chengcong; Han, Liang; Chen, Yongdan
College of Mechanical and Vehicle Engineering, Hunan University

ORAL SESSION

FRIDAY, NOVEMBER 27

Room 7

OSS-14:

Special Session G: Advanced Topology, Control and Optimization of Power Converter Systems in Transportation Electrification

Chairs

- 10:50-11:10** **A Dual-Mode LLC Isolated DC-DC Converter for Wide Voltage Range**
TEMS-0174 Hu, Guangfu; Wu, Fengjiang
Harbin Institute of Technology
- 11:10-11:30** **Integrated Onboard Wiredwireless Charging Topology for Electrical Vehicles**
TEMS-0172 Wu, Siwei; Wu, Fengjiang
School of Electrical Engineering and Automation, Harbin Institute of Technology
- 11:30-11:50** **A Dwell-Time-Controllable Common-Mode Voltage Elimination Method for Generalized Dual-Inverter-Fed Aircraft Starter/Generator System**
TEMS-1042 Zhao, Dan; Li, Rui Long; Zhang, Min; Zhao, Guodong; Shen, Ke
Xi'an University of Technology
- 11:50-12:10** **Decentralized Power Allocation Strategy for MAB Converter-Interfaced Fuel Cell/Battery/Supercapacitor Hybrid Power Systems in Electric Propulsion Aircraft**
TEMS-0136 Yang, Jinxu; Zhang, Yifan; Li, Xiangke; Jiang, Wentao; Zhao, Xin; Wu, Xiaohua
Northwestern Polytechnical University
- 12:10-12:30** **Enhanced Current Reconstruction Method in Low Modulation Index Area for Three-Phase Motor Drives with Single DC-link Current Sensor**
TEMS-0992 Li, Zhiwei; Wang, Zheng
Southeast University
- 12:30-12:50** **An Optimized Carrier Phase-Shift PWM for High-Frequency Torque Ripple and Current Harmonics Suppression in Dual Three-Phase PMSMs**
TEMS-0923 Zhou, Ruoxiao; Zhang, Zhuoran; Li, Fei
Nanjing University of Aeronautics and Astronautics

ORAL SESSION

FRIDAY, NOVEMBER 27

Room 8

OSS-15:

Special Session J: Emerging Topologies and Sensorless Drive Technologies for High-Performance Permanent Magnet Machines

Chairs

- 10:50-11:10**
TEMS-0800 **A Position Vector Tracking Observer for Permanent Magnet Synchronous Machines Based on the Improved Nonlinear Flux Observation**
Zeng, Depeng; Zheng, Qingwei; Feng, Xiaoqian; Shi, Wenbo; Liu, Mingjun; Ou, Junfeng; Ren, Yueru; Cao, Haifeng; Zhang, Qiang; Zhao, Ying
College of Intelligent Systems Science and Engineering, Harbin Engineering University
- 11:10-11:30**
TEMS-0204 **Investigation of Torque and Thrust Ripples Mechanisms and Suppression Methods of FMMS**
Yu, Yichen; Wei, Fangrui; Wang, Qian; Niu, Tongmao; Liu, Xinghao; Hu, Jianhui; Li, Yong
Harbin Institute of Technology
- 11:30-11:50**
TEMS-1117 **Position Sensorless Estimation of SPMSM at Extreme Low Speed Region Based on Voltage**
Saito, Yutaro; Doki, Shinji
Nagoya University
- 11:50-12:10**
TEMS-1001 **Root-Locus-Based Design of a Position Observer for High-Frequency Voltage Injection Sensorless Control of Permanent Magnet Linear Motors**
Fang, Jiayang; Dou, Chujie; Yu, Jiaqiang; Yu, Qingbo; Luo, Hao; Wu, Shaopeng
Harbin Institute of Technology
- 12:10-12:30**
TEMS-0583 **Wide-Speed-Range Control of Robotic Lower-Limb Joint Actuators: Strategies Considering Magnetic Saturation Under Jumping Conditions**
Gao, Yuan-Liang; Shi, Dan; Liu, Zhun; Wang, Xi-bo; Wang, Yun-Chong; Cai, Shun
Zhejiang University
- 12:30-12:50**
TEMS-0662 **Reliability-Oriented Design Considerations Beyond Cogging Torque Minimisation in Salient-Pole Permanent Magnet Generators**
Limmuel, Eugenia; Gunawan, Fergyanto; -, Sofyan; Nur, Tajuddin; Abduh, Syamsir
Automotive and Robotics Program, Computer Engineering Department, Binus ASO School of Engineering, Bina Nusantara University, Jakarta, Indonesia

WEDNESDAY NOVEMBER 25

POSTER SESSION

POSTER SESSION

WEDNESDAY NOVEMBER 25

VENUE

14:10-16:10 PS 1: Electrical Machines and Field Analysis

Chairs

- TEMS-0870 A Complex Permeability-Based Homogenization Method for Efficient Analysis of Additively Manufactured Lattice Structures**
Kim, GiHun; Kim, Seong-Hun; SON, CHANGHEE; An, Yeongjun; Um, Dae-Yong
Gyeongsang National University
- TEMS-1000 A Finite Element Method Enhanced Physics-Informed Neural Network and its Application in Electromagnetic Field Calculation of Transformer Core Under DC-Biased Conditions**
Gao, Shengze; Wu, Yiting; Zhao, Xiaojun; Gao, Yanhui; Tan, Yaxi; Wang, Jialu; Li, Haoda
North China Electric Power University
- TEMS-0624 A Hierarchical Electromagnetic-Structural Design Framework for High-Speed Outer-Rotor SPMSMs**
Jung, Jaehwan; Song, In-seok; Park, Dong-Hyeon; Nam, Taek-Hyo; Jung, Sang-Yong
Sungkyunkwan university
- TEMS-0026 A High-Voltage 600-kW 13000-rpm Permanent-Magnet Motor with Assembled-Tooth Stator Core**
Bi, Liuxin; Sha, Honglei; Hu, Yonglu; Shi, Huangzhang
Zhejiang EMAGING Technology Co.,Ltd.
- TEMS-1043 A Locally Variable-Exponent Core Loss Model via Legendre Dual Transform for Multi-Condition Prediction**
Cheng, Shihao; Zhang, Xiaofan; Wang, Chenbo; Guo, Xinyu; Liu, Shiyao; Yan, Hao; Zhao, Haisen
North China Electric Power University
- TEMS-0487 A Multi-Sensor Data Fusion Method for PMSM Based on Asynchronous Multi-rate Kalman Filter**
Sun, Qihang; Fang, Shuhua; Xu, Qiangren; Lin, Xiangru
School of Electrical Engineering, Southeast University
- TEMS-0505 A Novel Low-Profile Homopolar Magnetic Bearing without Permanent magnets**
Sumiyama, Chiharu; Sugimoto, Hiroya
Tokyo Denki University
- TEMS-0498 A Novel Outer-Rotor Hybrid-Array Permanent Magnet Vernier Machine for Improved Torque Characteristics**

WEDNESDAY NOVEMBER 25

POSTER SESSION

- Zheng, Yili; Zhao, Fei
Harbin Institute of Technology (Shenzhen)
- TEMS-0400 A Novel Standstill Test Method at An Arbitrary Rotor Position for Rapid Identification of Synchronous Machine Parameters**
Huang, Lei; Wang, Jin; Qi, Yaping; Liu, Jianjun; Yang, Yong; Zhou, Libing
State Key Laboratory of Advanced Electromagnetic Technology (Huazhong University of Science and Technology)
- TEMS-0621 A Review of Modelling Methods for Superconducting Machines**
Chow, Calvin C. T.; Liu, Wei; Zhang, Zhouyang; Niu, Shuangxia; CHAU, Kwok-Tong
The Hong Kong Polytechnic University
- TEMS-0474 A Study on Parasitic Torque and Crawling Characteristics of Single-Phase Induction Motors according to Rotor Slot Number and Geometry Variations**
Park, Jeong-hun; Ryu, Seong-han; Kim, Jin-han; Park, Jin-ha; Kim, Joo-hyeong; Kim, Ki-chan
Hanbat National University
- TEMS-0677 AI-Driven Free-Form Topology Optimization Framework for Zero Sequence Current Reduction in Open-End Winding Motors**
Jeong, Gihwan; You, Yongmin
Chonnam National University
- TEMS-0813 An FEA-Circuit Framework for Accelerated Wideband Impedance Modelling of Hairpin Windings Based on Geometric Symmetry and Layout Flexibility**
Wang, Mingjie; Zou, Tianjie; Ren, Xiang; Huang, Hailin; Naderiallaf, Hadi; Walker, Adam; Gerada, Chris
University of Nottingham
- TEMS-0611 Analysis and Optimal Design of Single-Stator Dual-Rotor Coreless Permanent Magnet Synchronous Machine for Flywheel Energy Storage**
Sun, Ming Xin; Guo, Yizhe; Xu, Yanliang
Shandong Jiaotong University
- TEMS-0417 Analysis and Optimization of Tangential Electromagnetic Force in 12s8p Interior Permanent Magnet Synchronous Motor**
Hu, Yusheng; Zhao, Xumin; Zhou, Bo; Sun, Wenjiao; Zhou, Chenlin
Gree Electric Appliances, Inc. of ZhuHai, China
- TEMS-0871 Analysis of 3-axis Magnetic Signatures and Physical Principles Depending on Circumferential Defect Location in Current-Injected Underground Pipelines**
Baek, Seung Ju; Kim, Eung Ju; Jeong, Jaehoon; Park, Gwan-Soo
Pusan National University
- TEMS-1206 Analysis of Eddy Current Losses in Vernier Permanent Magnet Machines with Different Rotor Topologies**
Wu, Leilei; Yang, Fan; Wang, zengyu; Wang, Yawei
Linyi University
- TEMS-0792 Analysis of Electromagnetic Characteristic Degradation depending on Temperature**

WEDNESDAY NOVEMBER 25

POSTER SESSION

and Design Strategies for Induction Motors

An, GeunHwi; Chae, Seung-Ahn; Park, Gwan-Soo

KIEE

TEMS-0570 Analysis of Hairpin Winding AC Losses in End-Winding Regions Under SVPWM Excitation

Gai, Yaohui

University of Warwick

TEMS-0744 Analysis of Short-Circuit Suppression for Toroidal Winding Axial Flux Fault-Tolerant Motor

Zhang, Longyu; Sun, Jianbo; Gan, Chun; Luo, Wenjun; Kong, Wubin; Qu, Ronghai

Huazhong University of Science and Technology

TEMS-0216 Analysis of Simulation Model for Three Sets of Windings in the Same Slot of a Permanent Magnet Synchronous Generator

LUO, LING; QIU, ZEHE

Department of Electrical Engineering Northwestern Polytechnical University

TEMS-1189 Analysis of Stator Slot and Rotor Tooth Combinations of Dual-Armature Flux-Switching Electrically Excited Machines

Wen, Hui; Chen, Bingtuo; Wang, Wenting; Wu, Chuyan; Cai, Jiongjiong; Wu, Lijian

Zhejiang University

TEMS-0253 Analysis of the Influence of Winding Pitch on Stator Slot Leakage Inductance in Induction Motors

Liu, Hui; Wu, Xinzheng

Qingdao University

TEMS-0322 Analytical Calculation of Eddy Current Losses in Additively Manufactured Rotors of Synchronous Reluctance Machines

Langanke, Max; Behrendt, Marius; Ponick, Bernd

Leibniz University Hannover - Institute for Drive Systems and Power Electronics

TEMS-0971 Analytical Parameter Modeling Based on Generalized Two-Reaction Theory for VSOZC Pole-Changing Synchronous Machines

Zhang, Jingliang; Wang, Jin

Huazhong University of Science and Technology

TEMS-0310 Application of Halbach Permanent Magnet Array in Force Motor for Direct Drive Servo Valve

Tan, XinYi

School of Automation, Northwestern Polytechnical University

TEMS-0161 Applying Homogenization Method to Calculation of Copper Loss in Sheet Windings

Imamori, Satoshi; Takahashi, Yasuhito

Fuji Electric Co., Ltd.

TEMS-1006 Arc Energy-Based DC Fault Detection for 1000 V Electric Vehicle Systems

Park, Jun-Kyu; Ahn, Hyun-Mo; Oh, Yeon-Ho; Song, Ki-Dong

Korea Electrotechnology Research Institute

WEDNESDAY NOVEMBER 25

POSTER SESSION

- TEMS-0184 Cogging Torque Characteristics under Coupled Effect of Asymmetric Rotor and Hybrid Eccentricity**
Jia, Zexin; Chen, Qian; Xu, Gaohong; Liu, Zhengmeng; Liu, Guohai
Jiangsu University
- TEMS-0412 Collaborative optimization design of minimum copper loss for coreless axial flux PCB motor based on winding topology and PCB winding process**
Ren, Hang; Jiang, Siyuan; Gao, Cong; Gao, Mengzhen; Zheng, Shuyu; Jia, Zan; Xu, Xiaozhuo
School of Electrical Engineering and Automation, Henan Polytechnic University, Jiaozuo, China
- TEMS-0126 Comparative Study of Asymmetric Rotor Topologies for Torque Performance Improvement in PMSynRMs**
Sun, Haiwen; Bao, Yuli; Li, Jing; Wang, Shuo; Zhang, He
University of Nottingham Ningbo China
- TEMS-1187 Comparative Study of Rotor Topologies for Yoke-less Axial-Flux Permanent Magnet Machines in eVTOL Applications**
Ren, Tianyang; Cao, Ruiwu
Nanjing University of Aeronautics and Astronautics
- TEMS-0623 Comparison of Loss and Efficiency for Si or SiC Power Semiconductors and 2-Level or 3-Level Inverters in xEV Motor System**
Takahashi, Tomohira; Kitao, Junji; Yamamoto, Takayoshi; Hanioka, Shota; Iezawa, Masahiro; Kondo, Ryota; Ishiguro, Yoshiaki; Miyama, Yoshihiro
Mitsubishi Electric Corp.
- TEMS-0470 Composite Decoupling Control for PMSynRM via Variable-Gain SMC and Adaptive RBF Network**
Liu, Yichen; Yang, Wenqi; Shi, Suqi; Hua, Yizhou; Zhao, Cheng
Jiangsu University
- TEMS-1004 Computation of Magnetizing Inrush Currents of Transformers with Complex Frequency-Domain Finite Element Method**
Gao, Shengze; Wang, Siyuan; Zhao, Xiaojun; Gao, Yanhui; Li, Haoda; Liu, Lanrong
North China Electric Power University
- TEMS-0807 Computationally Efficient Steady-State Electromagnetic Analysis of PMSMs Using a Spatiotemporal Harmonic Balance Finite Element Method**
Zhang, Yuting; Zhao, Xiaojun; Gao, Shengze; Gao, Yanhui; Mu, Hualin
North China Electric Power University
- TEMS-0366 Co-optimization Design of Additive Manufacturing Winding and Cooling Channel for Direct Cooling Permanent Magnet Arc Synchronous Motor**
Liu, Yansong; Huang, Xuzhen
Nanjing University of Aeronautics and Astronautics
- TEMS-1102 Design and Analysis of a Drive-integrated PCB-stator PMSM**
Cao, Zhi; Yan, Yuteng; Shen, Yiming; Lee, Christopher H. T.

WEDNESDAY NOVEMBER 25

POSTER SESSION

- Nanyang Technological University
- TEMS-0088 Design and Analysis of Active Magnetic Bearings for High-Speed Generators in a Supercritical CO₂ Environment**
Dong, Qizhi; Wang, Xiaoyuan
Tianjin University
- TEMS-0916 Design and Comparative Evaluation of Slot-Pole Combinations for Hairpin Winding in Permanent Magnet Vernier Machine**
Mughal, Naqash; Khan, Faisal; Um, Dae-Yong; Haider, Hamza; An, Yeongjun; Shah, Saleem
Gyeongsang National University
- TEMS-0697 Design and Optimization of A Highly Integrated Active and Passive Magnetic Bearing Featuring Overhang Stator Yoke**
Chen, Xinran; Wang, Kaixuan; Le, Yun; Wang, Kun; Zheng, Shiqiang
Beihang University
- TEMS-0319 Design and Optimization of the Starting Performance of a Line-start Synchronous Reluctance Motor**
Hu, Yusheng; Xiao, Yong; Shi, Jinfei; Li, Xia; Chen, Bin
Guangdong Provincial Key Laboratory of High-speed and Energy Conservation Motor System; GREE ELECTRIC APPLIANCES, INC. of ZHUHAI
- TEMS-0398 Design and Suspension Force Analysis of Dual Three-Phase Bearingless Permanent Magnet Synchronous Motor**
Hua, Yizhou; Zhao, Cheng; Liu, Yichen; Pan, Wei
Jiangsu University
- TEMS-0070 A high-specific-power electric motor with a liquid cooling system**
Shirokov, Anton; Ivanov, Nikolay; Zhuravlev, Sergey
Moscow Aviation Institute
- TEMS-0450 Modeling and Analysis of Iron Loss in High-Speed Maglev Long Stator Linear Synchronous Motor**
Chen, Hongjun; Wei, Rong; Cai, Yuanlong; Ge, Qiongquan
State Key Laboratory of High-Density Electromagnetic Power and Systems, Institute of Electrical Engineering, Chinese Academy of Sciences
- TEMS-0089 A Torque Optimization Method for IPMSM Based on Asymmetric Rotor Structure and Dual-Stage Magnetic Flux Modulation**
Dong, Qizhi; Wang, Xiaoyuan
Tianjin University
- TEMS-0221 Fast analytical calculation method and fine analysis of rotor eddy current loss for two-poles slotted solid rotor induction motor**
Yi, Jiawei; Cai, Boyan; Zhu, Zhihao; Zhang, Quan; Chu, Shuaijun; Zhao, Haisen; Zhang, Dongdong
North China Electric Power University

WEDNESDAY NOVEMBER 25
POSTER SESSION

WEDNESDAY NOVEMBER 25
POSTER SESSION

POSTER SESSION

WEDNESDAY NOVEMBER 25

VENUE

16:30-18:30 PS 2: Special Sessions A, B, F, H

Chairs

- TEMS-0485 Investigation of the Bidirectional Torque Tradeoff Mechanism in Asymmetric Interior PMSMs Based on Rotor MMF–Reluctance Analytical Model**
Rong, Cunhao; Yang, Hui; Liu, Dabin; Yu, Feng; Zhu, Xuhui; Fang, Shuhua; Lin, He-Yun; Yu, Li; Zhang, Zhuoran
College of Automation Engineering, Nanjing University of Aeronautics and Astronautics
- TEMS-0146 Online Inductance Identification of PMSM Based on Multi-Synchronous Reference Frame Observer**
Wang, Nanjiang; Wang, Yuanlin
Institute of Electrical Engineering, Chinese Academy of Sciences
- TEMS-0878 Multi-Physical Field Coupling Modeling and Inconsistency Rectification for CEDOFPSG**
Pei, Tianyou; Zhang, Chi; Li, Jing; Zhang, Xiaochen; Jiang, Zhe; Yu, Guanjie; Cao, Haiyang; Liu, Wei; Wan, Hongyu; Zhang, Limin
Ningbo Institute of Materials Technology & Engineering, Chinese Academy of Sciences
- TEMS-0553 A Damping-Enhanced Harmonic Suppression Method for Integrated Winding Dual-Rotor PMSM Under Decoupled Control**
Zhang, Zhang; Jiang, Mingyuan; Dong, Zixu; Zhang, Zhouyang; Niu, Shuangxia; CHAU, Kwok-Tong
The Hong Kong Polytechnic University
- TEMS-0865 Sensorless Control for High-Speed Maglev With Improved Super-Twisting Integral Sliding Mode Observer**
Chen, Weixin; Ge, Qiongxuan; Zhang, Bo; Zhu, Jinquan
State Key Laboratory of High-Density Electromagnetic Power and Systems, Institute of Electrical Engineering, Chinese Academy of Sciences
- TEMS-0883 Safety-Projected Adaptive Super-Twisting Observer-Based Model Predictive Speed Control for Permanent-Magnet Synchronous Motors**
Wan, Hongyu; Zhang, Chi; Chen, Silu; Qiu, Shuheng; Cao, Haiyang; Shen, Yiming; Liu, Wei; Yang, Guilin
Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences
- TEMS-0990 Super-Twisting Sliding Mode Control for an Axial Active Magnetic Suspension System in Bearingless Motors**
Zhu, Chaoning; Chen, Jinhua; Liu, Wei; Cao, Haiyang; Hu, Liang; Su, Rui; Zhang, Chi
UCAS

WEDNESDAY NOVEMBER 25

POSTER SESSION

- TEMS-1116 Neural Network Based Inductance Identification Method for Permanent Magnet Synchronous Motors**
Zhao, Feifan; Wang, Qiwei
Harbin Institute of Technology
- TEMS-0392 Current Coordination Optimization Strategy for Sinusoidal Doubly Salient Electromagnetic Generator Based on GWO-GPR**
Zhou, Xingwei; Zhao, Kainuo; Wang, Jie; Chang, Xiang; Guan, Zhiyu
Hohai University
- TEMS-0406 Inertia Support Control of Variable-Speed Pumped Storage Unit**
Xu, Guorui
North China Electric Power University
- TEMS-0426 Coordinated Control of Voltage Support and Inertia Support for a Dual-Axis Excitation Synchronous Condenser**
Xu, Guorui; Cao, Zhongcheng; Yang, Guangliang
North China Electric Power University
- TEMS-0436 Grid-Strength-Aware Adaptive Coordinated VSG Parameter Control for Grid-Forming PMSG-Based Wind Energy Systems**
Wang, Jie
Hohai University
- TEMS-0484 Research on the structure of high-speed motor foil gas radial bearing**
Chen, Bin; Gong, Gao; Chen, Zhen; Su, Jiuzhan; Li, Liyi
Harbin Institute of Technology
- TEMS-0491 Research on strength of special-shaped rotor of ultra-high speed permanent synchronous motor**
Chen, Bin; Li, Liyi; Jia, Jinxin; Lin, ShiXiang
Harbin Institute of Technology
- TEMS-0525 Fault-Tolerant Control of Parameter Mismatch Faults in Modular Multi-Unit Permanent Magnet Synchronous Motor**
Tang, Chen; Fan, Ying; Chen, Jinpei; Lee, Christopher H. T.
Southeast University
- TEMS-0526 Model-Free Control of Non-contact Integrated Permanent Magnet Vernier Motor Based on Recursive Least Squares**
Chen, Jinpei; Fan, Ying; Wang, Wusen; Tang, Chen; Lee, Christopher H. T.
Southeast University
- TEMS-0541 Fault-Tolerant Control of 5-DOF AMBs Based on Asymmetric Sensor Topology and Analytical Redundancy**
Li, Haoyang; Wang, Kun
Beihang University
- TEMS-0603 Coordinated LVRT Strategy for Doubly-Fed VSPS Units With Dynamic Crowbar and Demagnetization Control**
Lu, Cheng; Zhang, Wenming; Wang, Xu; Zhang, Li

WEDNESDAY NOVEMBER 25

POSTER SESSION

- Hohai University
- TEMS-0732 Thermal Analysis and Water-Cooling Design of Flux Modulation Yokeless and Segmented Armature (FM-YASA) machine**
Liu, Tao; Shao, Lingyun; Zhang, Zhuoran; Wu, Zhongze
Southeast University
- TEMS-0779 Fuzzy-Adaptive Dual-Machine Coordination Control of Axial Flux-Switching Permanent Magnet Motors**
Chen, Aowen; Shan, Siyu; Zhang, Chenxuan; Duan, Huijuan; Zhang, Wei
Nantong University
- TEMS-0854 Online Identification Method for Mechanical Parameters of NIPMVM Based on Sequence-Decoupled Extended Sliding Mode Observer**
Jia, Weijie; Fan, Ying; Yang, Shirui; Wang, Wusen
School of Electrical Engineering, Southeast University, China
- TEMS-1028 Super-Twisting Extended State Observer-Based Active Disturbance Rejection Speed Controller for Variable Flux Memory Machine Drives**
Wang, Chenggang; Yang, Hui; Yan, Jianhu; Lin, He-Yun; Yu, Li; Zhang, Zhuoran; Huang, Lei; Su, Yi
College of Automation Engineering, Nanjing University of Aeronautics and Astronautics
- TEMS-0093 Nonlinear quasi-3D hybrid analytical model for axial flux permanent magnet machines**
Zhu, Yan; Cao, Donghui; Zhou, You; Zhao, Chenhao; Cao, Zhi; Lee, Christopher H. T.
Zhejiang University of Water Resources and Electric Power
- TEMS-0118 Thermal Modeling and Characterization of a Dual-Rotor AFPM Machine With Rotor Ventilation Openings**
Cao, Donghui; Zhao, Chenhao; Zhou, You; Zhu, Yan; Lee, Christopher H. T.
Nanyang Technological University
- TEMS-0207 Multi-Objective Geometric Optimization of E-Shaped DC Electromagnets under Dimensional Constraints: Balancing Attraction Force and Power loss**
Li, Renping; Cui, Changzhi; Liu, Kan; Lei, Yihan
College of Mechanical and Vehicle Engineering, Hunan University
- TEMS-0335 Hotspot Prediction and Winding Size Effects of In-Slot Oil-Cooled Machines Based on Subdomain Method and Layered Adaptive Thermal Network**
Cao, Yu; Wang, Jin; Huang, Xi; Lin, Kun; Xiao, Jian; Li, Zequan; Zhou, Libing
Huazhong University of Science and Technology
- TEMS-0569 Multi-Objective Structural Optimization of an Aircraft Drive Motor Using Specially Shaped Windings to Enhance Air Cooling**
Liu, Chuanshi; Jiang, Rui; Dong, Tenghui; Zhu, Chong; Zhang, Xi
Shanghai Jiao Tong University
- TEMS-0818 Optimization Design of the Immersed Cooling YASA PMSM Using the Improved Neural Network and Particle Swarm Optimization**
Zhou, Peng; Xu, Yanliang; Wang, Changhu

WEDNESDAY NOVEMBER 25

POSTER SESSION

Shandong University

- TEMS-1058** **A LCC Current-Allocation Co-Design Strategy with Dual-Specification Flat-Wire Windings for In-Slot Oil-Cooled Machines**
Li, Zequan; Cao, Yu; Ma, Yiming; KANG, Shuai; Wang, Jin; Zhou, Libing
State Key Laboratory of Advanced Electromagnetic Technology School of Electrical and Electronic Engineering Huazhong University of Science & Technology
- TEMS-0489** **Magnetic Field Calculation of Uneven Air Gap Permanent Magnet Motor Based on Nonlinear Magnetic Network Model**
DU, Yunlu; Ding, Shichuan; Hang, Jun; Li, Ya; Wang, Runyu; Huang, Yunkai
School of Electrical Engineering and Automation, Anhui University
- TEMS-0927** **Investigation of Asymmetrical Magnetic Pole Variable Flux Machines with Different Magnet Arrangements**
Li, Ya; Wang, Xinhao; Wang, Runyu; Ding, Shichuan; Du, Yunlu
School of electrical engineering and automation, Anhui University
- TEMS-0928** **Influences of Magnetic Barrier Design on Consequent-pole Variable Flux Memory Machine**
Li, Ya; Yang, Ziyi; Wang, Runyu; DU, Yunlu; Ding, Shichuan
School of electrical engineering and automation, Anhui University
- TEMS-1052** **A New Permanent Magnet Vernier Motor with Significant Reluctance Effect for Low-Speed Direct-Drive Applications**
Qin, Shihao; Shi, Yujun; Wang, Jiwei; Wang, Meng; Jian, Linni
Xinjiang University
- TEMS-1073** **Electromagnetic Performance, Mechanical Strength, and Thermal Analysis of a Permanent Magnet Vernier Motor with a Flux-Barrier Rotor for Low-Speed Direct-Drive Applications**
Qin, Shihao; Shi, Yujun; Wang, Jiwei; Wang, Meng; Jian, Linni
Xinjiang University
- TEMS-1114** **Investigation of Split-Tooth Number in a Transverse-Flux Rotary-Linear Machine**
Luo, Yehui; Li, Zhenghao; Yin, Hang; Niu, Shuangxia
The Hong Kong Polytechnic University
- TEMS-1182** **Design of a Flux Concentrating Doubly Salient Interior Permanent Magnet Fault Tolerant Vernier Machine for Marine Propulsion**
Zhao, Defeng; Zhu, Jingwei; Cai, Yaqian; Wang, Anni
College of Marine Electrical Engineering, Dalian Maritime University
- TEMS-0143** **Shaft-Voltage Analysis of Five-Phase Fault-Tolerant Flux-Modulated Permanent Magnet Machine Based on Parasitic Capacitance Modeling**
Fang, Hongwei; Zhang, Yuxin; Zhang, Jinguo
Tianjin University
- TEMS-0140** **Coordinated Optimization of Stator Core Loss and Torque for Double-Rotor Flux-Modulated Permanent Magnet Motor**
Fang, Hongwei; Su, Xiaowan; Zhang, Jinguo

WEDNESDAY NOVEMBER 25

POSTER SESSION

- TEMS-1089 Tianjin University
Non-Destructive Inspection of Through-Glass Vias for Advanced Electrical Packaging Reliability
Jeon, Mansik
Kyungpook National University
- TEMS-0141 **Multisensor Fusion Diagnosis for PMSM Stator Winding Faults**
Fang, Hongwei; Shen, Haoyu; Song, Runan
Tianjin University
- TEMS-0925 **Frame-Disturbance Oriented Identification and Control of Axial Hybrid Magnetic Bearing Using Phase-Compensated ESO**
Zhu, Yuxiang; Gao, Fanqiang; Shan, Kaiyu; Zhang, Wei; Li, Yaohua
Institute of Electrical Engineering, Chinese Academy of Sciences

WEDNESDAY NOVEMBER 25
POSTER SESSION

POSTER SESSION

THURSDAY NOVEMBER 26

VENUE

8:30-10:30 PS 3: Power Electronics and Motor Drives

Chairs

- TEMS-0726 Flux-Linkage Observer-Assisted Frequency-Domain Inertia Identification for PMSM Servo Systems**
Gu, Jun; Song, Shitao; Xu, ZheXi; Xu, Dianguo
Harbin Institute of Technology
- TEMS-0986 Luenberger Observer-Based Circulating Current Estimation for Incipient Inter-Turn Short-Circuit Faults in PMSMs**
Park, Jeongbeen; Choi, Hyeon-Gyu
Incheon National University
- TEMS-0267 A 300 kW SiC Converter Based on Paralleled SiC MOSFET Modules Achieving a Power Density of 1.45MW/m³**
Ning, Yuhao; Li, Yan; Xiu, Delong; Yuan, Xibo; Liu, Quanrui
China University of Mining and Technology
- TEMS-0266 A Four-Phase Three-Port Capacitive-Energy-Transfer DCDC Converter With QAB-Assisted Interphase Voltage Balancing for Multi-Voltage DC Grids**
Zhang, Wei; Liu, Shiming; Liu, Jing
Northeast Electric Power University
- TEMS-0385 A Fuzzy-Coefficient-Based Fast and Accurate MTPA Control for the IPMSM**
Zhu, Guanyu
Nanjing University of Aeronautics and Astronautics
- TEMS-0641 A High-Order Decoupled Extended State Observer based ADRC for CSI-Fed PMSM Drive**
Jing, Bingwei; Prasad, Ravneel; Dutta, Dr Rukmi; Chu, Guoyu
The University of New South Wales
- TEMS-1087 A Hybrid Multilevel Inverter Topology for Open-End Winding PMSM with a Floating Capacitor**
Huang, Zhen; Ruan, Shuyue
Nanchang University
- TEMS-0131 A Low-Harmonic Torque/Levitation Decoupling Control Strategy Based on Vector Constraints for Single-Winding Bearingless Motors**
Yan, Hui; Bao, Xucong; Wang, Xiaolin; Chen, Yao; Shi, Tengrui
Nanjing University of Aeronautics and Astronautics
- TEMS-0148 A Magnetic Bearing Vibration Suppression Method Based on Notch Filter and**

THURSDAY NOVEMBER 26

POSTER SESSION

Modified Variable Gain ESO

Wang, Xiaoyuan; Zhu, Donghu

Tianjin University

TEMS-0107 A Non-Isolated Four-Switch Common-Ground AC-DC Converter

Yang, Jiangpeng; Wang, Weiyu; Xu, Lefeng; Kang, Wenqian

Great Bay University; Tsinghua University

TEMS-0889 A Novel Active Damping Method for Three-Phase Electrolytic Capacitor-Less PMSM Drive Systems

Yuan, Cheng; Wang, Zixuan; Huang, He; Wang, Yi

Harbin Institute of Technology, Shenzhen

TEMS-0668 A Position Estimation Error Suppression Strategy for Electrolytic Capacitorless PMSM Drives Using Generalized Integrator ESO-PLL

Wu, Chuyan; Wu, Lijian; Wang, Tao; Zhang, Bing; Wang, Yi

Zhejiang University

TEMS-0173 A Real-time Resolver Emulator with Fault Injection for Rapid Validation

Luo, Yi

University of Connecticut

TEMS-1085 A Simplified Modulated Model Predictive Control Strategy for Permanent Magnet Synchronous Motor Drives

Huang, Zhen; Yang, Xia

Nanchang University

TEMS-0237 A Wide-Range Control Method for PMSM Based on Dynamic Power Compensation

Xiaoshun Zhang; Keyuan Huang

Hunan University

TEMS-0327 Adaptive Super-Twisting Control for NPC Converters Based on Extended Reactive Power Theory Under Unbalanced Grid Conditions

Zhang, Wei; Wei, Jing; Liu, Shiming; Liu, Jing

Northeast Electric Power University

TEMS-0149 An Improved Carrier-Based PWM Strategy of Open-End Winding PMSM With Isolated DC Sources for Current Ripple Reduction

Liu, Yufei; Zhang, Guozheng; Liu, Bo; Jin, Xuefeng; Gu, Xin

Tiangong University

TEMS-1056 Analysis of Soft-Switching Control Strategies for ARCPSI Inverter Circuit

Li, Ruitong; Pan, Liangyu; Sun, Tianfu; Liang, Jianing

Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences

TEMS-0547 Closed-Loop Two-Port Small-Signal Modeling of Dual Active Bridge Converters for System-Level Analysis of Dual-Bus DC Microgrids

Su, Xiaochen; Wang, Haiyun; Tian, Yizhi; Cheng, Tao

Xinjiang University

TEMS-0442 Cooperative Force Allocation Control of a Dual-Linear-Motor Direct-Drive Wafer Transport Vehicle

THURSDAY NOVEMBER 26

POSTER SESSION

- Yang, Tianle; Huang, Xuzhen; Yu, Wei; Ding, Ziyi
Nanjing University of Aeronautics and Astronautics
- TEMS-0787 Coordinated Voltage-Sag Feedforward Control of Grid-Forming Inverters Considering Grid Strength Variations**
Cheng, Tao; Wang, Haiyun; Tian, Yizhi; Su, Xiaochen
Xinjiang University
- TEMS-0349 Current Harmonic Suppression in Induction Motor Drives Using a Decoupled Notch Extended State Observer**
Chen, Yang; Liu, Jiaxi
School of Electrical Engineering and Automation, Harbin Institute of Technology
- TEMS-0284 Damped Newton Based Loss Minimization Control of IPMSM Considering AC Copper Loss**
Jin, Hao; Zhou, Jiayue; Ren, Bin; Zhang, Jian
Zhejiang University
- TEMS-0249 Data-Driven Adaptive Control of Vienna Rectifier Based on Multi-Stage Heuristic Evaluation and Reduced-Dimensional LHS**
Liu, Jing; Zhang, Wei; Liu, Shiming
Northeast Electric Power University
- TEMS-0853 Deadbeat Predictive Current Control Considering Magnetic Saturation Effects for PMaSynRM**
Tan, Kaiwen; Su, Jianyong; Chen, Xiaowen; Yang, Guijie
School of Electrical Engineering and Automation, Harbin Institute of Technology
- TEMS-0796 Design of Axial-Flux Counter-Rotating Dual-Rotor Permanent Magnet Synchronous Motor for Aviation Electric Propulsion**
Ge, Jiaxu; Huang, Wenxin
Nanjing University of Aeronautics and Astronautics
- TEMS-0345 Digital Twin Modeling Method for Buck Converter Based on APSO-Elman Neural Network**
Wan, Sihao; Yan, Keyu
Wuhan University of Science and Technology
- TEMS-0198 Dual-Loop Control Strategy for Bearingless Magnetic Levitation Pump Based on LADRC**
Li, Ziyuan; Bao, Xucong; Wang, Xiaolin; Shi, Tengrui; Huang, Sihuan
Nanjing University of Aeronautics and Astronautics
- TEMS-0764 Enhanced Back-EMF Observer Based on a Predesigned Transfer Function for Position Sensorless Control of PMSMs**
Yu, Kailiang; Wang, Huanzhi; Li, Tianyi; Cao, Zhi; Zhao, Chenhao; Lee, Christopher H. T.
Nanyang Technological University
- TEMS-1079 Enhanced Deadbeat Predictive Current Control of High-speed PMSM with Explicit Harmonic Back-EMF Modeling and Residual Harmonic Compensation**
Xu, Li; Li, Jing; Gu, Chunyang; Zhang, He; Zhang, Xiaochen; Du, Dalin

THURSDAY NOVEMBER 26

POSTER SESSION

University of Nottingham Ningbo China

- TEMS-0181 Flying Start Using Rectified Current in High-Speed Range**
Lee, Yoon-Seong; Kim, Min-Hyo; Kim, Jun-Hyung
Hyundai KEFICO Cooperation
- TEMS-0104 Hall Sensor Integration and Control Methodology of a High-Speed Inner-Hollow Outer Rotor BLDC Motor for Yarn Feeding Textile Machinery**
Saha, Surajit
Indian Institute of Technology, Delhi
- TEMS-0276 High-Efficiency Motor Drive Using a T-type Three-Level Inverter with Two-Level Operation**
Hanawa, Fumihiko; Ohguchi, Hideki
Tokai University
- TEMS-0943 High-frequency Motor modelling for conducted EMI Analysis in inverter-fed Drives**
Prasad, Ravneel; Jing, Bingwei; Chu, Guoyu; Dutta, Dr Rukmi
Student
- TEMS-1030 High-Precision Standstill Parameter Identification for Induction Motors based on Voltage Reconstruction Considering Inverter Nonlinearity**
Xie, Zheng; Li, Wenlong; Zhu, Jingheng; Quan, Yu
Nanjing University of Science and Technology
- TEMS-0948 HOGI-FLL-Based Adaptive Notch Filter for Mechanical Resonance Suppression in Flexible Load Servo Systems**
Fan, Ni-Ming; Zhou, Hao-Yu; Nie, Jie; Wang, Kai; Zuo, Yuefei; Liu, Chuang
Nanjing University of Aeronautics and Astronautics
- TEMS-0290 Improved Fault-Tolerant Strategy for Robotic Joint PMSM under Open-Phase Fault with Control Mode Switching**
Lin, Cunjian; Liu, Yi; Liu, Keji; Zhang, Wenjie
School of Electrical and Electronic Engineering, Huazhong University of Science and Technology, Wuhan, China
- TEMS-1173 Improved Finite Control Set Model Predictive Control Using ASMDO of an Interleaved Floating DC-DC Multilevel Boost Converter**
Wang, Yuxia; Liang, Bo
Northwestern Polytechnical University
- TEMS-0979 Improved Sensorless Position Estimation Method for High-Speed PMSM Drives**
Shen, Lin; Zhang, Jian; Wen, Xuhui; Chen, Zehao
Key Laboratory of High Density Electromagnetic Power and Systems(Chinese Academy of Sciences), Institute of Electrical Engineering, Chinese Academy of Sciences
- TEMS-0287 Improving Current Detection Accuracy in Motor Drive Systems Using Surface-Mounted Current Sensors**
Onodera, Sogo; Iwaji, Yoshitaka; Aoyagi, Shigehisa; Kigure, Masayuki
Ibaraki University
- TEMS-0447 Incremental Model-Free Predictive Current Control with Extended State Observer**

THURSDAY NOVEMBER 26

POSTER SESSION

for Robotic Joint PMSM Drives

Hua, Feiyang; Cai, Yi; Tang, Jianzhong

Zhejiang University

TEMS-0182 Influence of DC-Link Capacitors on CMV Suppression in I2CMVF with Common Point Coupling

Zhang, Jing; Ji, Yatai; Zhang, Xiaochen; Gu, Chunyang; Li, Jing; ZHANG, Pinjia

Tsinghua University

TEMS-0164 Initial Speed Estimation Method of Sensorless Controlled Induction Motors Based on AC Voltage Injection and Cross-Coupling

Suzuki, Yuto; Iwaji, Yoshitaka; Kunihiro, Naoki; Kaneko, Takashi

Ibaraki University

TEMS-0169 Interference compensation of PMSM based on parameter identification with long short-term memory neural network

Chen, Xilong

Huazhong University of Science and Technology

TEMS-1027 Kalman-Filtered Power-Balance MTPA Angle Estimation for Dual Three-Phase PMSMs Under Open-Phase Fault

Li, Xingrun; Tong, Zhe; Feng, Guodong

Sun Yat-sen University

TEMS-0573 Minimum Zero-Sequence Voltage Injection for Neutral-Point Voltage Balancing in Three-Level NPC Converter-Fed Four Three-Phase PMSM Drives

Chen, Jianglong; Song, Pingyue; Wang, Tao; Wu, Lijian

Zhejiang University

TEMS-0318 Model Predictive Current Control of Permanent Magnet Synchronous Motor Based on IGWO Algorithm and Non-singular Fast Terminal Sliding Mode

Chen, Yiren; Liu, Jinglin; Wei, Jinying; Li, Xiaotao

Northwestern Polytechnical University

TEMS-0347 Model-Free Predictive Current Fault-Tolerant Control for Non-Phase-Shifted Dual Three-Phase PMSMs in eVTOL Applications

Qu, Zhian

Huazhong University Of Science And Technology

TEMS-0047 Periodic Extended State Observer-Based Disturbance Rejection for High-Precision Voice Coil Motor Servo Valve Control

Wang, Da; Ding, Wen; Lv, Dexu; Su, Zhanyuan; Wang, Jiaying; Zeng, Zhiyi

Xi'an Jiaotong University

TEMS-0811 Study of the effect of Inductive Parameter Tracking on a High Pole Pair Concentrated Winding Interior Permanent Magnet Synchronous Machine

Santhoshkumar, Adithya Narayan; Wurmbäck, Timo; Gerling, Dieter

University of Bundeswehr

TEMS-0315 Adaptive Extended Kalman Filter Based PMSM Sensorless Control Using Asymmetric High-Order Softsign Function with Dead-Zone

THURSDAY NOVEMBER 26

POSTER SESSION

Li, Xiaotao; Liu, Jinglin; Chen, Yiren; Wei, Jinying
Northwestern Polytechnical University

TEMS-1088 **Global Capacitance Optimization of Flying-Capacitor-Based Active Power Decoupling via Partial Decoupling Strategy**

Guan, Wentao; Gao, Fanqiang; Zhang, Hang; Zhao, Cong; Li, Zixin; Li, Yaohua
Institute of Electrical Engineering Chinese Academy of Sciences

TEMS-0171 **Flux Weakening Control of Permanent Magnet Synchronous Motor Considering Parameter Mismatches**

Li, Mengyu
Lanzhou Jiaotong University

TEMS-1005 **An Online Stator Insulation Capacitance Monitoring Strategy for Inverter-Fed PMSM Drive Systems**

Luan, Zhenghao; Lu, Geye; Zheng, Dayong; Wang, Yibo; Yin, Zheng; Zhang, Pinjia
Beijing Jiaotong University

THURSDAY NOVEMBER 26
POSTER SESSION

POSTER SESSION

THURSDAY NOVEMBER 26

VENUE

10:50-12:50 PS 4: Electrical Machines and Field Analysis

Chairs

- TEMS-0775 Design and Analysis of Three-Dimensionally Shaped Soft Magnetic Composite Stator Teeth for Radial-Flux PMSM**
Kim, Seong-Hun; Um, Dae-Yong; Kim, GiHun; SON, CHANGHEE; An, Yeongjun
GyeongsangNationalUniversity
- TEMS-0966 Step-Out Diagnosis in Low-Speed Open-Loop PMSM Drives Using Zero-Current-Clamping**
Lee, SungJae; Chae, Min-Seok; Choi, Hyeon-Gyu
Incheon National University
- TEMS-0264 Design and Thermal Analysis of a Permanent Magnet Synchronous Motor with Integrated Cooling Structure Based on Coupled Electromagnetic-LPTN Model**
Han, Yiwei; Liu, Jinglin
School of Automation, Northwestern Polytechnical University
- TEMS-1167 Design Consideration and Performance Study of 8-Pole Permanent Magnet Spherical Motor**
Pham, Tan-Hung; Huynh, Anh; Hsieh, Min-Fu
National Cheng Kung University
- TEMS-0572 Design Consideration of a Variable-Leakage-Flux PM Starter-Generator Based on Air-Gap Flux Harmonics**
Lin, Xiangru; Fang, Shuhua; Sun, Qihang; Xu, Qiangren; Zheng, Xinlei; Sun, Xiaotian
School of Electrical Engineering, Southeast University
- TEMS-0582 Design of a Novel Unified Single-Winding Dual-Rotor PM Generator for Stand-Alone Wind Power Systems**
Cao, Libing; Zhu, Shengdao; Lee, Christopher H. T.
Nanyang Technological University
- TEMS-0399 Design Optimization and Thermal Analysis of a Novel Dual-Stator Axial-Field Flux-Modulated Permanent Magnet Machine**
Xu, Yuchen; Jia, Shaofeng; Lin, Jun; Liang, De-Liang
Xi'an Jiaotong University
- TEMS-0476 Design Study on Reducing Torque Ripple and Cogging Torque of 100kW Induction Motor for Steering Modules**
Kwon, HyunWoo; Park, JunhHyub; Kang, DongWoo
INCHEON NATIONAL UNIVERSITY
- TEMS-0981 Dynamic Characteristics Analysis of a Mechanical Fast Switch with Electromagnetic**

THURSDAY NOVEMBER 26

POSTER SESSION

- Damping for Hybrid DC Circuit Breakers**
Ahn, Hyun-Mo; Park, Jun-Kyu; Hong, Jae-Young; Oh, Yeon-Ho; Song, Ki-Dong
Korea Electrotechnology Research Institute
- TEMS-0144 Harmonic-Oriented Optimization of a Triple-Layer Magnetic Geared Permanent-Magnet Machine for Torque Density Improvement**
Liu, Yang; Chen, Xilong; Song, Bao; Qu, Ronghai; Gao, Yuting
Huazhong University of Science and Technology
- TEMS-1131 High-Speed PM Machine Rotor Sleeve Multi-Physics: Comparative Study of Alloy, Carbon Fiber, and Composite Sleeves**
Wang, Gengji; Zhang, Yu; Si, Jia; Du, Mingxing
Tianjin University of Technology
- TEMS-1123 Hybrid Copper-Aluminum Hairpin Winding with a Winding Changeover System for High-Efficiency IPMSMs in EV**
Kim, Taehyun; Nam, Taek-Hyo; Song, In-seok; Park, Dong-Hyeon; Jung, Sang-Yong
Sungkyunkwan University
- TEMS-0040 Hybrid-Magnet Variable Flux Memory Machine for Variable-Speed Vehicular Propulsion Systems**
Chen, Zhongyao; Asef, Pedram; Cai, Shun
University College London
- TEMS-1115 Hysteresis and Magnetostriction Characteristics of Ultra-thin Silicon Steel Sheets under Square-wave Excitation**
Li, Haoda; Zhao, Xiaojun; Gao, Yanhui; Guan, Weimin; Gao, Shengze
North China Power Electric University
- TEMS-1172 Hysteresis-Region Enabled Lightweight DC/AC Conversion and Control Using a Brush-Type Electrostatic Self-Excited Micro-Beam**
Yang, Xiufeng; Qi, Mingjing
School of Energy and Power Engineering, Beihang University
- TEMS-0314 Impact of Magnet Structure on Speed Dependence of Loss in IPMSM for Compressor Applications**
Tomoda, Yuki; Yatsu, Yusuke; MURAYAMA, Satoshi; SHIMAZAKI, Masashi; Wada, Kanata; SUZUKI, Kenji
Tokyo City University
- TEMS-0497 Improved 4-D LUT Based Reduced Order Model for Fast Harmonic Analysis of DFIMs in Variable-Speed Pumped-Storage Systems**
Jin, Dingsong; Chai, Feng; Long, Peiyu
Harbin Institute of Technology
- TEMS-0566 Influence of a Novel Type of Semi-Magnetic Slot Wedge on the Electromagnetic Behaviour of a Salient Pole Synchronous Machine**
Hengelsberg, Marvin; Bresemann, Eva; Gerlach, Martin; Emmrich, Dirk
Leibniz University Hannover
- TEMS-0490 Influence of Conductor Configuration on AC Copper Loss in High-Speed Motors**

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POSTER SESSION

Chen, Bin; Li, Liyi; Xiao, Yong; Li, Xia; Hu, Yusheng

Guangdong Provincial Key Laboratory of High-speed and Energy Conservation Motor System; GREE ELECTRIC APPLIANCES, INC. of ZHUHAI

TEMS-0279 Insights into the Wave Propagation of Common-Mode Currents along a Stator Winding

Behrendt, Cara-Nastasja; Ponick, Bernd

Institute for Drive Systems and Power Electronics, Leibniz University Hannover

TEMS-0746 Low-Vibration Optimization Design of PMSM Based on Adaptively Constrained Multi-Objective Particle Swarm Optimization and Differentiated Response Surface Methodology

Yang, HeMing; Dou, Manfeng; Lin, Jinpu; Dang, Mengxi; Zhao, Dongdong; Hua, Zhiguang

School of Automation, Northwestern Polytechnical University

TEMS-0337 Magnetic Field Analysis of Eccentric-Shaped Permanent-Magnet Motors Based on Magnetic Pole Adaptive Segmentation Method

Fu, Shuo; Chen, Chuntao; Liu, Hui; Wu, Xinzhen

Qingdao University

TEMS-0405 Magnetic Field Analysis of Harmonic Injection Permanent-Magnet Motors Under Different Equivalent Current Quantities of Permanent Magnets

Li, Hao; Chen, Chuntao; Wu, Xinzhen

Qingdao University

TEMS-0157 Magneto-Structural Coupled Topology Optimization of a Synchronous Reluctance Motor Using Gabor Filters

Uzawa, Takuhiro; Imamori, Satoshi; Sato, Ikuya

Fuji Electric Co., Ltd.

TEMS-0160 Mesh-Based Reluctance Network Analysis for Transient Electromagnetic Design of Voice Coil Motors

Ninomiya, Toshikazu; Imamori, Satoshi

FUJI ELECTRIC CO.,LTD.

TEMS-0382 Multi-Objective Optimization Design of High-Performance Multi-Operating-Condition PMSM for Lower Limb Joints of Humanoid Robots

Bai, Zhenqi

Northwestern Polytechnical University

TEMS-0159 Multi-Objective Optimization of PCB Motor Based on Exact Winding Factor Calculation

Wang, Xiaoyuan; Xu, Lunjia; Li, Tianyuan; Gao, Peng; Shen, Haoyu

Tianjin University

TEMS-0596 Multi-Operating-Point Multi-Objective Bayesian Optimization of a Rare-Earth-Free Vernier Generator for Small Wind Turbines

Myeong, Jun; Lee, Jin Hwan

Chonnam National University

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POSTER SESSION

- TEMS-0429 Multi-Physics Coupling Optimal Design of High-Temperature Magnetic Bearing**
Wang, Xiaoyuan; Feng, Kezheng; Dong, Qizhi
Tianjin University
- TEMS-0461 NLESO-Based Back-EMF Estimation for Incipient Interturn Short-Circuit Fault Diagnosis in Permanent Magnet Synchronous Motors**
Liu, Weiyan; Chen, Yiguang; Yang, Yifan
Tianjin University
- TEMS-0783 Operating-Profile-Weighted Loss Evaluation of Hybrid SMC Core Structures in Axial Flux Permanent Magnet Synchronous Machines Using Improved Quasi-3D FEM**
Lee, Si Hyeong; Park, Gwan-Soo
Pusan National University, Department of Electrical Engineering
- TEMS-0510 Optimal Design and Trade-Off Analysis for Different Objective Functions in an Outer-Rotor In-Wheel Motor**
Kang, Hyeon Jun; Lee, Jin Hwan
Chonnam National University
- TEMS-0809 Optimal Rotor Design for Torque Ripple Reduction of a Synchronous Reluctance Motor**
Kang, Minguk; Park, Gwan-Soo
Pusan National University, Department of Electrical Engineering
- TEMS-0336 Optimization of Axial Flux PM Machines with Fractional Slot Concentrated Windings for Low Harmonic Contents**
Bratke, Christian; Gerling, Dieter
FEAAM GmbH
- TEMS-0660 Optimization of cooling system for PCB stator winding axial flux permanent magnet motor based on electromagnetic and thermal coupling**
Huang, Hong; Huang, Xuzhen
Nanjing University of Aeronautics and Astronautics
- TEMS-0679 Optimization of Electromagnetic Loss for Three-Branch Parallel Ring in Large Generator Based on 2D Finite Element Analysis**
Xu, Baichuan; Liu, Minghui; Xu, Guojun
Shanghai Electric Generation Power Equipment Co., Ltd. Generator Plant
- TEMS-0227 Polynomial Generator: A Meta-Model for Predicting the Lifetime of Stator Winding Insulation**
Blanken, Norman; Laajouzi, Labassi; Ponick, Bernd
Leibniz University Hannover, Institute for Drive Systems and Power Electronics
- TEMS-0205 Proposal of Figure-Eight Coil Motor for an Axial-Flow Pump for VAD Combined with Passively Controlled Magnetic Bearings**
Yatsu, Yusuke; MURAYAMA, Satoshi; SHIMAZAKI, Masashi; SUZUKI, Kenji
Tokyo City University
- TEMS-0937 Prototype and Experimental Evaluation of a Cylindrical-Gap Segment-Type Linear Switched Reluctance Motor for Robust Reciprocating Linear Drive Applications**

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POSTER SESSION

- Hirayama, Tadashi
Kogakuin University
- TEMS-1007 Rate-Dependent Property of Hysteresis Loop and Iron Loss Prediction Under Multi-Level Wave Excitation**
Gao, Shengze; Tan, Yaxi; Zhao, Xiaojun; Gao, Yanhui; Wu, Yiting; Wang, Jialu; Li, Haoda; Lu, Guangjun
North China Power Electric University
- TEMS-0591 Relationship Between Thermal Property and Rotor Size of Ultra-High-Speed Traction Motor**
Eri, Chisu; Tsunata, Ren; Imai, Jun
Graduate School of Environmental Okayama University
- TEMS-0455 Rotor Design of Hybrid Permanent Magnet Assisted Synchronous Reluctance Motor Based on Magnetic Field Shifting for Torque Optimization**
Yang, Yifan; Chen, Yiguang; Liu, Weiyan
Tianjin University
- TEMS-0226 Simulation and Analysis of Eddy Currents in Additively Manufactured Rotors**
Behrendt, Marius; Ponick, Bernd
Leibniz University Hannover, Institute for Drive Systems and Power Electronics
- TEMS-1047 Stator Damper Coil with Series Capacitors for Harmonic Electromagnetic Force Reduction in Induction Motors**
Wang, Chenbo; Zhang, Quan; Cheng, Shihao; Xu, Qiyang; Zhao, Haisen
North China Electric Power University
- TEMS-0579 Stator-PM Dual-Internal-Mechanical-Port Machines: Quantitative Comparison of Spoke Topologies with Integrated Winding**
Zhang, Zhouyang; Jiang, Mingyuan; Dong, Zixu; Zhang, Zhang; Niu, Shuangxia; CHAU, Kwok-Tong
The Hong Kong Polytechnic University
- TEMS-0374 Structural Optimization for Low Torque Ripple in Outer-Rotor Surface-Mounted Permanent Magnet Synchronous Motors**
Ding, Yueheng; Zhao, Fei; Yu, Jincheng; Lee, Ju
Harbin Institute of Technology (Shenzhen)
- TEMS-0741 System-Level Evaluation of Ride Comfort Degradation in In-Wheel Motor EVs Considering Torque Ripple**
Park, JeongYoon; YOU, YONGMIN
Department of Future Mobility Convergence, Chonnam National University
- TEMS-0891 Temperature-corrected Hysteresis and Loss Prediction Method for Soft Magnetic Materials under High-frequency Multi-harmonic Excitation**
Mu, Hualin; Zhao, Xiaojun; Gao, Yanhui; Gao, Shengze; Zhang, Yuting
North China Electric Power University
- TEMS-0170 History-Dependent Dynamic Magnetic Response in Cores Induced by Eddy Current Reaction Field**

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POSTER SESSION

Li, Rui-Ye; Zhang, He; Zhang, Xiaochen; Huang, Xiaoyan
Yongjiang Laboratory

TEMS-1147 Optimization Design of Surface-Mounted Permanent Magnet Vernier Machine Based on Magnetomotive Force Editing

Wu, Leilei; Wang, Yawei; Yang, Fan; Wang, Zengyu
Linyi University

TEMS-0232 Fault Diagnosis of Three-Phase Stator Currents in Asynchronous Motors Based on MGOPAE and RV-ELSTSVM

Huang, Jihao; Li, Cheng Xin; Liu, Ling
Xi'an Jiaotong University

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VENUE

13:50-15:50 PS 5: Energy Systems and AI Convergence

Chairs

- TEMS-0195 A Bidding Strategy for Virtual Power Plant in Day-Ahead Markets under Bounded Rationality**
Zhang, Yipeng; Zhang, Yongjian; Liu, Hongpeng
Northeast Electric Power University
- TEMS-0286 A curvature-based switching-type MPPT control system and its application to micro wind power generation**
Kawase, Shota; Yamamura, Naoki
Mie university
- TEMS-0331 A CVaR-Based Multi-Market Day-Ahead Bidding Optimization Model for a Virtual Power Plant**
Zhang, Zhaojie; Wang, Jidong; Lin, Qingxiang; Zhang, Chuziang; Chai, Yihan
Tianjin University
- TEMS-0768 A Generative Coil Design Framework for Wireless Electric Vehicle Charging via Stream-Function Decomposition-Based Optimization**
Liu, Hanyu; Tian, Xiaoyang
City University of Hong Kong (Dongguan)
- TEMS-0269 A Method for Torque Compensation Table Construction Using Active Transfer Learning in Two-Stage Motor Drives**
Bin, Seung-Hyeon; Kim, Seong-Min; Park, Soo-Hwan; Jung, Sang-Yong
Sungkyunkwan University College of Information and Communication Engineering
- TEMS-0667 A Parameter Identification Method for Battery Packs Using a Physics-Informed Recurrent Neural Network**
Zhang, Zepei; Guo, Yuchao; Liu, Pengtao; Cheng, Yang; Fan, Yuan
Anhui University
- TEMS-0257 Adaptive Sliding Mode Compensation Control for Unbalance Vibration in Hybrid Magnetic Bearings Based on SOGI-SRFT**
Zhang, Wei; Wang, Ke; Shan, Kaiyu; Hu, Yadong; Zhu, Yuxiang
Institute of Electrical Engineering, Chinese Academy of Sciences
- TEMS-0614 An Improved Harmonic Isolation Strategy of Adjustable Reactor Based on Combined Fundamental Current and Harmonic Voltage Control**
Luo, Wei; Zhang, Yizheng; Xie, Minglei; Li, Dayi; Liu, Yi
Zhejiang University
- TEMS-0670 Applications of High-Temperature Superconductors in Space: An Overview**

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POSTER SESSION

- Yang, Chengbo; Liu, Wei; Chow, Calvin C. T.; Zhang, Zhouyang; Niu, Shuangxia; CHAU, Kwok-Tong
The Hong Kong Polytechnic University
- TEMS-0274 Behavior Pattern Inference Based Trading Strategy for Load Aggregators in Coupled Electricity Markets**
Lv, Yang; Kong, Xiangyu; Yu, Rui
Tianjin University
- TEMS-1252 Bidding Strategy for Wind-Solar-Storage Clusters in Day-Ahead Markets Considering Uncertainty**
Zhang, Yongjian; Zhang, Yipeng; Liu, Hongpeng
Northeast Electric Power University
- TEMS-1077 Comparative Analysis of Anomaly Detection Techniques in Operational Data to Enhance Safety of Battery-Based ESS**
Lee, Tae-Ju; Lee, Dong-Ju; Kim, Jong-Gyeum
Kukje Electric Co., Ltd.
- TEMS-0223 Coordinated EV Charging Strategy Based on Dual-Objective Time-Varying Path Planning and Traffic-Charging Coupled Feedback Iteration**
Wang, Ruilu; Zhao, Chuang; Liu, Hongpeng
Northeast Electric Power University
- TEMS-1126 Coordinated SOC Management of Energy Storage Clusters in Islanded Microgrids via Power Regulation of Gas Turbines Considering Ramp Limits**
Xiao, Qian; Zhao, Yansong; Lu, Wenbiao; Jin, Yu; Su, Shiwen; Mu, Yunfei; Jia, Hongjie
Tianjin University
- TEMS-1037 Cyber-Resilient control of VSG-integrated microgrids using nonlinear Luenberger sliding mode observer driven DMPC Framework**
Ali, Saima; Khan, Laiq; Mahmoudi, Amin; Kahourzade, Solmaz
College of Science and Engineering, Flinders University, Adelaide, Australia
- TEMS-0884 Decoupling-Oriented Coordination of Paralleled VSGs With Multi-Agent Reinforcement Learning**
Wei, Yuang; Wang, Yixiao; Xu, Zhuang
University of Nottingham Ningbo China
- TEMS-0823 Design and Performance Evaluation of an AI-Based Fault Detection Model for Smart Circuit Breakers**
Pham, Anh Hung; Jung, Ga-Eun; Lee, Jun-Yeop; Lee, Seok-Ju
Changwon National University
- TEMS-0507 Design of a Compact WPT System Achieving Stable Output Over a Wide Coupling Range Without Receiver-Side Compensation**
Zhang, Zengmin; Hou, Jia
Nanjing University of Posts and Telecommunications
- TEMS-0121 Dual-Decoder TransUNet Enhanced with DDIM-Based Data Augmentation for Non-Intrusive Load Monitoring**

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POSTER SESSION

Luan, Wenpeng; Li, Zimo; Zhao, Bochao
tianjin university

TEMS-0836 Event-Triggered Shared Energy Storage Coordination for Rapid Power Shortage Mitigation in AC/DC Distribution Systems

Xiao, Qian; Zhao, Yansong; Lu, Wenbiao; Jin, Yu; Su, Shiwen; Mu, Yunfei; Jia, Hongjie; Gao, Mengke

Tianjin University

TEMS-0321 Hierarchical Optimal Scheduling for Microgrids Considering LSTM-KAN Forecasting and Dynamic Demand Response

Liu, Zhuocheng; Wang, Jidong; Kong, Xiangyu; Zhang, Qiang

Tianjin University

TEMS-0480 Integrated Power Compensation Using Synchronous Condenser and Gravity-Based Energy Storage for Next-Generation Power Systems

Yamashita, Ken-ichiro; Takahashi, Daiki

Meisei University

TEMS-0478 Investigation of Maximum Power Tracking Control for a Magnus Turbine-Based Wave Energy Converter Considering Wave Attenuation

Yamashita, Ken-ichiro; Narita, Mizuki; Aratani, Souta

Meisei University

TEMS-0700 Model-Data Driven Deep Reinforcement Learning for Adaptive Scheduling of Multi-Energy Complementary Microgrids

Qiu Changshuo; Kong, Xiangyu; Su, Jin; Li, Ke; Song, Yi; Sun, Chongbo

Tianjin University

TEMS-0536 Overcoming Electricity Market Data Scarcity via Physics-Informed Synthetic Simulation

Shi, Liyang; Wang, Haiyun; Yu, Chi

Xinjiang University

TEMS-0389 Parameter Design for High Misalignment-Tolerant S/SP Compensated IPT Systems Considering Self-Inductance Variation

Wang, Zhenghao; Hou, Jia

Nanjing University of Posts and Telecommunications

TEMS-0844 Parameter Optimization Method for Grid-Forming Inverters Based on Impedance Sensitivity

Tang, Lingxi; Wang, Wusen; Chang, Yuxin; Fan, Ying

School of Electrical Engineering, Southeast University, China

TEMS-0760 Robust Partial Discharge Recognition in GIS under Strong Noise Using a Deep Discriminative Sparse Fusion Network

Huang, Jiemin; Yan, Jing; Wang, Yanxin; Zhang, Zhengrun

Xian Jiaotong University; Xi'an Jiaotong University

TEMS-0225 Short-term Electric Vehicle Charging Load Forecasting Based on CEEMDAN Decomposition and Static Optimal Ensemble

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POSTER SESSION

- Zhao, Chuang; Wang, Ruilu; Liu, Hongpeng
Northeast Electric Power University
- TEMS-0263** **Suppression Control of Output Voltage Distortion Using Three-Phase/Single-Phase Matrix Converter for Power Distribution**
Ichikawa, Sota; Yamamura, Naoki
Mie University
- TEMS-0843** **Task and Energy Management Strategy for AI-Oriented Intelligent Computing Data Center Considering Computing Room State Switching**
Li, Tianxiang; Xiao, Qian; Jin, Yu; Tian, Sen; Wang, Pei; Mu, Yunfei; Jia, Hongjie
Tianjin University
- TEMS-1038** **Three-Layer Safe Reinforcement Learning for Critical Load Restoration in Islanded Microgrids under PV and Load Uncertainty**
Feng, Leyuan; Yang, Qingyu; Li, Donghe; Guo, Yiwei
Xi'an Jiaotong University
- TEMS-0258** **Topology of Capacitor Self-Charging Resonant DC Circuit Breaker with Controllable Injection Energy**
Zhang, Yumin; Wen, Weijie; Li, Bin; Zhang, Zhicheng
Tianjin University
- TEMS-0021** **TS-PINN-Based Reduced-Order Modeling of Green Ammonia Synthesis System with Dynamic Adaptability Under Renewable Energy Fluctuation**
Zhang, Yansong; Liu, Yixin; Zhao, Bo; Guo, Li; Lv, Hongkun; Zhang, Yuxuan; Ni, Chouwei; Zhang, Kang
School of Electrical and Information Engineering, Tianjin University
- TEMS-0875** **Two-Stage Robust Optimization Economic Dispatch Method for Microgrids Considering Renewable Energy and Load Fluctuations**
Cai, Na; Zhao, Mi; Lu, Min
College of Energy & Materials Shihezi University
- TEMS-0115** **Two-Layer Coordinated Frequency Regulation of Fixed-Speed and Variable-Speed Pumped-Storage Units**
Wang, Mengxin; Du, Jinhua; Song, Cheng; Zhang, Jing; Zhao, Xiangrui
School of Electrical Engineering, Xi'an Jiaotong University
- TEMS-0234** **Analysis of Maximum Wind Power Integration Capacity via MMC-HVDC Transmission System Under Oscillation Stability Constraint**
Zhan, Ying; Li, Xu
China University of Mining&Technology-Beijing
- TEMS-0277** **Short-Term Load Classification Forecasting Based on DBSCAN Adaptive Clustering and Multi-Dimensional Factor Analysis**
Yu, Rui; Kong, Xiangyu; Lv, Yang
Tianjin University
- TEMS-0333** **A Study on the Configuration of Optimal Battery Swapping Maps for Minimizing Deadhead Distance in Last-Mile E-Mobility Delivery Services**

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POSTER SESSION

- Lee, S.H.
Daegu Mechatronics & Materials Institute
- TEMS-0341 Experimental Study on Energy Efficiency of Route Selection in Multi-Destination Mobility Scenarios**
CHOO, YONGHA; Lee, S.H.
Daegu Mechatronics & Materials Institute
- TEMS-0632 Bi-Level Low-Carbon Optimization for Flexible Loads with LLM-Adaptive Constraints**
Ling, Chen; Kong, Xiangyu; Chen, Yi; Chen, Songsong; Chen, Jing; Wei, Yusi
Tianjin University
- TEMS-0675 A Two-Stage Coherency Clustering and Equivalence Method for Grid-Forming Multi-Converter Systems Based on Port-Hamiltonian Theory**
Jiang, Wendi; Feng, Shuang; Lei, Jiaying
School of Electrical Engineering, Southeast University
- TEMS-0698 Bi-Level EV Cluster Planning and Feasible Real-Time Dispatch via Constraint-Embedded SAC**
Li, Mengxuan; Liu, Gaohua; Kong, Xiangyu; Li, Ke; Yuan, Kai; Su, Jin
Tianjin University
- TEMS-0733 Optimized Control Strategy for the Reactive Power Path of the Enhanced Excitation Converter Based on DAB and CHB for DFIG**
Yin, Xiao; Xu, Juntao; Li, Guangchen; Wang, Siwen; He, Jinkui; Zhao, Rende
China University of Petroleum (East China)
- TEMS-0977 A Predict-then-optimize Approach for Energy Storage Participation in Day-ahead Energy and Frequency Regulation Markets**
Zhou, Dianjie; Yu, Yaowen
Huazhong University of Science and Technology
- TEMS-1039 Hierarchical Semi-Markov Scheduling for Aggregated PV-Battery EV Charging Stations in Flexibility Markets**
Guo, Yiwei; Yang, Qingyu; Li, Donghe; Feng, Leyuan
Xian Jiaotong University
- TEMS-1193 Optimal Scheduling for Energy Storage Systems in Distribution Networks Using Sensitivity Matrices**
Cheng, Jiao; Z, Jq; Ju, Yun
Shanxi Energy Internet Research Institute
- TEMS-1096 A Collaborative Strategy Integrating eVTOL Operating Conditions with Air-Cooling BTMS**
Lin Xun; Tang, Xin; Zheng, Linfeng
Shenzhen Technology University
- TEMS-0858 Fault Root Causes Tracing in Wind Turbines using PCA and Information Geometric Causal Inference**
Fang, Ruiming

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POSTER SESSION

- Huaqiao University
- TEMS-1100** **Optimized Scheduling of Port Microgrids based on MOPSO-GRA Algorithm**
Zhang, Min; Qian, Zhengyan; Shang, Shanshan; Li, Rongxian; Li, Wenlong; Tang, Xujing;
Yu, Hang; Jian, Linni
Zhuzhou National Engineering Research Center for Converter Technology Co., Ltd
- TEMS-0914** **Laminated PV-TEG Integration with Copper Substrates for Enhanced Photovoltaic Thermal Management**
Lyu, Rujia; Gu, Yuehao; Zhong, Jiahao; Jian, Linni
City University of Hong Kong (Dongguan)
- TEMS-1108** **A Lithium-Ion Battery State of Power Prediction Method Based on Physics-Informed Neural Networks**
Tang, Xin; Lin Xun; Zheng, Linfeng
Shenzhen Technology University

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POSTER SESSION

POSTER SESSION

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VENUE

16:10-18:10 PS 6: Power Electronics and Motor Drives

Chairs

- TEMS-0955 Modeling and Control of a Stator/Rotor Dual-Three-Phase Matrix-Torque-Machine with Asymmetric Rotor Winding**
Yu, Zhihua; Jia, Shaofeng; Sun, Pengcheng; Yang, Dongxu; Lin, Jun
Xi'an Polytechnic University
- TEMS-1188 Multi-step Predictive Linear Active Disturbance Rejection Control Strategy for Linear Permanent Magnet Synchronous Machine**
Gao, Zhonghui; Cao, Ruiwu; Liu, Xiaoqiang
Nanjing University of Aeronautics and Astronautics
- TEMS-1046 Nonlinear Observer-Aided Sliding Mode Control for FCHEVs using Robust State-Differentiator**
Wahab, Mudasir; Khan, Laiq; Mahmoudi, Amin; Kahourzade, Solmaz
College of Science and Engineering, Flinders University, Adelaide, Australia
- TEMS-0197 Position Sensorless Control of a SynRM without q-axis Inductance Information Using a Flux Model**
Oshita, Yuha; Tomita, Mutuwo; Hasegawa, Masaru; Doki, Shinji
National Institute of Technology, Gifu College
- TEMS-0390 Position Sensorless Dynamic Control Strategy for Primary-Segmented Linear Induction Motor**
Liang, Yuchen; Shi, Liming; Kong, Ganlin; Fan, Manyi; Li, Yaohua
State Key Laboratory of High Density Electromagnetic Power and Systems, Institute of Electrical Engineering, Chinese Academy of Sciences
- TEMS-0699 Research on Advantage of Applying Series-end Winding Topology to Drone Drive System**
Wang, Lehan; Li, An; Jiang, Dong; Zhou, Min
Huazhong University of Science and Technology
- TEMS-0715 Sensorless Control of High-Speed Stepper Motors Based on LESO-SMO and S-Curve Trajectory Planning**
Su, Junhui; Li, Bingqiang; Zhou, Suying; Hou, Tianrui; Wang, Dongheng; Wu, Han; Cao, Mingming
Northwestern Polytechnical University
- TEMS-0350 Sensorless Control of Permanent Magnet Synchronous Motor Based on Adaptive STSMO with Improved sigmoid Function**
Wei, Jinying; Liu, Jinglin; Li, Xiaotao; Chen, Yiren

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POSTER SESSION

- School of Automation, Northwestern Polytechnical University
- TEMS-1190 Sensorless DTC-Based Fault-Tolerant Control for DTP-PMSM**
Cao, Yang; Cao, Ruiwu; Gao, Zhonghui
Nanjing University of Aeronautics and Astronautics
- TEMS-0265 Sensorless Position Control for IPMSM at Low Speeds Using a Single-Shunt Current Sensor**
Tamiya, Hibiki; Iwaji, Yoshitaka
Ibaraki University
- TEMS-0716 Sensorless Suspension Control for a Hybrid-Excitation Bearingless Switched Reluctance Motor**
Zhou, Ziyu; Wang, Chao; Wang, Huijun
Beihang University
- TEMS-0514 Single-Polarity Active Gate Driver with Crosstalk and Oscillation Suppression for Asynchronously Paralleled GaN HEMT Circuits**
Wang, Xiaonan; Lei, Jianming; Guo, Hui; Liu, Bin; Lu, Hai; Zhang, Rong; Zheng, Youdou; Chen, Dunjun
Nanjing University
- TEMS-0644 SOGI based Harmonics Suppression for Sensorless Control of SPMSM Using Eddy Current Loss Reflected Resistance Saliency**
Cui, Yichen; Ma, Ruiqing; Chen, Peng; Chen, Zhe
Northwestern Polytechnical University
- TEMS-0288 Super-Twisting Sliding Mode Control for Active Magnetic Bearing Systems Based on Inverse System**
Liu, Keji; Liu, Yi; Huang, Yanbo; Zhao, Yunfeng
School of Electrical and Electronic Engineering, Huazhong University of Science and Technology, Wuhan, China
- TEMS-0772 Suspension Control of Conical Bearingless Switched Reluctance Motor Based on Improved PID Control Method**
Xu, Zhenyao; Chen, Mingyu
Shenyang University of Technology
- TEMS-0477 The Whole Process Control Strategy and Simulation on Start-up and Grid-connection of doubly fed pumped storage unit**
Cui, Xueshen; Wei, Qiuping; Zhou, Muyang; Hu, Xiaoyu; Liu, Jin; Zhou, Zuofang
North China Electric power University
- TEMS-0438 Torque Ripple Minimization in Switched Reluctance Motors based on Sine TSF and Model-Free Predictive Control**
Jie, An; Wang, Shuanghong
Huazhong University of Science and Technology,
- TEMS-0094 Torque Ripple Suppression Strategy for Brushless Doubly-Fed Induction Machine in Pump Drives Under Unbalanced Grid**
Huang, Yanbo; Liu, Yi; Lin, Cunjian; Zhao, Yunfeng

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POSTER SESSION

School of Electrical and Electronic Engineering, Huazhong University of Science and Technology, Wuhan, China

- TEMS-0133** **Weighting-Factor-Free Model Predictive Control Based on Improved VSVPWM Strategy for High-Speed Maglev 3L-ANPC Traction Converters**
Kong, Xiangzhe; Zhang, Bo; Xie, Zhijian; Zhang, Zhanming; Ge, Qiongxuan; Li, Yaohua
Institute of Electrical Engineering, Chinese Academy of Sciences
- TEMS-0191** **An Improved Steady-State Error Model Predictive Control Algorithm for High-Speed Maglev Control**
Xie, Zhijian; Zhang, Bo; Ge, Qiongxuan; Kong, Xiangzhe; Li, Yaohua
State Key Laboratory of High Density Electromagnetic Power and Systems, Institute of Electrical Engineering, Chinese Academy of Sciences
- TEMS-0283** **An Improved SVPWM Strategy for Common-Mode Voltage and Zero-Sequence Current Suppression in a Single-DC-Bus Open-Winding Symmetrical Six-Phase PMSM**
Chen, Yu
Nanjing University of Science and Technology
- TEMS-0298** **Mechanical Parameter Identification Strategy for a Dual-Inertia System Based on the Modified Integral Chain Differentiator**
Mei, Kailong; Wei, Jiadan
College of Automation Engineering, Nanjing University of Aeronautics and Astronautics, Nanjing 211106, China
- TEMS-0372** **Uniform Demagnetization Diagnosis Method of Permanent Magnet Synchronous Machines Based on FFRLS-HAFO Flux Linkage Observer**
Jiang, Mingxuan; Wang, Tao; Meng, Xiang; Wu, Chuyan; Wu, Lijian
Zhejiang University
- TEMS-0396** **Thermal Optimization of Cooling Plates for a 1 MW SiC-Based Inverter in Aerospace Hybrid Propulsion Systems**
Chu, Qi; Fan, Xinggang; Li, Dawei; Qu, Ronghai; Sun, Wei; Wu, Ge; Guo, Zhe
Huazhong University of Science and Technology
- TEMS-0530** **A flux observation method for high-speed permanent magnet synchronous motors**
Chen, Bin; Li, Liyi; Liu, Mintong; Zhang, Zhenfeng
Gree Electric Appliances, Inc. of Zhuhai, China
- TEMS-0548** **Sensorless Control of Permanent Magnet Synchronous Motor Based on Multi-Generalized Integrator Extended State Observer**
Wang, Hao; Zhang, Haifeng; Zheng, Shiqiang; Chen, Baodong
Beihang University
- TEMS-0555** **Gradient-Enhanced ADRC for PMSM Speed System With Composite Disturbance Rejection**
Tang, Shuaipeng; Zhang, Chan; Zheng, Bining; Liu, Yufei; Zhou, Song; Xing, Boyang
Zhejiang University
- TEMS-0564** **High-Side Current Sensing Method Based on Quasi-Peak Current Control Strategy**

THURSDAY NOVEMBER 26

POSTER SESSION

- for Four-Switch Buck–Boost Converters**
Wen, Zhaoliang; Zheng, Jinghao; Xu, Dianguo
Harbin Institute of Technology
- TEMS-0599 Research on FPGA-Based Hardware-in-the-Loop Real-Time Simulation of a Dual-Winding Induction Machine**
Cui, Xiaorui
North China Electric Power University
- TEMS-0609 PMSM Servo Position Control Based on HGESO with Adaptive Damping**
Wang, Zhiqiang; Yan, Xiayu; Chaoyi, Yang; Haodong, Sun; Gu, Xin
tiangong university
- TEMS-0702 Analytical Phase Current Compensation Based on the Quasi-Linear Normalized Model for Torque Ripple Suppression in SRMs**
Chai, Zhiyuan; Yan, Libin; Liu, Yanting; Zhang, Kai; Liu, Chuang; Zuo, Yuefei
Nanjing University of Aeronautics and Astronautics
- TEMS-0810 A Circulating-Current Reduction Method Using Secondary-Side Short-Circuit Control for LLC Resonant Converter**
Kim, Jaehyuck; Jeong, Min-Chang; Kim, Chae Hoon; Sun, Jun Hyeok
Wonkwang University
- TEMS-0874 Output Fluctuation Analysis and Suppression for Variable-Frequency DAB Converters Based on an Enhanced Small-Signal Model**
Li, Rui Long; Zhao, Dan; Zhang, Min; Zhao, Guodong; Shen, Ke
Xi'an University of Technology
- TEMS-0895 Fault-Tolerant Derated Operation of Series-Connected High-Altitude Wind Power Systems via Unit Bypass and Constrained MPPT**
Zhao, Mingxi; Zhou, Zixun; Liu, Wenmao; Wang, Yu; Zheng, Quan; Cui, Yunfei; Li, Hongchao; Li, Xi; Ma, Zhefei; Lin, Guanqiang; Zhong, Zhenzin; Huang, Junhui
Tsinghua University
- TEMS-0918 Robust Model Predictive Control for PMSMs Based on Online Trained Radial Basis Function Neural Networks**
Duan, Zhaofeng
School of Electrical and Computer Engineering, University of Sydney
- TEMS-0949 Generalized Integrator-Based Extended State Observer for Current Harmonic Suppression in Five-Leg Inverter-Fed Dual Three-Phase PMSMs**
Ren, Yan-Bo; Li, Shang; Zhou, Hao-Yu; Wang, Kai; Zuo, Yuefei; Liu, Chuang
Nanjing University of Aeronautics and Astronautics
- TEMS-0950 Design of Discrete-Time Complex Vector Current Regulator for Dual-Winding Induction Machine**
Zhang, Shengan; Zhang, Yongchang; Yang, Haitao
North China Electric Power University
- TEMS-1055 Integral-Free State-Feedback Current Control for LCL-PMSM Drives**

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POSTER SESSION

- Jia, Borui; Huang, Wenxin
Nanjing University of Aeronautics and Astronautics
- TEMS-1144 Research on High-Efficiency High-Power-Density Ratio Electric Propulsion System for Solar-Powered UAVs**
Guo, Ao
Beihang University
- TEMS-1157 Investigation of Rotational Speed–DC-Link Voltage Characteristics for High-Efficiency Operation of a Switched Reluctance Motor**
Murayama, Satoshi; Yatsu, Yusuke; SHIMAZAKI, Masashi; SUZUKI, Kenji
Tokyo City University - Setagaya Campus, ELECTRICAL ENGINEERING AND CHEMISTR
- TEMS-1161 Four-Layer Winding Arrangement for Reduction of Circulating Current Harmonics in Asymmetric Dual Three-Phase SPMSM**
Kim, Heejae
Sungkyunkwan University
- TEMS-1178 A Voltage Feedback Field-Weakening Control Method for PMSM Drives Based on LESO and ISMC**
Chu, Shuaijun; Guo, Mingda; Yi, Jiawei; Zhang, Dongdong
School of Renewable Energy, Inner Mongolia University of Technology
- TEMS-1195 Performance Analysis of a Flying Capacitor Multilevel (FCML) Converter-Based PMSM Drive**
Adamu, Paul; Lai, Chunyan; Anik, Animesh; Iyer, K. Lakshmi Varaha
Concordia University
- TEMS-1256 Grid-Forming Converters with Circular Current Limiters: A Two-Stage Post Fault Recovery Strategy for Motoring Mode**
Ma, Xinch; Ma, Yiming; Wang, Jin; Zhou, Libing
Huazhong University of Science and Technology
- TEMS-1330 Grid-Side Power Quality Enhancement Strategy for Electrolytic Capacitor-less PMSM Drive**
Liu, Zihao; Zhao, Feifan; Ding, Dawei; Wang, Gaolin; Xu, Dianguo
Harbin Institute of Technology
- TEMS-1068 Reverse Braking Force Suppression Strategy for a Four-Stage Reluctance Coilgun Driven by CHB Converters**
Chu, Shuaijun; Guo, Mingda; Yi, Jiawei; Zhang, Dongdong
School of Renewable Energy, Inner Mongolia University of Technology
- TEMS-0885 Dual Orthogonal Subspace Collaborative Model Predictive Current Control for dual three-phase permanent magnet synchronous machines**
Xu, Zhicong; Zhang, Mai
Tianjin University
- TEMS-0860 Harmonic Regulation Strategy for DT-PMSM Post-Open-Phase Fault Based on Multiple Synchronous Reference Frames**

THURSDAY NOVEMBER 26
POSTER SESSION

Zhang, Mai; Xu, Zhicong

Tianjin University

TEMS-0745 **A Novel Parameter Identification Method for Segmented Open-Winding LSM based on Discrete-Time Modeling**

Gu, Shijie; Li, Qicai; Yi, Weilang; Li, Jie; Yu, Peichang

National University of Defense Technology

TEMS-0251 **Adaptive Parallel Decoupled Extraction and Compensation for Harmonic Suppression in Permanent Magnet Synchronous Motors**

Huang, Xuwen; Dian, Renjun; Zhang, Junhe; Cheng, Bin; Zhao, Yuntao

Wuhan University of Science and Technology

TEMS-0268 **Single-Stage DAB-based DC/AC Converter with Feedforward Optimization and Integrated Grid-Tied/Off-Grid Capability**

Xue, Ruinan; Wang, Panbao; Hao, Wenbo; Wang, Wei; Xu, Dianguo

Harbin Institute of Technology

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POSTER SESSION

POSTER SESSION

FRIDAY NOVEMBER 27

VENUE

8:30-10:30 PS 7: Special Sessions C, D, G, I, J, K

Chairs

- TEMS-1146 Calculation and Analysis of Oil Viscous Loss in Fully Oil-submerged Motors of Electric Fuel Pumps**
Lu, Nanhong; Li, Dawei; Fan, Xinggang
Huazhong University of Science and Technology
- TEMS-0071 Comprehensive Comparative Analysis of Two Rotor Structures for Low-Speed High-Power PMSMs**
Du, Guanghui; Liu, Hongji; Mu, Hao; Chen, Changkun
Xi 'an University of Science and Technology
- TEMS-0869 Design and Analysis of Hairpin Winding and Random Winding Stators for a MW-Class Built-In Aviation Permanent Magnet Generator**
Zhu, Lanlin; Liang, Ziyi; Li, Dawei
Huazhong University of Science and Technology
- TEMS-0375 Design and Electromagnetic Analysis of a Radial YASA Motor for Low-Speed High Torque Direct-Drive Applications**
Lee, Hwan Gyu; Lee, Jin Hwan
Chonnam National University
- TEMS-0653 Design Process of High Torque Density Robotic Joint Actuators based on Inner Rotor Permanent Magnet Motors**
He, Tianran; Li, Yang; Liang, Dawei; Zhu, Zi Qiang
Tongji university
- TEMS-0179 Mathematical Modeling of Dual-Flux-Reversal Permanent Magnet Machine**
Zhang, Liu; Liu, Xikai; Feng, Xin
Ningbo Institute of Technology, Beihang University
- TEMS-0761 Performance Effects and Selection Principles of Pole-Slot Combination for a MW Class Aviation Permanent Magnet Generator**
Zhu, Lanlin; Liang, Ziyi; Li, Dawei
Huazhong University of Science and Technology
- TEMS-0444 Robust Design of Wide-Speed-Range IPMSMs Considering PM Remanence Variation Caused by Temperature**
Liu, Yanyun; Ou, Jing; Yang, Chenyi; Liu, Yingzhen; Liang, Dawei; Xu, Dianguo
Harbin Institute of Technology
- TEMS-0110 System Integration Design of AFFSMGCM Based on Electric-Magnetic-Thermal Bidirectional Coupling**

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POSTER SESSION

Zhang, Wei; Chen, Li; Cheng, Jinru; Peng, Yongjie
Nantong University

TEMS-0647 Torque Performance Analysis of Stator-Modular Dual Three-Phase Permanent Magnet Motors Considering Modulation Effect of Auxiliary Teeth

Xu, Wenqi; Zhao, Wenliang; Wang, Bitan; Liu, Cong
School of Electrical Engineering , Shandong University

TEMS-0425 Torque Ripple Calculation of Flux-Switching Permanent Magnet Machines Considering Tangential Field Modulation Behavior

Zhou, Jiawei; Xu, Zhiyuan; Hua, Wei; Cheng, Ming
Southeast University

TEMS-0588 A Fast Quasi-3D Analytical Model for PM Eddy-Current Loss Prediction in a Dual-Stator Axial-Flux PM Machine

Li, Yu; Zhang, Dian; Ma, Bo; Zheng, Jing; Fan, Huanran; Liu, Ting
Hunan institute of engineering

TEMS-0568 A Manufacturability-Oriented AI-Assisted Design Methodology for Electric Machines Based on Large Scale Data Sample Reconstruction

Liu, Chuanshi; Dong, Tenghui; Jiang, Rui; Zhu, Chong; Zhang, Xi
Shanghai Jiao Tong University

TEMS-0705 A PINN Surrogate Model via Structured FEA Data for Armature Reaction in High-Speed SMPMSG with Asymmetric Tooth

Wang, Gengji; Wang, Xiaoyuan
Tianjin University of Technology

TEMS-0127 Adaptive RBF-Based Fixed-Time Terminal Sliding Mode Control for Robust EMS Maglev Trains

Luo, Yifan; Ni, Fei; Ma, Dihao; Li, Qiming; Yuan, Yihong
Tongji University

TEMS-0752 Application of Attention Mechanism in Deep-Neural-Networks-Based Surrogate Models for Topology Optimization

Bao, Liwen; DU, Yunlu; Peng, Fei; Huang, Yunkai
School of electrical engineering, Southeast University

TEMS-0794 Efficient Electromagnetic Modeling of TPMLMs based on Transfer-Learning and Physics-Informed Neural Networks

Wu, Tao; Tian, Feng; Gong, Xi; Liu, Yangbowen
School of Artificial Intelligence and Automation, China University of Geosciences

TEMS-0574 Geometry-Corrected Generalized-Plane-Strain Stress Evaluation Approach For a Flux-Barrier High Speed IPM Rotor

Li, Yu; Fan, Huanran; Ma, Bo; Zheng, Jing; Dai, Qicheng; Liu, Ting
Hunan institute of engineering

TEMS-0357 Indirect Temperature Estimation for Permanent Magnet Synchronous Motors Based on LPTN-LSTM

Cao, Yanrun; Chu, Guoyu; Dutta, Dr Rukmi

FRIDAY NOVEMBER 27

POSTER SESSION

UNSW

- TEMS-0117 Multi-Objective Optimization Design Method for Permanent Magnet Synchronous Motors Based on Transformer and NSGA-II**
Zhou, Sitong; Jiang, Xiubo; Zhang, Hengliang; Hua, Wei
Southeast University
- TEMS-0565 Surrogate-Assisted Multi-Operating-Point Optimal Design of a YASA AFPM Machine for Agricultural Traction**
Li, Yu; Zhao, Zhihao; Ma, Bo; Zheng, Jing; Liu, Bo; Liu, Ting
Hunan institute of engineering
- TEMS-0747 Thermal-Constraint-Aware Multi-Objective Optimization of a High-Power-Density Axial-Flux Permanent-Magnet Machine**
Li, Yu; Chen, JiaYao; Ma, Bo; Zheng, Jing; PENG, LEI
Hunan institute of engineering
- TEMS-0499 A Novel Three-Stage Medium-Voltage Flexible Interconnection Device With the Control Strategy**
Zhang, Hang; Ruihan, Wang; Gao, Fanqiang; Zhao, Cong; Xu, Fei; Li, Zixin
State Key Laboratory of High-Density Electromagnetic Power and Systems, Institute of Electrical Engineering, Chinese Academy of Sciences
- TEMS-0304 A Novel Three-Stage Power Electronic Traction Transformer With the Control Strategy**
Zhang, Hang; Gao, Fanqiang; Ruihan, Wang; Zhao, Cong; Xu, Fei; Li, Zixin
State Key Laboratory of High-Density Electromagnetic Power and Systems, Institute of Electrical Engineering, Chinese Academy of Sciences
- TEMS-0797 Decentralized Droop-Based Terminal Sliding Mode Control Strategy of Parallel Rectifiers for Power Supply Systems in More-Electric Aircraft**
Zhang, Hang; Zhang, Jiarong; Li, Xiangke; Zhao, Xin; Chen, Xiliang; Wu, Xiaohua
Northwestern Polytechnical University
- TEMS-0630 Intelligent DDPG Control with Input Voltage Equalization Compensation for DAB DC-DC Converters in More-Electric Aircraft**
Wu, Han; Li, Bingqiang; Han, Yuhang; Wang, Dongheng; Zhou, Suying; Cao, Mingming
Northwestern Polytechnical University
- TEMS-0817 Partial Field Cancellation for Torque Suppression in OBCs Integrated into Multi-phase Drives**
Zarate Vargas, Oneil; Pescetto, Paolo; Pellegrino, Gianmario
Politecnico di Torino
- TEMS-0096 A Novel Current-Loop-Based SVM-DTC without Flux Linkage Loop**
Liu, Jinghong; Zhang, Wentao; Zhang, Guanghui; Chen, Zipeng; Xu, Yongxiang; Zou, Jibin
Harbin Institute of Technology
- TEMS-0659 Enhanced MTPV Operation of Asymmetrical Dual Three-Phase SPM Motor Drives Based on Direct Duty Cycle Modulation Considering Fifth-Order Flux Harmonics**
Cui, Mengmeng; Zou, Tianjie; Chen, Dongdong; Riccio, Jacopo; Prystupa, Dmytro;

FRIDAY NOVEMBER 27

POSTER SESSION

Trentin, Andrew; Degano, Michele; Gerada, Chris; Paciura, Krzysztof
University of Nottingham

TEMS-0635 Fault Diagnosis Based on Intelligent Diagnosis Algorithm of Electrical Propulsion DTP-PMSM Under Extreme Open-Circuit Fault

Cao, Mingming; Li, Bingqiang; Zhou, Suying; Wang, Dongheng; Wu, Han; Qi, Rong
Northwestern Polytechnical University

TEMS-0441 Sensorless Control of LCL-Equipped High-Speed PMSMs with Unknown Flux Linkage

Zheng, Peng; Cheng, Chenwen; Lang, Xiaoyu; Zhang, Hengliang; Hua, Wei
School of Electrical Engineering, Southeast University

TEMS-0362 Rotor Position Error Compensation Method for q-axis Current Minimization of High-Speed Permanent Magnet Synchronous Motor

Lin, Zhichen; Yan, Yan; Jia, Kunlei; Chen, Wei
Zhejiang University

TEMS-0259 Study on Noise Reduction in Signal Injection Sensorless for Permanent Magnet Synchronous Motors

Enomoto, Yui; Iwaji, Yoshitaka; Taniguchi, Shun
Ibaraki University

TEMS-0840 Decoupled Dual-Module Excitation for Monopolar-Receiver Interoperability in Bipolar DWPT Systems

Cheng, Lianbin; Cui, Shumei; Zhang, Jiantao; Wang, De'an
Harbin Institute of Technology

TEMS-0629 Design of a Magnetically Coupled Contactless Slip Ring for Simultaneous Wireless Power and Data Transmission

Wan, Liangshi; Hu, Hengzai; Chen, Zhen; Xiang, Yu; Liu, Xiangdong
Beijing Institute of Technology

TEMS-0475 High-Inertia Brushless Doubly-Fed Condenser Topology and Control Based on a Rotary Converter

Zhang, Yuetao; Cui, Xueshen; Dong, Ziyue; Pan, Weifeng; Xu, Guorui; Zhang, Xu
North China Electric power University

TEMS-0913 Design and Analysis of Magnetic Couplers for Electric Vehicle Wireless Charging Using Nanocrystalline-Ferrite Hybrid Cores

Wang, Fengliang; Niu, Songyan; Jian, Linni
City University of Hong Kong (Dongguan)

TEMS-0239 Design and Simulation of a Constant-Voltage WPDT System Using Dual-Frequency Equal-Amplitude FSK Modulation

Ye, Yi Ming Ye
Huazhong University of Science and Technology

TEMS-0626 High-Frequency Winding Loss Analysis and Suppression in Additive-Manufactured PMSMs for Electric Propulsion

Liu, Xianrong; Tan, Qiang; Li, Jing; Lei, Jiaying

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POSTER SESSION

- TEMS-1071 Nanjing University of Aeronautics and Astronautics
Design and Multi-objective Optimization of a Halbach Permanent Magnet Machine for eVTOL Aircraft Considering Diversity Flying Conditions
Zhu, Haotian; Shen, Yiming
Nanyang Technological University
- TEMS-0929 **Design and Analysis of a Novel Synchronous Reluctance Machine with Amorphous Alloy Stator Core and Hybrid Silicon Steel Rotor Cores**
Zhang, Shiwei; Liu, Chengcheng; Wang, Youhua; Zhao, Zhigang; Lei, Gang; Zhu, Jianguo
Hebei University of Technology

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POSTER SESSION

POSTER SESSION

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VENUE

10:50-12:50 PS 8: Electrical Machines and Field Analysis

Chairs

- TEMS-0946 Thermal Analysis of a Dual Three-Phase Permanent Magnet-Assisted Synchronous Reluctance Machine Under Three-Phase Symmetric Short-Circuit Fault-Tolerant Operation**
He, Yinjie; Wang, Yawei; Liang, Dawei; Zheng, Yeming; Yang, Yibo; Liu, Guanfang; Nicola, Bianchi
Huazhong University of Science and Technology
- TEMS-0418 Thermal Analysis of Rotor-side Hollow Shaft Oil Spray Cooling in High Power Density Motors**
Zhang, Weijian; Jia, Shaofeng; Liang, De-Liang
Xi'an Jiaotong University
- TEMS-0388 Thermal Characteristics of a Five-Phase Harmonic-Excited Synchronous Machine**
Kamboj, Sukanya; Gerling, Dieter
University of the Bundeswehr, Munich
- TEMS-0642 Three-Dimensional Thermal Network Assisted Multiphysics Optimization Design for Nanocrystalline High-Frequency Transformers**
Cui, Chaozheng; Zhao, Wenliang; Ding, Haibo; Wei, Baolu
School of Electrical Engineering, Shandong University
- TEMS-0183 Topology Optimization of Water-Cooling Structure for Vernier Motor Considering Heat Transfer Enhancement**
Chen, Dongxiao; Gao, Yuting; Hu, Zhaohua; Li, Guifen
Wuhan University
- TEMS-0785 Topology-Dependent Design of Axial-Flux Generators for Urban Wind Turbines Considering Slot-Pole Combination and Gear Ratio**
Guo, Rujian; Hofmann, Wilfried; Hildebrand, Nicol
Chair of Electrical Machines and Drives, Dresden University of Technology
- TEMS-0934 Topology-Winding Co-Design and Surrogate-Assisted Optimization of Sen Transformer for Enhanced Power Flow Control and Loss Reduction**
Du, Wei
Hebei Provincial Collaborative Innovation Center of Transportation Power Grid Intelligent Integration Technology and Equipment, Shijiazhuang Tiedao University
- TEMS-0598 Torque Density Improvement in a PM-less Swirling Actuator by Modifying the Electromagnetic Structure**
Ehara, Takeshi; Tsutsui, Yukio; Chiba, Akira; Kiyota, Kyohei; Endo, Mitsuru; Kokubu, Ryo

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POSTER SESSION

- Institute of Science Tokyo
- TEMS-0839 Torque-Ripple Reduction in MMAM-SynRM Rotors Using Edge-Material Placement and Flux-Barrier End-Angle Optimization**
Akbar, Siddique
IAL Leibniz University Hannover
- TEMS-0443 Vibration Characteristic Comparison and Vibration Reduction Optimization of Additive Manufacturing Motors Against Enameled Wire Winding Motors**
Chen, Ziyi; Huang, Xuzhen
Nanjing University of Aeronautics and Astronautics
- TEMS-0619 Wideband and Long-stroke Vibration Device Using Electropermanent Magnet Actuator and Ferromagnetic Cantilever Beam**
Kato, Masayuki; Goto, Issei
University of Toyama
- TEMS-0082 Comparison of Two Axial Flux Wound Field Flux Switching Motors with Segmented Rotor: YASA and Double Stator Structures**
Koishi, Yudai; Goto, Hiroki
Utsunomiya University
- TEMS-0120 A Study on the Design and Implementation of a Pump Motor for Recreational Vehicle Water Supply Systems**
Hsu, Yu-Sheng; Huang, Po Wei; Shih, Ching Jui
Taiwan Steel University of Science and Technology
- TEMS-0180 Analysis of Quasi-3D Results According to Layer Number in AFPM**
Lee, Hyeon Sik
Chonnam National University
- TEMS-0208 A Study on the Design of Axial Flux Permanent Magnet Motor for Air Conditioning Refrigerant Compressor Applications**
LIN, CHUNGMIN
newwidetech
- TEMS-0317 The Full-Stator Tester: A Modular, Application-Oriented Test System for the Magnetic Characterization of Non-Segmented Stators in Electric Machines**
Hirsch, Herbert; Schneider, Tobias; Kolb, Johannes; Doppelbauer, Martin
Karlsruhe Institute of Technology
- TEMS-0330 Analytical Modeling of Magnetic Field in YASA Motors Using Adaptive Subdomain Method**
Guan, Yuqi; Liu, Jinglin; Bai, Zhenqi; Wei, Jinying
Northwestern Polytechnical University
- TEMS-0344 Multi Physics Design of a High Speed PM Assisted Synchronous Reluctance Machine for Aerospace Applications**
Benmamas, Loucif; Mekahlia, Abdelhak; Ramarotafika, Rindrarivelo
SAFRAN Tech
- TEMS-0379 Optimized Lattice Structure Design for Lightweighting and Thermal Management in**

FRIDAY NOVEMBER 27

POSTER SESSION

Electrical Machines

Wang, Yifei; Fang, Haiyang; Xiong, Feng; Li, Dawei

HuaZhong University of Science and Technology

TEMS-0431 Iron Loss Calculation of Interior Permanent Magnet Synchronous Motor Under Operating Conditions Based on a Dynamic Preisach Model

Yin, Bo; Chen, Long; Ben, Tong; Wang, Bin; Li, Yongjian

China Three Gorges University

TEMS-0483 Acceleration Test of a High Torque Multi-Monopole Bearingless Motor with Reduced Rotor Inertia

Wakida, Riku; Kumoro, Swandahru; Sugimoto, Hiroya

Tokyo Denki University

TEMS-0508 Torque Characteristics and Magnetic Coupling under Fault Conditions in a Counter-Rotating Dual-Rotor Dual Three-Phase Consequent-Pole SPMSM

Han, Seok Min; Lee, Jin Hwan

Chonnam National University

TEMS-0509 Analysis of Electromagnetic Characteristics and Gearing Effect of Permanent Magnet Vernier Machine Considering FMP Number and Current Density

LIM, JAESEONG; Lee, Jin Hwan

Chonnam National University

TEMS-0521 Comparison and Design of Hybrid Permanent Magnet Assisted Synchronous Reluctance Motors considering Irreversible Demagnetization

Li, Rong; Xu, Lei; Zhu, Xiaoyong; Zhang, Chao; Zheng, Shiyue

School of Electrical and Information Engineering, Jiangsu University

TEMS-0577 Design and Evaluation of a Non-Excitation Magneto-Rheological Fluid Brake for Application in Collaborative Robots

Ikeda, Taiki; Tsutsui, Yukio; Kiyota, Kyohei; Chiba, Akira

Institute of Science Tokyo

TEMS-0646 Analytical Calculation and Optimization of Surface-Inset Permanent Magnet Synchronous Motor Considering Asymmetric Rotor Effects

Xin, Yuhang; Zhao, Wenliang; Wang, Ning; Wang, Bitan; Liu, Cong

School of Electrical Engineering, Shandong University

TEMS-0652 Optimal Design of Vernier Motor for Improved Torque Ripple and Vibration Reduction Based on Air-gap Flux Density Harmonics

Jyoung, Myoung-Won; Yong-Jun, Kwon; Lee, Gukhyeong; Jung, Sang-Yong

Sungkyunkwan University

TEMS-0655 A General Formulation of 2D Electromagnetic Field in Linear Motors: Green's Function Method with Harmonic Modeling Framework

Fu, Gan; Gottardi, Emma; Curti, Mitrofan; Lomonova, Elena; Ciuhu, Calina

Eindhoven University of Technology

TEMS-0695 Three-Dimensional Equivalent Magnetic Network Modeling and Performance Optimization of Two-Degree-of-Freedom Rotary-Linear Machines

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POSTER SESSION

- Ma, Guangchen; Xiao, Feiran; Zhou, Hang; Wu, Qingyun; Wang, Hao; Liu, Jiawei; Niu, Shuangxia; Yuan, Jiaxin
Wuhan University
- TEMS-0696 A Novel Rotor Topology for Improved Maximum-Speed Capability in SPMSMs**
Lu, Bo Ran; Fang, Haiyang; Li, Dawei
Huazhong University of Science and Technology
- TEMS-0701 Efficiency Optimization of a Direct-Drive Gravity Energy Storage System Based on PM Synchronous Linear Electric Machine**
Wu, Qingyun; Yuan, Jiaxin; Xiao, Feiran; Zhou, Hang; Ma, Guangchen; Wang, Hao; Liu, Jiawei
Wuhan University
- TEMS-0753 A Novel High-Speed Permanent Magnet Machine Topology for Demagnetization Suppression under Fault Conditions**
Du, Meimei; Fan, Xinggang; Fang, Haiyang; Li, Dawei; Qu, Ronghai; Liang, Ziyi
Huazhong University of Science and Technology
- TEMS-0936 An Integrated Rotational Frequency and Voltage Conversion Device for Low-Frequency AC Transmission Systems**
Zhang, Xianzhuo; Wang, Jin; Meng, Fanzhuo; Zhou, Libing; Li, Jian
Huazhong University Of Science and Technology
- TEMS-0964 Spectral Stability and Attenuation-Constrained Optical Localization of Abnormal Discharges in Oil-Immersed Transformers**
Chen, Zehao; Qian, Yong; Pan, Chao; Zhou, Wenchao; Lei, Yifan; Sheng, Gehao
Shanghai Jiao Tong University
- TEMS-0991 Hybrid BEM-Analytical Model Based Fast Air-Gap Magnetic Field Computation Method for Asymmetric Pole-Changing Synchronous Machines**
Meng, Fanzhuo; Wang, Jin
Huazhong University Of Science and Technology
- TEMS-0993 Improvement of Magnet Arrangements and Characteristic Comparison in a Magnetically Levitated Linear Synchronous Motor**
Kimura, Shogo; Yatsu, Yusuke; MURAYAMA, Satoshi; SHIMAZAKI, Masashi; SUZUKI, Kenji
Tokyo City University
- TEMS-0998 Thrust and Thermal Analysis of High-Thrust Coreless PMLSM with Additively Manufactured Windings**
Bai, Xin; Huang, Xuzhen; Wang, Zheng; Liu, Yansong; Yang, Yue
Nanjing University of Aeronautics and Astronautics
- TEMS-1013 High-Power-Density Optimization Design of High-Speed Permanent Magnet Synchronous Motors Considering Rotor Dynamic Constraints**
Shen, Hantao; Fang, Haiyang; Hu, Hao; Wen, Xinjie; Li, Dawei; Qu, Ronghai
Huazhong University of Science and Technology
- TEMS-1059 Research on Topology Design and Thrust Optimization of the Switch Zone for a**

FRIDAY NOVEMBER 27

POSTER SESSION

Linear-Arc Hybrid Motor

Li, Jing; Wang, Zheng; Huang, Xuzhen; Tan, Qiang; Tang, Min

Nanjing University of Aeronautics and Astronautics

TEMS-1104 Vibration Analysis and Optimization of a Modular-Stator PM Vernier Machine Considering Non-Uniform Tooth-Width Modulation

Sun, Jianing; Fang, Haiyang; Li, Dawei; Zhao, Yu

Huazhong University of Science and Technology

TEMS-1110 Noninvasive Identification of the B-H Curve of Toroidal Magnetic Materials

Qin, Xusen; Reza, Zeinali; Curti, Mitrofan

Eindhoven University of Technology

TEMS-1113 Experimental Emulator for Dual-Rotor Generators for Counter-Rotating Wind Turbine Applications

Bais, Hendrik; Kahourzade, Solmaz; Haque, Mohammed; Mahmoudi, Amin

Adelaide University

TEMS-1120 A Novel Real-Time Field Reconstruction Method for Motor Digital Twins using Deep Bayesian Neural Network and POD

Pan, Yuxi; Yuan, Kaiqi; Zhang, Jinrong; Geng, Weiwei; Sun, Yaojie; Wang, Yu

College of Intelligent Robotics and Advanced Manufacturing, Fudan University

TEMS-1176 Integrated Thermal Management System for a 250kW Heavy-duty EV Traction Motor

Jiang, Jianan; Zou, Tianjie

Zhejiang University

TEMS-1064 Research on Wind ing Arrangement of Dual-Redundant Fault-Tolerant Permanent Magnet Motors

Tao Qiu

Huazhong University of Science and Technology

TEMS-0963 Analysis of Submarine Magnetic Signature Variation Caused by Stress Dependent Permeability Under Hydrostatic Pressure

Lee, Juhyeok

Pusan National University

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POSTER SESSION