The 29th International Conference on Electrical Machines and Systems

ICEMS
SINGAPORE 2026

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	**OS3-5** AI-Based Fault Diagnosis & Device Monitoring	**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	**OS1-10** Vibration, Noise & Electro-magnetic Forces	**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 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

Industry Session

Chair

Topics

ORAL SESSION

WEDNESDAY, NOVEMBER 25 Room 2

OS1-1: High-Speed Electrical Machines

Chairs

14:10-14:30 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

14:30-14:50 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

14:50-15:10 TEMS-0546
Circulating Current Reduction in High-Speed SRMs with Intra-Phase Parallel Coil Connection
Xu, Wenyi; Kiyota, Kyohei
Institute of Science Tokyo

15:10-15:30 TEMS-0952
Efficiency Improvement of High-Speed SR Motor Using Amorphous Alloy
Fujikawa, Shota; Iwaki, Keigo; Nakamura, Kenji
Tohoku University

15:30-15:50 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

15:50-16:10 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

ORAL SESSION

WEDNESDAY, NOVEMBER 25 Room 3

OS2-1: Sensorless PMSM Drives I

Chairs

14:10-14:27 TEMS-0671
A Full-Speed-Range Sensorless Control Without Signal Injection for IPMSMs Based on FCS-MPC
Wang, Bokang; Zhang, Yongchang
North China Electric Power University

14:27-14:44 TEMS-0060
Current Ripple Suppression for Multi-Sampled Motors Based on High-Frequency Feature Extraction
Feng, Pengbo; Liang, Ziyi; Gui, Xianguo
Harbin Institute of Technology

14:44-15:01 TEMS-0832
Dual-Axis Pseudorandom Frequency Injection Strategy for Sensorless Control of IPMSM Considering Cross-Coupling Effect and Audible Noise
Zhang, Boyan; Du, Jinhua; Song, Cheng; Zhang, Guoqiang; Xu, Geping
Xi'an Jiaotong University

15:01-15:18 TEMS-0863
Electromechanical Characteristic Identification of Servo System Based on Open Loop Injection
Zhao, Junyu; Zhang, Meiyu; Xu, ZheXi; Xu, Dianguo
Harbin Institute of Technology

15:18-15:35 TEMS-0387
A Dual Improved Adaptive Extended Kalman Filter for Online Multi-Parameter Identification of PMSMs Under Rank Deficiency
Bai, Xun; Liu, Jiaxi; Cao, Jiwei; Li, Liyi
Harbin Institute of Technology

15:35-15:52 TEMS-1067
Position Estimation Error Suppression Strategy for Electrolytic Capacitorless PMSM Drives Based on Grid-Angle-Assisted ADALINE
Chen, Yuanyang; Ding, Dawei; Zhang, Guoqiang; Wang, Gaolin; Xu, Dianguo
Harbin Institute of Technology

15:52-16:10 TEMS-0736
Signal-Injection-Free Ripple-Based Parameter Identification for PMSMs With Optimal Switching-Cycle Interval Selection
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 TEMS-0899
A Cyber-Resilient Control Framework for Dual Active Bridge Converters via Estimation-Based Threat Detection in CAN Bus
Chowdhury, Sayantan; Kumar, Amritesh; Bhattacharjee, Chayan
National Institute of Technology Silchar

14:27-14:44 TEMS-1174
Efficiency Improvement of a Bi-directional CLLC Converter for ESS and 380V DC Bus under Light-load Conditions
Lotkham, Kunakorn; Tanjaroen, Wason; Supatti, Uthane
Kasetsart University

14:44-15:01 TEMS-0111
A Model-Assisted ESO Design for LADRC of Two-Stage LLC Resonant Converters With Second-Harmonic Ripple Suppression
Luo, Xinghong; Yao, Xuliang; Wang, Jingfang; Zou, Tianjie; Wang, Meiqi; Li, Ying
Harbin Engineering University

15:01-15:18 TEMS-1140
An Input Ripple Compensation Method for Boost Converters
Liu, Zhiqiang; Gao, Congzhe
Beijing Institute of Technology

15:18-15:35 TEMS-0061
Dual-Time-Scale Active Damping Control for Resonance Suppression in Hydrostatic Spindles
Liang, Ziyi; Feng, Pengbo; Gui, Xianguo
Harbin Institute of Technology

15:35-15:52 TEMS-0945
Dynamic Performance Improvement of a Four-Switch Buck-Boost Converter via Soft Actor-Critic-Based Reinforcement Learning Control
Ye, Jian; Sun, XiaoTeng; Chen, GuanFan; Pan, Xuewei
Harbin Institute of Technology, Shenzhen

15:52-16:10 TEMS-1132
Fast Communication Between Offshore Converter and Wind Turbines During DC Fault Ride-Through in Offshore VSC-HVDC Systems
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 TEMS-0718 **An Improved Rotor Position Estimation Scheme for Switched Reluctance Motors**
Chen, Maotang; Wang, Chao; Wang, Huijun
Beihang University

14:30-14:50 TEMS-0199 **Sensorless Control for SLP-DSLIM Based on STSMO With SOGI and ESO-PLL**
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 TEMS-0719 **Direct Torque Control Strategy for PMSM Based on a Self-Correcting Flux Observer**
Ma, Hongjun; Huang, Wenxin
Nanjing University of Aeronautics and Astronautics

15:10-15:30 TEMS-0401 **Electrical-Angle-Domain Observer-Based DC-Offset Suppression for PMSM Rotor Position Estimation Using Embedded Linear Hall Sensors**
Zhang, Junlin; Hua, Wei; Zhang, Chao
Southeast University

15:30-15:50 TEMS-0738 **Online Flux Linkage Calibration for Sensorless Control of SRM Based on Lumped Disturbance Extraction Across Dual Switching State**
Jiang, Zijun; Gan, Chun; Ren, Haotian; Zhang, Chong; Gao, Chengkun; Qu, Ronghai
Huazhong University of Science and Technology

15:50-16:10 TEMS-0531 **An Integrated Rotor Temperature Estimation Method for PMSMs Combining Flux Observation and Data-Driven Compensation**
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 TEMS-0892
A Causality-Enhanced Forecasting Framework for Day-Ahead Wind Farm Cluster Power Forecasting
Yang, Mao; Huang, Yutong; Guo, Yunfeng; Wang, Tiancheng
Northeast Electric Power University

14:27-14:44 TEMS-0416
Wind Power Forecasting Using a Gated Multi-Expert Network Considering Extreme Weather Events
Yang, Mao; Jiang, Renxian; Guo, Yunfeng; Zhang, Ao; Su, Xin
Northeast Electric Power University

14:44-15:01 TEMS-0608
A Spatio-Temporal Dynamic Network-Based Method for SCADA Sensor Fault Diagnosis of Wind Turbines
Fang, Ruiming
Huaqiao University

15:01-15:18 TEMS-0434
An Adaptive Voltage Droop Control Method of DFIG Wind Farm for Improving Frequency Support Duration
Wang, Zhongxing; Yi, Chuanzhuo; Zhang, Ao; Zhang, Xueguang
Harbin Institute of Technology

15:18-15:35 TEMS-0156
Multi-Meteorological Factor Knowledge Distillation Dynamic Graph Convolutional Network for Photovoltaic Cluster Power Forecasting
Yang, Mao; Jiang, Yuxi; Huang, Yutong; Jia, Mengqi; Su, Xin
Northeast Electric Power University

15:35-15:52 TEMS-0969
Robust Enhanced CCS-MPC for PMSG-Based Wind Energy Conversion System under Parameter Uncertainty
Devi, Aribam Deleena; Saikia, Lalit Chandra
National Institute of Technology Silchar

15:52-16:10 TEMS-1112
A GIS-Based Suitability Analysis Framework for Siting Solar Energy-Assisted Charging Stations: A Case Study in Rayong, Thailand
Farungsang, Linux; Siangsanoh, 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-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 TEMS-0446
Analytical Modeling of Maximum Mechanical Stress in IPMSM Rotors made of Dual-Phase Magnetic Laminated Materials
Yang, Chenyi; Ou, Jing; Liu, Yanyun; Liu, Yingzhen; Liang, Dawei; Xu, Dianguo
Harbin Institute of Technology

14:27-14:44 TEMS-0152
Data-Driven Modeling and Prediction of Iron Loss in Permanent Magnet Synchronous Motors with Multi-Factor Consideration
Guo, Liyan; Hao, Rongxuan; Yan, Jiaxu; Wang, Huimin
Tiangong University

14:44-15:01 TEMS-0835
Design and Analysis of a Variable-Rotor-Pole-Number Electrically Excited Synchronous Motor with Integrated Winding
Dong, Zixu; Jiang, Mingyuan; Zhang, Zhang; Zhang, Zhouyang; Niu, Shuangxia; CHAU, Kwok-Tong
The Hong Kong Polytechnic University

15:01-15:18 TEMS-0926
Electromagnetic Performance Analysis of Slotless Motor with Unbalanced Windings Based on Subdomain Model
Yu, Wenbin; Hu, Peidong; Wang, Zhiqiang; Shi, Tingna
Zhejiang University

15:18-15:35 TEMS-1106
Reduced-Dimensional Fault-Tolerant Control for Thrust Ripple Suppression in High-Speed Maglev Symmetrical DTP-LSM
Hu, Zongbo; Kang, Jinsong; Li, Xinyue
Tongji University

15:35-15:52 TEMS-0534
Weakly Coupled Multiphysics Modeling of Electromagnetic Vibration in PMSMs Considering Mesh and Time-Scale Mismatch
Kim, Jin-Gyun; Le, Chi-Hieu
Kyung Hee University

15:52-16:10 TEMS-0864
Modeling and Suppression of Torque Ripple of Direct-Drive Delta-Shape Permanent Magnet Vernier Motor Considering Effects of Stator Teeth and PM Shape
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 TEMS-0210
Current-Ripple-Sampling-Based Online Inductance Identification for FCS-MPC with Fine Switching Granularity in PMSM Drives
Yang, Chenyu; Hu, Mingjin; Hua, Wei
School of Electrical Engineering, Southeast University

16:47-17:04 TEMS-0424
Dead-beat Predictive Current Control for Dual Three Phase PMSM System Based on Zero Common-mode Voltage Vector
Cao, Yuanhang; Xu, Jinquan; Guo, Hong
Beihang University

17:04-17:21 TEMS-0876
Iron Loss Reduction in High-speed PMSMs Based on Optimized PWM and Model Predictive Control
Xu, Kai; Chu, Guoyu; Dutta, Dr Rukmi
The University of New South Wales

17:21-17:38 TEMS-0616
Iterative Learning Enhanced Robust Deadbeat Predictive Control With Extended State Observer for NPC Inverter-Fed Series-End Winding PMSMs
Chen, Hongwu; Liao, Yiwen; Wang, Tianci; Zhang, Bowen; Liu, Yuxin; Yu, Feng; Liu, Chunhua
City University of Hong Kong

17:38-17:55 TEMS-0260
Model-Based ADRC-MPCC for PMSM Drives in Washing Machine Application with Dynamic Load Variations
Yoon, Yongki
TORQOS

17:55-18:12 TEMS-0735
Online Input Delay Identification and Compensation for Deadbeat Predictive Current Control of PMSM
Gao, Chengkun; Gan, Chun; Wang, Hongzhe; Zhang, Chong; Jiang, Zijun
Huazhong University of Science and Technology

18:12-18:30 TEMS-0162
Robust Deadbeat Control for Direct Drive Torque Motor Emulator with Exact Discretization and Parameter Mismatch Adaptation
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 TEMS-0672
A Physics-Neural Network Model for Real-Time Simulation of SiC MOSFETs
Chen, Yinbin; Pan, Xuewei; Wang, Can
Harbin Institute of Technology (Shenzhen)

16:47-17:04 TEMS-0605
Online Inductance Identification of PMSM based on the HF Equivalent Impedance Model Considering Iron Loss
Wang, Yueyang; Bai, Jingang; Zheng, Ping; Li, Jiahong; Sui, Yi
Harbin Institute of Technology

17:04-17:21 TEMS-1168
Freewheeling Diode and Deadtime Loss Considerations for GaN E-HEMT-Based Reaction Wheel Motor Drives
Lwo, David; Hsieh, Min-Fu
National Cheng Kung University

17:21-17:38 TEMS-0585
Intrusive Effect of Gate-Current Measurement on High-Side Turn-Off in Double-Pulse Test
Zhi, Shuaiqing; Ma, Mingcheng; Yan, Yishun; Pan, Yanchen; Xu, Dianguo
Harbin Institute of Technology

17:38-17:55 TEMS-0069
Loss Evaluation of 3-Level T-Type Power Converters for 750V LVDC Marine Thrusters: Comparing Si, SiC, and Si/SiC Device
Selvaraj, Raghu; Rathore, Akshay
National university of Singapore

17:55-18:12 TEMS-0584
Non-Monotonic Turn-Off Overshoot of IGBT Under Conventional Gate Drive and Its Mechanism
Ma, Mingcheng; Xu, Binbo; Jiang, Wanze; Xu, Dianguo
Harbin Institute of Technology

18:12-18:30 TEMS-0628
Structural Design Method of 3D Vibration Moter "XReactor" Based on a Dynamic Model Incorporating Nonlinear Magnetic Springs
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 TEMS-1057
An Impedance-Remodeling-Based Strategy for Suppressing Low-Frequency Oscillations in Inverter-Fed Induction Motor Systems
Yang, Zebin; Wang, Wentao; Han, Jingchen; Chen, Canqian; Wang, Xuehua; Ruan, Xinbo
HuaZhong university of science and technology

16:50-17:10 TEMS-0983
Dynamic Load Torque Compensation in IM FOC Drives Using a Reduced-Order Robust Disturbance Estimator
Peter, Naithan; Kumar, Shahil; Kumar, Krishal
The University of the South Pacific

17:10-17:30 TEMS-0368
MPC-Based Fast Active Power Regulation for DFIG Connected to DRU-HVDC
Wu, Han; Wang, Tao; Wu, Lijian
Zhejiang University

17:30-17:50 TEMS-0544
Study on Electrical Parameter Settings for Mechanical-Simulator-Based Sensorless Control of Induction Motors
OBITSU, Ayumi; Kondo, Keiichiro
Waseda university

17:50-18:10 TEMS-0751
Switching Frequency Stabilization in Rectangular Boundary Model Predictive Control for Induction Motors
Wang, Mingshuo; Qi, Xin
University of Science and Technology Beijing, Beijing

18:10-18:30 TEMS-0819
Transient simulation of mode switching in a dual mode reluctance motor using vector control
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 TEMS-0495
A Segment Based Shallow Neural Network Framework for Supercapacitor Degradation Modeling and RuL Estimation
Kumar, Shaheel
University of the South Pacific

16:47-17:04 TEMS-0941
Robust Lithium-Ion Battery SOC Estimation via Adaptive Multi-Kernel Minimum Error Entropy Extended Kalman Filter
Chen, Kezheng; Zhao, Dan; Shen, Ke
Northwestern Polytechnical University

17:04-17:21 TEMS-1033
Digital Twin Enabled Scalable Solution for cluster of DC microgrids
Singh, Aakash; Shekhar, Shashank; Alam, Aftab
National Institute of Technology Manipur Imphal

17:21-17:38 TEMS-0717
Distributed Voltage Control Method Under Variable Topology Based on Power Flow Meta Model
Zhang, Kaiyuan; Wang, Zhongguan; Guo, Li; Wang, Chengshan
School of Electrical and Information Engineering, Tianjin University

17:38-17:55 TEMS-0940
Mechanism-Data Fusion-Based Synchronous Estimation of Capacitance and ESR for T-Type Three-Level Inverters
Jiang, Wei; Zhao, Dan; Shen, Ke
Northwestern Polytechnical University

17:55-18:12 TEMS-0440
Power Distribution and Coordinated Control Strategy Based on State of Charge of Hybrid Energy Storage System in Ship Microgrid
Zhang, Yang
Harbin Engineering University

18:12-18:30 TEMS-0615
Current Oscillation Suppression with Harmonic Isolation Enhancement Control for Adjustable Reactance
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, Xiuhan; 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
Loss-Aware Robust State-Space Neural Network for PMSM 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 Electonic 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
Zürrlein, 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
Independent-Coil-Based Current Control Strategy for Permanent Magnet Linear Synchronous Motor Based on Extended State Observer
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, Jiaxi; 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

8:30-8:47 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

8:47-9:04 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

9:04-9:21 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

9:21-9:38 TEMS-0921
Comparative Study of Multi-tooth Dual PM Machines Considering PM Demagnetization
Dey, Ankan; Zhu, Z.Q.
The University of Sheffield

9:38-9:55 TEMS-0805
Mixed NdFeB and Ferrite Magnets in Dual-PM Machines
Jiang, Haoran; Zhu, Z.Q.; Li, Shiyun
The Hong Kong Polytechnic University (PolyU)

9:55-10:12 TEMS-0837
Theoretical Analysis and Design of Surface Permanent Magnet Machines with Consequent-Pole Dual-Layer Halbach Array
Xu, Minxuan; Wang, Yawei; Chu, Guoyu; Chen, Wutao; Yuan, Yujie; Qu, Ronghai
Huazhong University of Science and Technology; The University of New South Wales.

10:12-10:30 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

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**
Chuanyue, 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, Alfan; 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 TEMS-1049
Four-Quadrant Experimental Verification of an MTPA Angle Search Method Using Virtual Signal Injection with Inductance Identification
Arai, Taishi; Maekawa, Sari; Shibata, Sho; Hamada, Shizunori
Meiji University

11:07-11:24 TEMS-0079
Active Damping Controller With Inverter-Current-Only Feedback Based on a Resonant-Frame Extended State Observer for LC-Equipped High-Speed PMSMs
Liu, Xiaowang; Liu, Jiaxi
The Department of Electrical Engineering, Harbin Institute of Technology

11:24-11:41 TEMS-0593
Low Speed Sensorless Control Using a Single-Shunt Current Sensor with a Dynamic Range ADC
Watanabe, Kaito; Maekawa, Sari
Meiji University

11:41-11:58 TEMS-0739
An Online Asymmetric Voltage Drop Compensation Method for Flux Estimation of FMDRM System Based on Inductance Continuity
Liu, Zhe; Gan, Chun; Ren, Haotian; Zhang, Chong
Huazhong University of Science and Technology

12:15-12:32 TEMS-0539
Inertia and Resonance Parameter Identification for Direct Drive Servo Systems with High Inertia Ratios
Morita, Ryosuke; Maekawa, Sari; Hanafusa, Kazuki; Suzuki, Ittetsu
Meiji University

12:32-12:50 TEMS-0712
Resolver Excitation Phase Shift: Physical Analysis, Thermal Effects, and Online Calibration
Mi, Wenyuan; Zhao, Hang; Zhang, Wei Jia; Yu, Jincheng
The Hong Kong University Of Science And Technology (Guangzhou)

ORAL SESSION

THURSDAY, NOVEMBER 26 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; 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
Siangsanoh, 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 TEMS-0786
A Cross-Modal Feature Interaction Network for Anti-Noise Few-Shot PMSM Inter-Turn Short Circuit Fault Diagnosis
Quan, Yu; Li, Wenlong; Xu, Hui
Nanjing University of Science and Technology

11:07-11:24 TEMS-0781
Projection-Based Predictive Current Allocation for Torque Ripple Reduction in Switched Reluctance Motors
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 TEMS-0151
IPMSM Drives Using a Single DC-Link Current Sensor
Zhang, Yujia; Lin, Maohui; Yin, Zhenxiao; Zhou, Fobao; Zhao, Hang
Hong Kong University of Science and Technology (Guangzhou)

11:41-11:58 TEMS-0386
Bearing Degradation Condition Monitoring Method of High-reliability Fault-Tolerant Permanent Magnet Motors Based on Stator Current Signal
Ma, Yang; Xu, Jinquan; Guo, Hong; Tian, Xinlei; Wang, Chao
Beihang University

11:58-12:15 TEMS-0842
Online Temporal-Network-Based Compensation for Resonance Suppression in Dual-Inertia Position Control Systems
Zhuoyuan Wu; Yujia Zhang; Yang Shen; Donglong Lin; Hang Zhao
The Hong Kong University of Science and Technology (Guangzhou)

12:15-12:32 TEMS-0821
Post-Contact Object Direction Estimation Based on Robot Joint Torque Response
Kim, Namgyun; Kang, Ye Gu
University of Seoul

12:32-12:50 TEMS-0203
Multi-Modal FFT Feature-Based Machine Learning Approach for Stator Fault Diagnosis in PMSMs
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**
Chenlei Hou, Yawei Wang, Zhenyu Liao, Lei Yang, Wenyang Li, Junhao Li, Jiabing Hu
Huazhong University of Scicence 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

THURSDAY, NOVEMBER 26 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

THURSDAY, NOVEMBER 26 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; Lee, Taejin; 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 TEMS-0612
Fault Diagnosis of Inter-Turn Short-Circuit Fault in PMSM for Electric Vehicles Based on Full-Order Sliding Mode Observer
Wang, Mingqiao; Li, Jiahong; Liu, Wei; Zheng, Ping; Sui, Yi; Bai, Jingang
Harbin Institute of Technology

14:07-14:24 TEMS-0176
Fault-Tolerant Control of T-type Inverters via Neutral-Point Voltage Unbalancing Without Front-End Rectifiers
Baek, Daewon; Ko, Youngjong
Pukyong National University

14:24-14:41 TEMS-0777
Open-Circuit Fault-Tolerant Control Scheme for a Low-Power Hybrid Magnetic Bearing Drive With Multiple Converter Topologies
Lin, Yi; Jiang, Dong
Huazhong University of Science and Technology

14:41-14:58 TEMS-0150
Power Switch Open-Circuit Fault Detection Method for Dual-Three-Phase PMSM Starter/Generator system Based on Negative Sequence Current
Li, Xingtong; Tian, Xinlei; Zhang, Ling
School of Electrical and Control Engineering, North China University of Technology

14:58-15:15 TEMS-0085
Research on Fault-Tolerant Operation Control of Five-Phase Open-Winding Motors under Zero-Sequence Current Suppression
Zhao, Wenhao; Su, Yi; Nie, Sanchun; Feng, Ding; Zheng, Jun
Southwest Jiaotong University

15:15-15:32 TEMS-1143
Weighting-Trade-Off-Based Fault-Tolerant Current Reconstruction Method for Five-Phase Permanent Magnet Synchronous Motors Under Single-Phase Open-Circuit Fault
Huang, Xikai; Sun, Xiaoyong; Chen, Chao; Chen, Zhen
Beijing Institute of Technology

15:32-15:50 TEMS-0192
Suitability Analysis of Electrical Parameters for IPMSM Diagnosis Under Various Fault Conditions
Im, Seyoung; Heo, Jun-Hyeok; Yang, Yunsu; Hur, Jin
Incheon National University

ORAL SESSION

THURSDAY, NOVEMBER 26 Room 6

OS1-10: Vibration, Noise and Electromagnetic Forces

Chairs

13:50-14:07 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

14:07-14:24 TEMS-0532
A Vibration-Based Inverse Approach for Electromagnetic Force Validation in PMSMs
Le, Chi-Hieu; Kim, Jin-Gyun
Kyung Hee University

14:24-14:41 TEMS-1018
Effect of Control Strategies and PWM Techniques on Noise and Vibration of Permanent Magnet Synchronous Machines under Low Carrier Frequency
Zheng, Yinzhao; Li, Shiyun; Lu, Kejin; Zhu, Zi Qiang; Li, Henghui; Wang, Siqi; Chen, Xiao; Jewell, Geraint; Liu, Yue; Wu, Hui; Luo, Ruiren
Aston University

14:41-14:58 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

14:58-15:15 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

15:15-15:32 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

15:32-15:50 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 7

OSS-9:

Special Session C-3: Design and Analysis of High Torque/Power Density Permanent Magnet Synchronous Machines

Chairs

13:50-14:07 TEMS-1021
A Double Annular Stepped Baffle Oil Cooling Structure for Eliminating Flow Dead Zones in SSDR Axial-Flux Permanent Magnet Motors
Li, Junxi; Li, Wenlong; Zhu, Jingheng; Quan, Yu
Nanjing University of Science and Technology

14:07-14:24 TEMS-1136
Permanent Magnet Magnetomotive Force Editing of Axial-Flux Permanent Magnet Machine
Nanting Chen, Yawei Wang, Minxuan Xu, Wutao Chen, Hongjie Zhu, Fulin Zhou, Jinyu Wang, Xinchun Lin, Jiabing Hu
Huazhong University of Science and Technology

14:24-14:41 TEMS-0935
A Five-Phase Fault-Tolerant Segmented-Tooth Consequent-Pole Permanent-Magnet Vernier Machine for High-Torque-Density eVTOL Propulsion
Hsieh, Min-Fu; Huynh, Anh; Duong, Minh-Hoc Le; Nguyen, Viet-Tan; Lee, Chin-Hung
National Cheng Kung University

14:41-14:58 TEMS-1008
Design and Optimization of Dual-Stator Single-Rotor Axial Flux Permanent Magnet Motor
Guo, Hongying; Duan, Zhaoyu; Nie, Sichuang; Zou, Huanqing; Wu, Shaopeng
Harbin Institute of Technology

14:58-15:15 TEMS-0873
Multi-Stage Hybrid Topology Optimization for IPMSMs
Tonchua, Kantapat; Khunkitti, Pirat
Khon Kaen University

15:15-15:32 TEMS-0218
Transient Short-Circuit Analysis of an Equidirectional Toroidal-Winding Six-Phase High-Speed PMSM Under Single-Phase Short-Circuit Faults
Yi Liu, Jiahui Chen, Yuhan Zhang, and Yuan Wan
Nanjing University of Science and Technology

15:32-15:50 TEMS-0831
Investigation of Coreless Permanent Magnet Synchronous Motor with Additive Manufacturing Winding
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

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

Chairs

16:10-16:27 TEMS-0729
A TK_TSNet Model for Motor Bearing Misalignment Fault Diagnosis
Gao, Ganlu; Yang, Ming; Zhu, Junyan; Teng, Yue
Harbin Institute of Technology, School of Electrical Engineering and Automation

16:27-16:44 TEMS-1197
Data-Driven RUL Estimation of Induction Motor Bearings Through PCA-Guided Vibration Analysis
Bainiyatu, Miliana; Mala, Ashurita; Raj, Krish; Kumar, Rahul
The University of the South Pacific

16:44-17:01 TEMS-1127
Explainable Edge AI for PMSM Stator Inter-Turn Short Circuit Fault Diagnosis Using CatBoost and Current-Derived Features
HADJI-RAHIM, KEVIN; Thongprasri, Pairote; Poolphaka, Paisak; Supatti, Uthane
Kasetsart University

17:01-17:18 TEMS-0155
Intelligent Multimodal Fusion for Partial Discharge Identification of Post Insulators in High-Voltage Switchgear
Wang, Jinyu; Zhu, Tianle; Zuo, Pengqi; Jin, Lijun
College of Electronic and Information Engineering, Tongji University

17:18-17:35 TEMS-0676
Pairwise Input with Handcrafted Signal Features for LSTM-Based Motor Fault Diagnosis
Seangwong, Pattasad; Nguyen, Son
Khon Kaen University

17:35-17:52 TEMS-0984
Prediction of the Remaining Useful Life of a PEMFC using a Time Delay Neural Network
Kumar, Krishal; Takala, Viviann; Kumar, Shahil
University of the South Pacific

17:52-18:10 TEMS-0694
RUL Prediction for Rolling Bearings Based on Dual-Attention CNN-BiGRU with Asymmetric Loss
Xu, Hui; Li, Wenlong; Quan, Yu
Nanjing University of Science and Technology

ORAL SESSION

THURSDAY, NOVEMBER 26 Room 2

OS1-11: Faults, Reliability & Insulation

Chairs

16:10-16:27 TEMS-0190
A Shaft Voltage Analysis Mechanism in EV Traction Motors under Variable Load Conditions
Roh, Kyeong-Min; Jo, Byoung-Wook; Hur, Jin
Incheon National University

16:27-16:44 TEMS-1129
Vibration Analysis of Short-Circuit Faults in High-Power Permanent Magnet Motors for Electric Locomotives
Ma, Mingyang; Lu, Yang; Zhang, Jiangtao; Sun, Deqiang; Li, Jian
Huazhong University of Science and Technology

16:44-17:01 TEMS-0273
Characterization of Parasitic Capacitance and Shaft Voltage in PMSMs According to Winding Method
Nam, Jung-Hyun; Jo, Byoung-Wook; Hur, Jin
Incheon National University

17:01-17:18 TEMS-1137
Investigation into Number and Placement of Dynamic Vibration Absorbers Attached to Outer Circumference of Motor for Effective Vibration Suppression
Senda, Shunya; Kosaka, Takashi; Funasaka, Naho
Nagoya Institute of Technology

17:18-17:35 TEMS-1061
Fault Diagnosis Strategy for Rotor Inter-Turn Short-Circuit in DFIG Based on High-Frequency Injection
Bai, Jingang; Wang, Yuheng; Wang, Xixi; Liu, Wei; Zheng, Ping
Harbin Institute of Technology

17:35-17:52 TEMS-0654
ROM-Based Training Data Generation for 1D-CNN Eccentricity Estimation in PMSMs
Kim, Daehan; You, Yongmin
Department of Future Mobility Convergence, Chonnam National University

17:52-18:10 TEMS-0242
Investigation of the Influence of Stepwise Gearbox Component Integration on Bearing Currents and Bearing Voltages in Electric Drive Systems
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 TEMS-1045
A Model Predictive Torque Control Method with Advanced Steady-State Performance Based on a New State Space Configuration
Li, Zishan; Wu, Yunlong; Li, Wanquan; Yang, Shijie; Zheng, Ping
Harbin Institute of Technology

16:27-16:44 TEMS-0681
A Model-Free Self-Commissioning Method for Servo Systems Based on Quantitative Feedback Theory and Reinforcement Learning
Song, Shitao; Gu, Jun; Xu, ZheXi; Xu, Dianguo
Harbin Institute of Technology

16:44-17:01 TEMS-0997
An Improved Chopping Current Control for Switch Reluctance Motor (SRM) Drives using Finite Control Set Model Predictive Control (FCS-MPC)
Kohmuan, Pakjira; Poolphaka, Paisak; Thongprasri, Pairote; Phattanasak, Matheepot; Jamshidpour, Ehsan; Lubin, Thierry; Takorabet, Noureddine
Electrical Engineering Department, Faculty of Engineering at Sriracha, Kasetsart University Si Racha Campus, Thailand

17:01-17:18 TEMS-0229
Model-Free FCS-MPC based Dynamic Linearization Data Model for Dual Three-Phase PMSM with Torque Ripple Reduced
Xiaojun, Zhang; Tan, Ruilong; Situ, Anqi; Kang, Min; Yang, Lei; Yang, Jiaqiang
Zhejiang University of Science and Technology

17:18-17:35 TEMS-1034
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
Wan, Changhui; Fan, Yiming; Yu, Zhiheng; Ren, Qiulin; Wei, Liangliang
Sun Yat-sen University

17:35-17:52 TEMS-0740
Model-Free Predictive Current Control for SPMSM Based on Adaptive Generalized Integrator Extended State Observer
Lin, Jinpu; Dou, Manfeng; Yang, Heming; Dang, Mengxi; Zhao, Dongdong; Hua, Zhiguang
Northwestern Polytechnical University

17:52-18:10 TEMS-0656
Model-Free Predictive Current Modeling for PMSM Drives Using Auto-Regressive with Exogenous Input Model
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 TEMS-0236 **A Discharge Control Strategy for Flywheel Energy Storage Systems with Capacitor-Energy-Storage-Error-Based Disturbance Observer**
Tan, Ruilong; Xiaojun, Zhang; Kang, Min; Yang, Lei; Yan, Yonghui
Zhejiang University of Science and Technology

16:30-16:50 TEMS-0622 **Design and Control of Two-Stage Integrated On-Board Chargers for Two-Wheelers**
Dam, Debarati; Basak, Saptarshi
Indian Institute of Technology Delhi

16:50-17:10 TEMS-0408 **An Energy-Conversion-Based Control Strategy for Improving the Dynamic Response of the Single-Phase Inverter**
Zhang, Qiang; Shi, Hongyu; Wang, Ziwen; Zhang, Zikang; Yu, Bowen
Harbin Engineering University

17:10-17:30 TEMS-0894 **Fast Sliding-Mode MPPT Control for Semi-Direct-Drive PMSG-Based High-Altitude Wind Power Systems**
Zhou, Zixun; Wang, Shanming; Liu, Wenmao; Li, Hongchao; Cui, Yunfei; Wang, Yu; Zheng, Quan
Tsinghua University

17:30-17:50 TEMS-0342 **Loss Analysis of a Large-Capacity Variable-Speed Pumped Storage Machine Fed by Fully Rated M3C Under Steady State and Fast Power Response**
Yang, Xiaochun; Gao, Yuting; Chen, Dongxiao; Li, Guifen; Hu, Zhaohua
School of Electrical Engineering and Automation, Wuhan University, Wuhan, China

17:50-18:10 TEMS-0576 **Predictive Flux Control of Dual Stator Winding Machine for Renewable Energy Generation**
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 TEMS-1032
Generalized Hybrid Modular Multilevel Converter Topology and Control Scheme for Quasi-n-Level Operation
Laumann, Jan Niclas; Mertens, Axel
Leibniz University Hannover

16:30-16:50 TEMS-0580
Mechanical-Impedance Matching Based Analysis Method for Electromechanical Coupling Influence on Torsional Vibration of Machine Drives
Wang, Qishuai; Yang, Shuying; Liu, Jiakang; Zhu, Guangze; Fang, Jiayu
Hefei University of Technology

16:50-17:10 TEMS-0394
Online Battery Impedance Estimation Under Operating Conditions via a Front-End Converter in an Integrated Motor Drive System
Jeon, Wan; Kang, Ye Gu
University of Seoul

17:10-17:30 TEMS-0177
Reliability Analysis of SMPS Under Universal AC Input Voltage Conditions
Jang, Yun Sik; Lee, Jung Ho; Lee, Kyoung Lim; Kang, Feelsoon
Gyeongsang National University

17:30-17:50 TEMS-1199
Research on Electromechanical Coupling Modeling and Decoupled Control of DFIG-Based Natural Gas Differential Pressure Power Generation Systems
Sun, Xiang; Zhang, Longlong; Cheng, Cheng; Dong, Wenbo; Xu, Litao; Jin, Qiongting
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 TEMS-0355
A Variable-Flux Line-Start Machine with Mechanical Flux-Adjusting Elements for Increased Start-Up Performance
Krainer, Thomas; Weissitsch, Gabriel; Peer, Markus; Marth, Edmund; Bramerdorfer, Gerd
Johannes Keppler University

16:27-16:44 TEMS-0533
Reducing Rare Earth Elements in Large Offshore Wind Direct Drive Permanent Magnet Generators
Khosravimehr, Erfan; Kodalle, Fabian; Ebrahimi, Amir
University Bremen

16:44-17:01 TEMS-0166
Analysis and Mitigation of Controller-Induced Current Harmonics on Rotor Electromagnetic Behavior in HTS Synchronous Motors
Wu, Wu Sitong
the National Key Laboratory of High Density Electrical Energy Conversion, Huazhong University of Science and Technology

17:01-17:18 TEMS-1255
Design Considerations for Pole-Changing Machines in Aerospace Applications
Mekahlia, Abdelhak; BENMAMAS, Loucif; Ramarotafika, Rindrarivelo
Safran Tech

17:18-17:35 TEMS-0748
Design of a Novel Axial Flux Hybrid Excitation Synchronous Motor for UAV Propulsion Applications
Kim, Se-Eun; YOU, YONGMIN
Department of Future Mobility Convergence, Chonnam National University

17:35-17:52 TEMS-0092
Switching Speed Manipulation of Mechanical Modulators in the Rotor of a Variable Flux PMSM through Direct-Axis Current Injection
Weissitsch, Gabriel; Krainer, Thomas; Bagnara, Matthew; Marth, Edmund; Bramerdorfer, Gerd
Johannes Kepler University

17:52-18:10 TEMS-0944
Analytical Calculation of No-Load Magnetic Field for a Permanent Magnet Linear Motor with the Same Number of Poles and Slots
Cai, Ziyi; Chen, Jinhua; Yang, Jiutong; Yan, Wenyuan; 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-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

17:10-17:30 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

17:30-17:50 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
Görges 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-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

9:55-10:12 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 TEMS-1125
2-in-1 Motor Drive System Using a Single Inverter
Hirano, Takumi; Akatsu, Kan
Yokohama National University

8:47-9:04 TEMS-0293
Single-Phase Integrated Charging for Dual-Inverter Open-Winding Motor Drives With Independent Power Control and Ripple Mitigation
Li, Gaofeng; Wei, Jiadan
Nanjing University of Aeronautics and Astronautics

9:04-9:21 TEMS-0435
A Reverse-Series IGBT-Based Winding Switching Topology for Dual-Winding PMSM Drives With Overvoltage Suppression
Cui, Mingkai; Chai, Feng; Long, Peiyu; Chen, Lei
Harbin Institute of Technology

9:21-9:38 TEMS-0414
High-Frequency Equivalent Modeling Method of Dual Three-Phase PMSM Drives for Conducted EMI Prediction
Tian, Dajie; Zhou, Qiang; Xu, Jinquan; Li, Xiao; Guo, Hong
Beihang University

9:38-9:55 TEMS-1090
Joint Active Electromagnetic Interference Suppression for Active Magnetic Bearings and Dual Three-Phase Motors
Li, Mingjian; Zhou, Mingqu; Jiang, Dong
School of Electrical and Electronic Engineering

9:55-10:12 TEMS-0503
Robust Condition Monitoring of Single-Phase BLDC Fan Motors in Corrosive Environments via Physics Model-Based Residual FFT
Shin, Heemun; Kang, Ye Gu
University of Seoul

10:12-10:30 TEMS-0683
Offline Parameter Identification of Dual-Winding Induction Machines Based on Three-Phase Inverter
Bi, BinQi; Yang, Haitao; Zhang, Yongchang
North China Electric Power University

ORAL SESSION

FRIDAY, NOVEMBER 27 Room 6

OS2-21: Reluctance 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-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

9:04-9:21 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, Xinzheng; 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-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

9:50-10:10 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

10:50-11:10 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 Technnology

11:10-11:30 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

11:30-11:50 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

11:50-12:10 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

12:10-12:30 TEMS-0222
Optimized Analysis of Electromagnetic Characteristics of Voice Coil Motor for Maglev
Lu, Hao; Wang, Shuo; Kou, Baoquan
Harbin Institute of Technology

12:30-12:50 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

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 TEMS-0728 **A Model Following Control Approach for Vibration Suppression in Servo Systems**
Zhu, Junyan; Yang, Ming; Xiang, Tianxiang; Teng, Yue; Gao, Ganlu
Harbin Institute of Technology, School of Electrical Engineering and Automation

11:10-11:30 TEMS-0758 **Adaptive Generalized Active Disturbance Rejection Control of PMSM Drive System Using Inertia Identification**
Liu, Hao-Wei; Zhou, Hao-Yu; Liu, Yanting; Zuo, Yuefei; Liu, Chuang; Wang, Kai
Nanjing University of Aeronautics and Astronautics

11:30-11:50 TEMS-0985 **Improved Load Disturbance Rejection in Induction Motor Drives Using GA-Optimized Fractional-Order PI Control**
Kumar, Krishal; Peter, Naithan
The University of the South Pacific

11:50-12:10 TEMS-0590 **Modeling and Control of Position–Current Dual-Loop Servo Systems for Nonlinear Disturbance Compensation**
Lan, Tianhao; Yang, Ming
Harbin Institute of Technology

12:10-12:30 TEMS-0602 **Position Control of Joint Module Based on Hybrid Controller using an Encoder Only on Load Side**
Guo, Huan; Wang, Jiyao; Xu, Wei
School of Electrical Engineering Southeast University

12:30-12:50 TEMS-0678 **QFT-Based Robust PI Controller Design with Resonance Suppression for Double-Inertia Servo Systems**
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 TEMS-0174
A Dual-Mode LLC Isolated DC-DC Converter for Wide Voltage Range
Hu, Guangfu; Wu, Fengjiang
Harbin Institute of Technology

11:10-11:30 TEMS-0172
Integrated Onboard Wiredwireless Charging Topology for Electrical Vehicles
Wu, Siwei; Wu, Fengjiang
School of Electrical Engineering and Automation, Harbin Institute of Technology

11:30-11:50 TEMS-1042
A Dwell-Time-Controllable Common-Mode Voltage Elimination Method for Generalized Dual-Inverter-Fed Aircraft Starter/Generator System
Zhao, Dan; Li, Rui Long; Zhang, Min; Zhao, Guodong; Shen, Ke
Xi'an University of Technology

11:50-12:10 TEMS-0136
Decentralized Power Allocation Strategy for MAB Converter-Interfaced Fuel Cell/Battery/Supercapacitor Hybrid Power Systems in Electric Propulsion Aircraft
Yang, Jinxu; Zhang, Yifan; Li, Xiangke; Jiang, Wentao; Zhao, Xin; Wu, Xiaohua
Northwestern Polytechnical University

12:10-12:30 TEMS-0992
Enhanced Current Reconstruction Method in Low Modulation Index Area for Three-Phase Motor Drives with Single DC-link Current Sensor
Li, Zhiwei; Wang, Zheng
Southeast University

12:30-12:50 TEMS-0923
An Optimized Carrier Phase-Shift PWM for High-Frequency Torque Ripple and Current Harmonics Suppression in Dual Three-Phase PMSMs
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**

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**

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, Xinzhen
Qingdao University

TEMS-0322 **Analytical Calculation of Eddy Current Losses in Additively Manufactured Rotors of Synchronous Reluctance Maschines**
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**
Xinyi Tan, JingLin Liu, YiWei Han, YuQi Guan
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

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 PMaSynRMs**
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 PMa-BSynRM 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.

Nanyang Technological University

TEMS-0088 **Design and Analysis of Active Magnetic Bearings for High-Speed Generators in a Supercritical CO_2 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, Qiongxuan

State Key Laboratory of High-Density Electromagnetic Power and Systems, Institute of Electrical Engineering, Chinese Academy of Sciences

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

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-1203 **Mission Profile Based Motor Sizing for Agricultural UAV Propulsion: A Thermal-Equivalent Torque Approach**
Bhardwaj, Vaibhav; Jain, Amit
IIT Delhi

TEMS-0146 **A Robust Current Harmonic Rejection Method Based on Multi-Synchronous Reference Frame Observer for PMSM Drives**
Wang, Nanjiang; Wang, Yuanlin
School of Automation, Northwestern Polytechnical University

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-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

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

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 Electro-magnetic 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
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
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

Tianjin University

TEMS-1089 **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

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**

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**

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

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
Northwesten 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**

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, Jiaxing; 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**

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

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
Gyeongsang National University

TEMS-0431 **Iron Loss Calculation Method for IPMSM Under Operating Conditions Based on a Hybrid Dynamic Hysteresis Model**
Bo Yin, Long Chen, Tong Ben, Juan Luo, Yongjian Li
China Three Gorges University

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
University of Nottingham

TEMS-0448 **Eddy Current Suppression and Thrust Enhancement of a Linear Motor with Slitted Additively Manufactured Windings and Partial Auxiliary Cores**
Zheng Wang, Xuzhen Huang, Yansong Liu, Yue Yang, and Qiang Tan
Nanjing University of Aeronautics and Astronautics

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 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**
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 **Gabor-Filter-Based Topology Optimization of Synchronous Reluctance Motors Considering Press-Fitting Stress in Rotor Core**
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; Liu, Jinglin; Guan, Yuqi; Tan, Xinyi
School of Automation, 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

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-Eighit Coil Motor for an Axial-Flow Pomp 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**
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**
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

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**

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; Liu, Penglong; Lu, Yuan; Shi, Yufan
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; Dinh, Minh-Chau; 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**

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**
Changshuo Qiu, Xiangyu Kong, Jin Su, Ling Chen, Ke Li, Chongbo Sun
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**

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
Tianin 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 and Forecasting Based on DBSCAN-Assisted Clustering and Multi-Dimensional Factor Analysis**
Yu, Rui; Kong, Xiangyu; Lv, Yang; Li, Ke; Su, Jin; Wan, Zhiwei
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**

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 **LLM-Guided Adaptive Demand-Response Boundaries for Bi-Level Low-Carbon Scheduling of Integrated Energy Systems**
Ling, Chen; Kong, Xiangyu; Chen, Yi; Qiu, Changshuo; Qi, Yi; Jin, Panlong
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, Jiaxing
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**
Juntao Xu, Xiao Yin, Guangchen Li, Siwen Wang, Jinkui He, Rende Zhao
China University of Petroleum (East China)

TEMS-0977 **Joint Price Prediction and Co-optimization 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

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

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

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; huang, cheng; Zhang, Yue; Wang, Shuo; Lee, Dong-Hee
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

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 **Zero-CMV Hysteresis-Based SVPWM Using Virtual 0^{-}-Mode Voltage Vectors for Zero-Sequence Current Suppression in an Open-Winding Symmetrical Six-Phase PMSM Drive**

Yu Chen, Lei Chen, and Yuan Wan

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**

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**

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, Xinchi; Ma, Yiming; Wang, Jin; Zhou, Libing
Huazhong University of Sciense 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**

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

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**

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 onTransfer-Learning and Physics-Informed Neural Networks**
Wu, Tao; Tian, Feng; Gong, Xi; Liu, Yangbowen
â€œSchoolof 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

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 institude 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 institude 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;

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; Li Hongwei; 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, Jiaxing

Nanjing University of Aeronautics and Astronautics

TEMS-1071 **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

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-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
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, CHUNGMING
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 Electrical Machines**
Wang, Yifei; Fang, Haiyang; Xiong, Feng; Li, Dawei
HuaZhong University of Science and Technology

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**
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 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 Fau lt-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