



The 52nd Annual Conference of the IEEE Industrial Electronics Society

Doha, Qatar | 18-21 October

CONFERENCE PROGRAM

www.iecon2026.org



 Doha, Qatar

 October 18-21, 2026

Organizers



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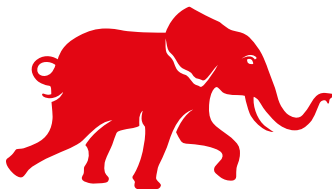
Exhibitors

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Message from Conference Chairs

Dear Colleagues and Friends,

On behalf of the IEEE Industrial Electronics Society (IES) and the Organizing Committee, we warmly welcome you to IECON 2026, the 52nd Annual Conference of the IEEE Industrial Electronics Society, held in Doha, Qatar, from 18 to 21 October 2026.

With nearly 2,000 paper submissions, this year's conference reflects the strong engagement of our global industrial electronics community. Bringing this program together despite the challenges along the way has been a collective achievement, and we are grateful to everyone who has contributed.

As the flagship annual conference of the IES, IECON brings together researchers, engineers, and industry leaders to share advances and address emerging challenges in industrial electronics. This year's program features keynote lectures, technical and special sessions, tutorials, industry activities, and panel discussions spanning power electronics, robotics and mechatronics, renewable energy, smart grids, cybersecurity, digital twins, and artificial intelligence for industrial applications.

We particularly welcome students and young professionals, whose ideas and participation are essential to the future of our field. We encourage all participants to engage in discussions, explore new perspectives, and build connections that extend beyond the conference.

Our sincere thanks go to the Technical Program Chairs, the entire Organizing Committee, special session organizers, and reviewers for their dedication. We also thank our authors, speakers, sponsors, and partners for their contributions and support.

Beyond the technical program, we hope you will enjoy Doha's cultural heritage and hospitality, and take part in the social activities that bring our community closer together.

We wish you a rewarding conference and a memorable stay in Qatar.

IECON 2026 General Chairs

General Co-Chairs of the 52nd IEEE IECON Conference



Prof. Sertac Bayhan
Hamad Bin Khalifa University, Qatar
Gazi University, Turkiye



Prof. Haitham Abu-Rub
Hamad Bin Khalifa University
Qatar



Prof. Mariusz Malinowski,
Warsaw University of Technology
Poland



Prof. Erchin Serpedin
Texas A&M University at Qatar
Qatar

Message from IECON 2026 Technical Program Chairs

Dear Participants,

Welcome to Doha, Qatar, and thank you for being an integral part of the 52nd Annual Conference of the Industrial Electronics Society – IECON 2026. Your participation in this event is key to fostering a dynamic exchange of ideas, strengthening collaborations, and advancing technical knowledge in the fields of power electronics and energy systems.

We are excited to present an outstanding program curated by our dedicated program committee. The conference will feature three distinguished keynote speakers, special and technical sessions, student and young professional tutorials, and industry workshops, bringing together experts from academia and industry to explore the latest developments in power electronics, renewable energy, and smart grids.

IECON 2026 has already demonstrated its significance through impressive statistics: we have received a strong number of paper submissions, with contributions from researchers across various countries, reflecting the global interest in the conference themes. A rigorous peer review process, conducted by our expert track chairs, session organizers, and reviewers worldwide, ensures the highest technical quality of the accepted papers. We extend our deepest appreciation to all those who contributed to shaping the technical program.

As Technical Program Co-chairs, it is our pleasure to welcome you to Doha. We sincerely hope that your participation in IECON 2026 is both rewarding and inspiring, filled with insightful discussions, meaningful collaborations, and memorable experiences.

Looking forward to an engaging and successful conference!

Organizing Committee

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Haitham Abu-Rub
Hamad Bin Khalifa University, Qatar

Mariusz Malinowski
Warsaw University of Technology, Poland

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Hamad Bin Khalifa University, Qatar

About Doha, Qatar

Doha, the capital of Qatar, is the host city for IECON 2026. The city is served by Hamad International Airport, which is consistently rated among the world's best-connected and highest-scoring airports for passenger experience.

Qatar is ranked among the safest countries in the world and is home to residents of more than 100 nationalities. Citizens of over 100 countries can enter Qatar without a visa, which simplifies travel arrangements for many international delegates.

Doha combines a fast-growing skyline and modern infrastructure with a long-standing cultural heritage. Visitors can explore sites such as the Museum of Islamic Art, the National Museum of Qatar, the historic Souq Waqif market, and the Katara Cultural Village. Qatar's National Vision 2030 sets out a long-term development strategy built around sustainable growth, economic diversification, and cultural preservation. The country hosted the FIFA World Cup in 2022 and continues to develop as a regional hub for business, research, and major international events.

Attractions to Visit

- Museum of Islamic Art (MIA)
- National Museum of Qatar (NMoQ)
- Souq Waqif
- Katara Cultural Village
- Doha Corniche
- The Pearl-Qatar
- Qetaifan Island North and Lusail Marina
- FIFA World Cup stadium tours
- Old Doha Port
- Shopping in Qatar
- Msheireb Downtown Doha
- Desert safari and Inland Sea (Khor Al Adaid)
- Banana Island
- Aspire Park
- Al Bidda Park

Conference Venue

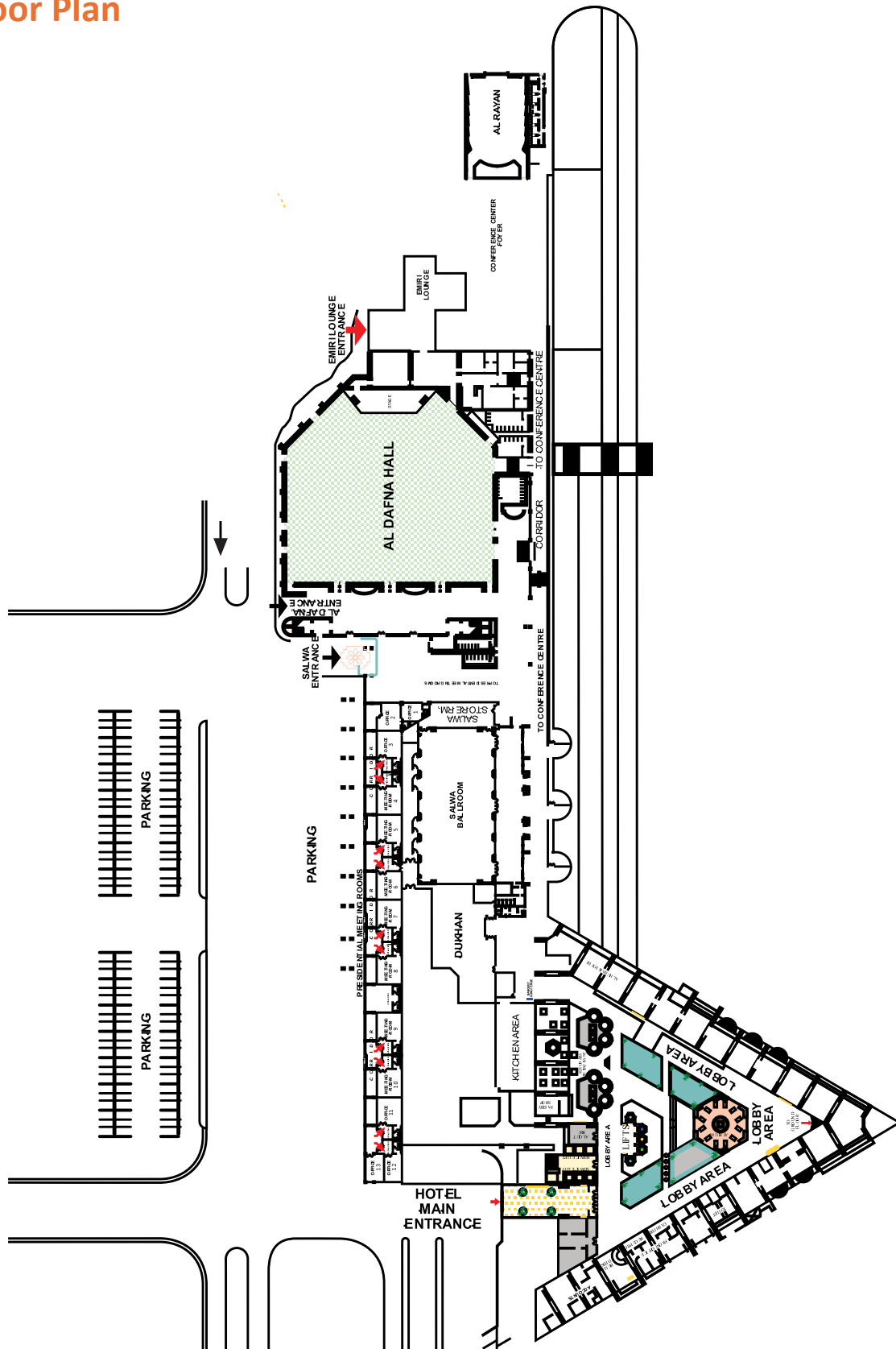
Sheraton Grand Doha Resort and Convention Hotel

IECON 2026 will take place at the Sheraton Grand Doha Resort and Convention Hotel, located in the West Bay district of Doha. The hotel operates seven restaurants and bars offering Middle Eastern, Italian, and Asian cuisine, together with themed buffets, beachfront dining, and a rooftop restaurant serving Arabic cuisine. It is situated approximately 1.9 kilometers from City Center Doha shopping mall and about 20 minutes by road from Hamad International Airport. Nearby cultural sites include the Museum of Islamic Art, the National Museum of Qatar, Souq Waqif, Doha Corniche, and The Pearl-Qatar.



Conference Venue Address:
Sheraton Grand Doha Resort and Convention Hotel
Al Corniche Street, Doha, Qatar
Telephone: +974 4485 4444

Floor Plan



The Pearl – Porto Arabia



Porto Arabia is the cosmopolitan heart of The Pearl Island, offering a Mediterranean-inspired waterfront lined with yachts, restaurants, cafés and boutiques. Its open-air boardwalk, elegant marina setting and lively atmosphere make it an excellent choice for a relaxed evening stroll, waterfront meal or scenic break from the conference program.

The Pearl – Qanat Quartier

Known as Qatar’s “Little Venice,” Qanat Quartier enchants visitors with turquoise canals, candy-coloured buildings, arched bridges and pedestrian-friendly squares. Its waterfront cafés, boutique shops and beachfront promenade create one of Doha’s most picturesque settings for walking, dining and photography.



The Pearl – Gewan Island

Situated beside The Pearl, Gewan Island is an emerging waterfront destination featuring a seaside promenade, green spaces, dining and retail venues, and the climate-controlled Crystal Walkway. Its modern setting and relaxed coastal character offer visitors a fresh perspective on Doha's expanding island lifestyle.



The Pearl – Medina Centrale

A vibrant town centre of The Pearl Island, combining Mediterranean-style plazas, landscaped spaces, shopping, dining and family entertainment. Visitors can explore its welcoming streets, enjoy a meal or spend time at attractions such as Megapolis Entertainment Center and the cinema complex.



Lusail Marina

Lusail Marina is the lively waterfront hub of Lusail, where contemporary towers, hospitality venues and public spaces meet scenic seaside boardwalks. The area is ideal for an evening walk, a waterfront meal or a closer look at the bold architecture and urban planning of Qatar's future city.



Lusail – Al Maha Island

Connected to the mainland by a causeway, Al Maha Island is a major leisure and entertainment destination overlooking Lusail's waterfront. It brings together high-end restaurants, beach clubs and seasonal attractions such as Lusail Winter Wonderland, making it a lively choice for dining and entertainment after conference sessions.



Conference Program

DAY 1 – Sunday, 18 October 2026			
08:00 – 18:00	Registration and Badge Collection(All day)		
09:30 – 12:30	Parallel Tutorials		
12:30 – 14:00	Lunch Break		
14:00 – 17:00	Parallel Tutorials	Workshop 1	
18:30 – 21:30	Welcome Reception		
DAY 2 – Monday, 19 October 2026			
08:00 – 18:00	Registration and Badge Collection(All day)		
08:00 – 09:30	Parallel Technical Sessions		
09:30 – 10:00	Coffee Break		
10:00 – 10:30	Opening Ceremony		
10:30 – 12:30	Keynote: Prof. Xiaohong Guan Keynote: Prof. Maryam Saeedifard		
12:30 – 14:00	Lunch Break		Women in IES Luncheon
14:00 – 15:30	Parallel Technical Sessions	Publication Committee	
15:30 – 16:00	Coffee Break		
16:00 – 17:30	Parallel Technical Sessions	IES Journals Information	IECON Newbies
17:30 – 19:00	Technical Committee Meeting		
19:00 – 20:00			
DAY 3 – Tuesday, 20 October 2026			
08:00 – 09:30	Parallel Technical Sessions		
09:30 – 10:30	Parallel Industrial Panel Sessions	Chapters Meeting	SYPA
10:30 – 11:00	Coffee Break		
11:00 – 12:30	Keynote: Prof. Huijun Gao Keynote: Prof. Biplab Sikdar	Chapters Meeting	SYPA
12:30 – 14:00	Lunch Break		
14:00 – 15:30	Keynote: Prof. Sudip Mazumder Keynote: Prof. Francisco Longatt	Chapters Meeting	SYPA
15:30 – 16:00	Coffee Break		
16:00 – 17:30	Parallel Technical Sessions	Chapters Meeting	SYPA
17:30 – 18:30	SYPA – IES Students and Young Professionals Awards Ceremony		
18:30 – 21:30	Gala Dinner		
DAY 4 – Wednesday, 21 October 2026			
08:00 – 09:30	Parallel Technical Sessions		
09:30 – 10:30	Parallel Industrial Panel Sessions		
10:30 – 11:00	Coffee Break		
11:00 – 12:00	Keynote: Prof. Samir Kouro		
12:30 – 14:00	Lunch Break		
14:00 – 15:00	Parallel Technical Sessions	IES Journals Training	Workshop 2
15:00 – 15:30			
15:30 – 16:00	Coffee Break		
16:00 – 17:30	Parallel Technical Sessions	Technical Committee Meeting	Workshop 3

Day 1 - October 18

IECON 2026

09:30		8 parallel sessions
09:30–12:30 Basir	Tutorial - 01 Instructors: Prof. Mohamed Benbouzid · Prof. Demba Diallo <i>Condition Monitoring and Prognosis in Power and Energy Systems: From Advanced Signal Processing and Hybrid AI to Digital Twins and LLM-Enabled Decision Support</i>	
09:30–12:30 Nakhil	Tutorial - 02 Instructors: Tobias Geyer <i>How model predictive control is revolutionizing the high-power drives industry</i>	
09:30–12:30 Room - PR4	Tutorial - 03 Instructors: Prof. Marco Rivera, Prof. José Rodríguez, Prof. Margarita Norambuena, Prof. Fernanda de Moraes Carnielutti, Prof. Zhenbin Zhang, Prof. Mokhtar Aly, Prof. Freddy Arturo Flores Bahamonde <i>Recent Advances, Challenges and Future Trends of Model Predictive Control Applied to Power Electronics</i>	
09:30–12:30 Room - PR5	Tutorial - 04 Instructors: Yazan Qiblawey · Agustí Egea-Àlvarez <i>System Identification of Grid-Forming and Grid-Following Converter Control Modes in IBR-Dominated Networks</i>	
09:30–12:30 Room - PR6	Tutorial - 05 Instructors: Prof. Francisco Gonzalez-Longatt <i>Industrial Intelligence for the Smart Grid: IEC 61850 Process Bus and Digital Substations in the Era of ICT and Artificial Intelligence</i>	
09:30–12:30 Room - PR7	Tutorial - 06 Instructors: Prof. Sheldon S. Williamson, Harshit Madaan, Dr. V. Subrahmanya Raghavendra Varaprasad Oruganti, Latha Anekal <i>Next-generation Intelligent and Cybersecure Modular EV Fast Charging Infrastructure with V2G/V2X Capabilities</i>	
09:30–12:30 Room - PR8	Tutorial - 07 Instructors: Prof. Xibo Yuan, Dr. Mohamed Diab, Dr. Wenzhi Zhou <i>Insulation and Bearing Reliability in Wide-Bandgap Motor Drives: Challenges, Mechanisms, and Mitigation</i>	
09:30–12:30 Room - PR9	Tutorial - 08 Instructors: Prof. Hui Zhang, Prof. Dan Zhang, Prof. Jicheng Chen, Prof. Dariusz Zieliński, Prof. Amjad Anvari-Moghaddam, Prof. Marek Jasinski <i>Multi-Scale Resilience Enhancement and Coordinated Orchestration of Next-Generation Networks for Energy and Coupled Traffic V2G Systems</i>	
10:00		
10:00–17:00 Dafna - Foyer	Exhibition for Sponsors	
12:30		
12:30–14:00 Venue TBA	Lunch Break	

Day 1 - October 18

IECON 2026

14:00		8 parallel sessions
14:00–17:00 Basir	Tutorial - 09 Instructors: Prof. Petar J. Grbović <i>Partial Power Processing Converters -A Myth or the Reality-</i>	
14:00–17:00 Nakhil	Tutorial - 10 Instructors: Tobias Geyer <i>Industrial medium-voltage converters and drives: from components to systems and applications</i>	
14:00–17:00 Room - PR4	Tutorial - 11 Instructors: Yi Sui, Mingqiao Wang, Shijie Yang <i>Optimization Design, Analysis and Control of High-Performance Special Permanent-Magnet Machine Systems</i>	
14:00–17:00 Room - PR5	Tutorial - 12 Instructors: Prof. Khaled Ahmed <i>Resilient Power Grid of the Future with High Voltage DC Transmission: Developments, Challenges and Opportunities</i>	
14:00–17:00 Room - PR6	Tutorial - 13 Instructors: Dr. Ahmed M. Massoud, Dr. Haitham Abu-Rub, Dr. S. M. Mueen, Dr. Sertac Bayhan, Dr. Abdulrahman Alassi <i>Sub-Synchronous Oscillations in Modern Power Systems: Mechanisms, Detection, and Mitigation for Large-Scale Renewable Energy Integration</i>	
14:00–17:00 Room - PR7	Tutorial - 14 Instructors: Dr. Saeed Arafat <i>Edge AI and Advanced Sensor Fusion (Radar, Camera, LiDAR, USS) for Next-Generation Autonomous Vehicles</i>	
14:00–17:00 Room - PR8	Tutorial - 15 Instructors: Kotb B. Tawfiq <i>Multiphase Electric Drives: Sustainable Rewinding, Inverter Topologies, and Control</i>	
14:00–17:00 Salwa 1	Workshop - 1 (PSCAD) Chairs: _____	
18:30		
18:30–21:30 Dafna - Banquet	Welcome Reception	

Day 2 - October 19

IECON 2026

08:00		27 parallel sessions
08:00–09:30 Basir	Onsite-TT-01: Renewable Energy and Energy Storage Systems	
	Chairs: _____	
	IECON26-000197	Resilience-Aware Techno-Economic Sizing of PV-BESS Systems in Renewable Energy Communities: A Swedish Case Study Ziad Amer Al-Taie, Annisa Dhini Septi Kinasih, Fredrik Wallin, Amir Vadiee, Alaa Krayem
	IECON26-000239	Cost-Aware Reinforcement Learning with Action Masking and Projection for Battery Energy Storage Dispatch under Suppressed-Spread Market Shifts Kuanlin Chen, Chen-Wei Kuo, Cheng-En Ou
	IECON26-000314	AIS-to-Energy Profiling of Tugboat Operations for Berth-Level Shore Power Planning Muhammad Sadiq, John Licari, Maurice Apap, Alexander Micallef
	IECON26-001790	Fault Signature Detection for IGBT Degradation Using Operational Data Analysis of Grid-Tie Central Inverters in Large Scale PV Power Plant Youssef Badry, Mahmoud Gaafar, Mohamed Orabi
	IECON26-000421	Prismatic Lithium-ion Battery Parameter Identification using Mean Variance Optimization and SoC Estimation via Extended Kalman Filter Jaiminkumar Patel, Mahmadasraf A. Mulla, Ashish Panchal
	IECON26-000468	Future GMPP Forecasting for AI-Assisted Predictive MPPT Under Dynamic Partial Shading Hassan Ali, Faizan Rashid, Sheikh Mohammed Rayyan Iqbal, Afaq Gul, Saeed Abdullah Dar
08:00–09:30 Nakhil	Onsite-TT-02: Transportation Electrification and Automotive Technologies	
	Chairs: _____	
	IECON26-000113	Electric Vehicle Battery Impedance Identification Using Pseudo Random Binary Sequence Signals Applied by Altered Electric Motor Drive Reference Farshid Naseri, Marcus Hoegh Bjerre, Kaiyuan Lu, Erik Schaltz
	IECON26-000128	Triple PV Fed Dual High Frequency Transformer based Isolated Solar Charger for VIPV Applications Sanam Agnihotri, Dipankar Debnath
	IECON26-000312	Thermomechanical Analysis of Impregnated Motors Slot Under Thermal Cycling testing Sara Ismaeel, Mehmet Gulec, Mohamed Ibrahim, Essam Rashad, Peter Sergeant
	IECON26-000538	Attention-Augmented Recurrent Network with Quantile Uncertainty for EV Charging Load Forecasting Abdul Hafeez, Nasser Al-Emadi, Atif Iqbal, Yushan Liu
	IECON26-000742	Optimizing Multi-Class EV Charger Placement with Greedy Heuristics Masa Lazic, Ines Pavlovic, Tatjana Davidovic, Dragan Urosevic, Nurettin Sezer, Raka Jovanovic
	IECON26-000902	Behavior-Aware EV Charging Station Selection in a Game-Theoretic Market with Heterogeneous Charging Infrastructure Kaniz Suburna, Mousa Marzband, Sobhan Dorahaki, Masoumeh Javadi, Atif Iqbal, S.M. Mueen
08:00–09:30 Room - PR4	Onsite-TT-03: Control Systems and Applications	
	Chairs: _____	
	IECON26-000234	Adaptive PID Control for Melt-Pool Area Regulation in Laser Powder Bed Fusion: Stability Analysis and Simulation Study Taha Al-Saadi, Muhammad Shafiq
		<i>continues on next page ►</i>

Day 2 - October 19

IECON 2026

08:00–09:30 Room - PR4 <i>cont'd</i>	<i>Onsite-TT-03: Control Systems and Applications · continued</i> IECON26-000250 Multi-Directional Random Conic Pursuit with Integration into Adaptive Dynamic Programming Lanqi Ma, Simone Baldi, Di Liu, Chaojie Li, Wenwu Yu, Juan J. Rodriguez-Andina IECON26-001303 An Expert-Informed Labeling Framework for Supervised Power Quality Anomaly Detection on Real Building Data Ameen Zarif, Rabab Benotsmane, Morcos Metry IECON26-001382 Thermal-Headroom-Aware Adaptive Fast Charging with Dynamic C-Rate Modulation for EV Li-ion Batteries Amitava Dutta, Ritesh Keshri, Chinmayananda A IECON26-000872 Eco-driving of autonomous electric vehicles combining dynamic programming and T-S fuzzy approach Ahmed Bentaleb, Ahmed El Hajjaji IECON26-000917 Data-Driven Bilinear Koopman Model Predictive Control for End-Effector Trajectory Tracking of a 4-DOF Robotic Arm Rima Almahyo, Toqa Alremawi, Mohamed W. Mehrez Said, Mohamed Mabrok, Nader Meskin
08:00–09:30 Room - PR5	Onsite-TT-04: Mechatronics and Robotics Chairs: _____ IECON26-000257 A Digital Twin Framework for Vision-Based Robotic Disassembly of End-of-Life Electric Motors Suhad Aleassa, Mien Van, Zhengui Xue, Minh-Nhat Nguyen, Seán Mcloone IECON26-000807 IMU-Assisted Kalman-Filter-Based disturbance estimation for Bilateral Control Under Low-Resolution Encoder Conditions Ryota Ito, Takashi Ohhira, Hideki Hashimoto IECON26-000818 Speed-Dependent Motion-Blur Compensation for Road Surface Projection from Moving Platforms Tomohiko Hayakawa, Yuka Hiruma, Yushi Moko, Ayako Mino, Masatoshi Ishikawa IECON26-000989 Design, Validation, and Flight Testing of a Custom Hexacopter UAV for a Precision Agricultural Application in Pollinating Date Palms Alya Al-Adbah, Mohamed Sultan Mohamed Ali, Asan G. A. Muthalif IECON26-001271 Design and Analysis of a Compound-Propelled Underwater Robot for Future Desilting Applications Weiyang Shang, Wei Zheng, Lei He IECON26-001520 Predictive Safety Monitoring for Camera-Guided Micro Aerial Vehicle Obstacle Avoidance Hani Beirami, Marco Roveri
08:00–09:30 Room - PR6	Onsite-TT-05: AI Applications in Control, Mechatronics, and Robotics Chairs: _____ IECON26-000176 Large Language Models Integration with Multi-Mobile Robot Systems: A Review of Architectures, Applications, and Open Challenges Amr Elfeky, Felix Gehlhoff IECON26-000207 Neural A* Path Planning with Data-Driven Learning and Spatial Attention Decoupling Shiwen Chen, Junsuo Qu, Dan Yang, Heng Yao, Jiahao Zhang, Zhuangzhuang Jin IECON26-001219 Large Language Models as Autonomous Controllers for Multivariable Industrial Processes Vidyashree Rayar, Mahdi Taheri, Christian Herglotz, Philippe Thomas, Sebastian Moeller, Michael Huebner <i>continues on next page ►</i>

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08:00–09:30 Room - PR6 <i>cont'd</i>	<i>Onsite-TT-05: AI Applications in Control, Mechatronics, and Robotics · continued</i> IECON26-000735 An Artificial Intelligence-Powered Bionic Hand Using Electromyography Signals Ali Alramadhan, Sami Elferik IECON26-001814 Simultaneous State and Fault Estimation in Wind Turbines Using Unknown Input Observer Abdulwahid Saif, Sami Elferik IECON26-000497 Terrain-Aware and Weight-Adaptive Path Optimization for Seedball-Dispensing UAVs Leya Sharrouf, Rashed Abou Ali, Dany Abou Jaoude
08:00–09:30 Room - PR7	Onsite-TT-06: Instrumentation, Sensors, Actuators, and Micro-Nano Technology Chairs: _____ IECON26-000005 A Natural-neighbor-interpolant-based Pattern Decoding Method for Active Stereo Vision Zhenzhou Wang IECON26-000269 GA-Optimized 2D MIMO Array Synthesis for 4D Imaging Radars Jingqi Ma, Wei Wang, Fuwang Dong, Wensheng Guo, Jingchen Chang, Jianlin Wei IECON26-000534 Numerical Investigation of an Integrated Microchannel Thermoelectric Cooler with Direct Inter-Leg Liquid Cooling Dihan Amaratunga, Dumith Jayathilaka, Ranjith Amarasinghe IECON26-000560 Data-Driven Approach to Evaluating Passenger Ride Comfort in the Lusail Light Rail Transit System Salem Abu Azab, Khalil Araj, Nader Meskin, John-John Cabibihan IECON26-001261 Design, Implementation, and Experimental Validation of a Low-Cost ESP32-Based Power Quality Analyzer Zeyad Elsayed, Hossameldin Hafny, Ahmed Awad IECON26-001312 Robustness of Distributed Source Imaging in OPM-Based Magnetocardiography Under Sensor Calibration Errors Min Zhang, Min Xiang
08:00–09:30 Room - PR8	Onsite-TT-07: Cyber-Physical Systems and Internet of Things in Industry Chairs: _____ IECON26-001336 Multi-Class Event Classification in Grid-Forming Inverter-Based Power Systems Using a Time-Series Foundation Model Uzair Asif, Amirhosein Gohari Nazari, Harsha Vardhan Reddy Modugu, Mohammad Shadmand IECON26-000274 A Standards-Aligned Assurance Interface for Safety--Cybersecurity Evidence Yasmine Benghenane, Ahmed Lounis, Mohamed Sallak IECON26-000659 Temporal Property-driven Design Space Exploration with Reinforcement Learning for Cyber-Physical Systems Tagir Fabarisov, Maxime Cordy IECON26-001122 Risk-Aware Assessment of Battery SOC Depletion in PV-Dominated Islanded Microgrids Sadiah Ahmed Moon, Reza Behnam, Harsha Vardhan Reddy Modugu, Mohammad Shadmand IECON26-001186 From Zero-Shot to Efficient Fine-Tuning: LLM-Based Early Warning of Video Injection in RTP Surveillance Streams Mudassir Malik, Abdullatif Albazeer, Mohamed Abdallah <i>continues on next page ►</i>

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08:00–09:30 Room - PR8 cont'd	<i>Onsite-TT-07: Cyber-Physical Systems and Internet of Things in Industry · continued</i> IECON26-001761 iPAM: Intelligent Post-Attack Impact Mitigation and Recommendation for EV Charging Networks Md Rakibul Ahasan, Sofia Tenghoff, Erchin Serpedin, Abdulrahman Takiddin
08:00–09:30 Room - PR9	Onsite-TT-08: Signal & Image Processing Methodologies Chairs: _____ IECON26-000255 Distillation-Based Real-Time UAV Detection and Tracking Using Lighting-Robust Thermal Imaging for Intrusion Prevention Applications Abdullahi Sani Shuaibu, Ingrid Huso, Ali Al-Zawqari, Gabriele Oligeri, Ali Safa IECON26-000287 Automated All-Sky Camera Image Quality Assessment for Solar Forecasting Preprocessing: A Confidence-Based Transfer Learning Approach Aishwaryaa Kannan, Nassma Mohandes, Dunia Bachour, Daniel Perez-Astudillo IECON26-000347 An End-to-End Mobile Application-Based Framework for Intelligent E-Waste Management Md. Mosarrof Hossen, Tala Jano, Aya Nabil Sayed, Faycal Bensaali, Farid Touati, Ridha Hamila IECON26-000906 MirrorDistill: Illumination-Aware Latent Distillation for Efficient Low-Light Restoration Farida Mohsen, Tala Zaim, Nurul Izni Rusli, Ali Al-Zawqari, Ali Safa, Samir Belhaouari IECON26-001160 Comparative Study of YOLOv10, YOLOv11, YOLOv12, and YOLOv26 for Real-Time Elderly Fall Detection Aanchal Verma, R.k. Saket, Ansh Raj IECON26-000415 Ocean Wave Field Reconstruction from Sparse Stereo via Spectral-Prior Ensemble Kalman Filtering Feng Wang, Chengtao Cai, Qidan Zhu
08:00–09:30 Salwa 1	Onsite-TT-09: Power Systems and Smart Grid Chairs: _____ IECON26-001385 Global Sensitivity Analysis of Sub-/Super-Synchronous Oscillations in Grid-Following PV Inverters Sara Hamed, Hussein Alnuweiri, Muhammad F. Umar, Sertac Bayhan, Haitham Abu-Rub IECON26-001886 Weibull-Constrained PINN for XLPE Power Cable Aging Prediction Alamera Nouran Alquennah, Mohammad AlShaikh Saleh, Shady S. Refaat, Marek Olesz, Ali Ghrayeb, Jarolaw Guzinski IECON26-001215 Large Language Models as Strategic Bidding Agents in P2P Energy Trading Markets Ismail Lotfi, Ali Ghrayeb, Haitham Abu-Rub IECON26-000368 A Rolling Horizon-Based Optimization Approach for Power Systems Under Forecast Uncertainty Hussain Ahmed, Ristomatti Pöri, Matias Makkonen IECON26-000408 Multi-Objective Operation Planning of an Active Distribution Network for EVCS Stress Mitigation Using Sine Cosine Algorithm Mohammad Anas, Imtiaz Ashraf, Fareed Ahmad IECON26-000863 SNILM: A Scalable Synthetic Benchmark Dataset for Non-Intrusive Load Monitoring with Demographic Diversity Mohammadreza Abbaspour, Omid Mofid, Mahdi Khodayar, Nader Meskin, Saleh Mobayen

08:00–09:30 Salwa 2	Onsite-TT-10: Power Electronics Converters Chairs: _____ IECON26-000263 LLC Transformer Design Based on Unbalanced-flux Magnetics Approach Sobhi Barg, Mhd Anas Al Ebrahim, Kent Bertilsson IECON26-000268 Design and Validation of a Full-GaN Inverter for 800V Automotive Applications Saeid Aghaei Hashjin, Alexandre Battiston, Najla Haje Obeid IECON26-000395 Constant Switching Frequency of Zero-Voltage Switching Paralleled Inverters for AC Motor Drive Xiaoming Fu, Zewei Shen, Dehong Zhou, Xin Liu, Jianxiao Zou, Shicai Fan IECON26-000047 Explainable AI Analysis for the Influence of Toroidal Core Geometry on High-Frequency Six-Port SST Efficiency Alamera Nouran Alquannah, Sertac Bayhan, Ali Ghrayeb, Haitham Abu-Rub, Sunil Khatri IECON26-001782 GSETS: Gaussian Smoothed Efficient Transition Sampling for Data-Driven Digital Twin Models Ahmad Al-Khateeb, Naheel Kamal, Eman Hammad, Sertac Bayhan, Haitham Abu-Rub IECON26-001135 Single Phase Dual Source Common Ground Grid-Connected Inverter With Model Predictive Controller Anup Marahatta, Sandipan Patra, Shafi Khadem
08:00–09:30 Salwa 3	Onsite-TT-11: Electric Machines and Industrial Drives Chairs: _____ IECON26-001867 Data-Driven Vehicle-to-Grid Smart Charging for Low-Voltage Networks Abdullah A Jabbar, Usman Zafar, Muneera Al-Qahtani, Anas Karaki IECON26-000106 Harmonic Suppression for PMSM Based on an Improved Model-Free Predictive Current Control Method Guanjie Li, Guangsen Wang, Zhentian Liu, Fengrui Cui, Zhaoran Lei IECON26-000188 Deviation-Based Health Index for Bearing Condition Monitoring under Blind Operating Conditions Muhammad Ahmad, Hasnain Ahmad, Md Shafiullah, Muhammad Majid Gulzar IECON26-000323 Different Approaches to Optimal Flux Selection for Wide-Speed-Range SynRM Drives Shahal Ibn Islam Joy, Lelisa Wogi, Marcin Morawiec, Deepak Vyas, Jan Barta, Tausifur Rahman IECON26-000341 Dynamic MTPA-Based Energy-Optimal Trajectory Planning for IPMSM Servo Systems Kuan Wang, Yingguang Liu, Le Sun, Longmiao Chen IECON26-000345 A Model Free Predictive Control for Electric Motor Emulators using UltraLocal Model Yupeng Liu, Ma Runlin, Dong Xu, Han He, Marco Rivera, Patrick Wheeler
08:00–09:30 Online Room-1 ONLINE	Online-TT-12: Power Systems and Smart Grid Chairs: _____ IECON26-000655 Evolution of Teleprotection Communications: From Power Line Carrier to Hybrid Packet-Based Architectures Vaibhav Bhatnagar, Pierre Guillet, Alexandre Fraignac IECON26-000667 Conservative Upper Bound on Shunt Resistance for Stabilizing 2t Oscillations in Bilinear-Discretized V-ITM Power-Hardware-in-the-Loop Arun Sharma, Sarasij Das <i>continues on next page ►</i>

08:00–09:30 Online Room-1 ONLINE <i>cont'd</i>	<i>Online-TT-12: Power Systems and Smart Grid · continued</i> IECON26-000718 Dynamic Multi-Objective Metaheuristic Optimization of Energy Communities Pablo Horrillo-Quintero, Pablo Garcia-Triviño, João Catalão, Luis M. Fernandez-Ramirez IECON26-000860 UIPDO-Based Resilient Secondary Frequency Control for Islanded Microgrids Xicheng Li, Jianqiang Hu IECON26-000882 Data-Driven Distributed Privacy-preserving Resilience Control for DC Microgrids Hao Yang, Chao Deng IECON26-000914 Diagnostic Sensitivity of EMT Test Cases for TSO-Oriented Validation of Offshore VSC-HVDC Systems Sergei Shcherbakov, Soledad Bernal-Perez
08:00–09:30 Online Room-10 ONLINE	Online-SS-01: Emerging AI and Quantum Technologies for Secure and Resilient Future Power Systems Chairs: _____ IECON26-000797 Assessing Large Language Models for Critical Node Identification in Power Grids Brett Billingsley, Amr Elshazly, Jesse Roberts, Rachad Atat, Muhammad Ismail IECON26-001165 Evaluating Quantum and Classical Estimation Techniques for Microgrid Frequency Disturbance Detection in Battery Energy Storage Systems Uzair Khan, Md Ebrahim Hossain, Saikat Das, Arif Sarwat IECON26-001396 Geometry of Quantum-Encoded Renewable Energy Time-Series Data Avinash Jeewani, Anwer Shees, Jawad Mohammed, Arif Sarwat IECON26-000252 Federated Multi-Agent Reinforcement Learning-Based Electric Vehicle Scheduling for Transformer Health Management Wenjun He, Wangli He IECON26-000244 Knowledge-Base-Enhanced Domain-Adaptive Reinforcement Learning for Microgrid Scheduling under Extreme Weather Na Wang, Jingang Lai IECON26-000540 An Integrated Splitting-Pruning-Quantization Method for Edge-Collaborative Forecasting Model Deployment in Microgrid Clusters Leijiao Ge, Yue Zhuo, Jierui Yang, Zhouyue Meng, Yuyang Wu, Rubo Lu
08:00–09:30 Online Room-11 ONLINE	Online-SS-02: Next-Gen Electric Vehicles: Hybrid Energy Storage, Power Electronics and Grid-Interactive Charging Chairs: _____ IECON26-000122 EV Off-Board Charger: A Flexible and Dynamic Operation to Control Power Quality in Smart Grids Vitor Monteiro, Frede Blaabjerg, Joao Afonso IECON26-000125 Real-Time Multi-Objective Energy Management Optimization for Plug-in Fuel Cell Electric Vehicles via Genetic Algorithm and Quadratic Programming Ahmad Eid El Iali, Moustapha Doumiati, Dany Abou Jaoude, Mohamed Machmoum IECON26-000272 Reconstruction and Prediction of Electric Vehicle Charging Characteristics Using Real-World Office Parking Data Dhaouadi Fedi, Youssef Kraiem, Moustapha Doumiati, Saber Krim, Mohamed Faouzi Mimouni, Mohamed Machmoum <i>continues on next page ►</i>

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08:00–09:30 Online Room-11 ONLINE <i>cont'd</i>	<i>Online-SS-02: Next-Gen Electric Vehicles: Hybrid Energy Storage, Power Electronics and Grid-Interactive Charging · continued</i> IECON26-000732 A Novel Soft-Switching Resonant ZVS DC-DC Step-Up Converter for Ultra-Low-Power Applications Najmehossadat Nourieh, Syed Mudassir Hussain, Oluyomi Simpson, Yichuang Sun IECON26-000977 Enhanced Battery Management with Vehicle-Pile Data Fusion: A Perspective Chao Sun, Xin Sui, Hui Xing, Shuang Zhao, Shan He IECON26-001250 Remaining Driving Range Extension in Electric Vehicles: A Core-Temperature-Guided Battery Thermal Management Method Cong-Sheng Huang, Hao-Han Lee
08:00–09:30 Online Room-12 ONLINE	Online-SS-03: AI-2.0–Driven Strategies for Condition Monitoring and Prognosis in Power and Energy Systems: From Digital Twins and Cybersecure Predictive Maintenance to Emerging Foundation and LLM-based Models Chairs: _____ IECON26-000098 A Linear Dynamic Operating Envelope Allocation for Network-Aware Electric Vehicle Charging Station Operation in Distribution Systems Adel Heidari Akhijahani, Irfan Khan IECON26-000891 A Digital Twin Framework for Historical Assessment of Solar-Rainwater-Driven Green Hydrogen Production in India Mrinmoy Das, Ramesh Kumar, Gianluca Gatto, Suman Jana, Amit Kumar IECON26-000069 Interpretable State of Health Prognosis for Lithium-Ion Batteries via a Kolmogorov-Arnold Physics-Informed Neural Network Senfeng Cen, Chenglin Fan, Taihoon Kim, Haoxiang Zhang, Qiubo Zhong IECON26-000320 Physics-Informed Machine Learning for Motor Bearing Health Prognosis Yuichi Kajiura, Tomoyuki Iwawaki, Kai Yamagata, Yebin Wang, Dehong Liu IECON26-000378 Electrical Quantity Awareness for Data-Efficient Photovoltaic Fault Diagnosis Under Data Scarcity Weiqing Lu, Claude Delpha, Demba Diallo, Anne Migan-Dubois, Yujie Xu, Iman Makrouf, Tianzhen Wang IECON26-000426 Diffusion-VAE: A SCADA-Conditioned Latent Diffusion Framework for Unsupervised Wind Turbine Anomaly Detection Senfeng Cen, Chenglin Fan, Taihoon Kim
08:00–09:30 Online Room-13 ONLINE	Online-SS-04: AI-Driven Analysis, Modelling, and Control of Unmanned Engineering Systems Chairs: _____ IECON26-000928 GKAG-Former: A Gated Keypoint-Aware Axial Geometry Transformer for 3D Shape Retrieval Zhiming Zheng, Qiansong Cheng, Nannan Liu, Pinhe Wang, Xinkai Chen IECON26-000108 Pixel-Level Confidence Estimation for Single-Capture Joint Depth and Hyperspectral Reconstruction Xinbo Meng, Yuqi Li, Zhengkai Li, Junxi Lai IECON26-000946 Effect of Multi-Parameters of Surface Mount Assembly on Defects of Solder Joints Wan Tai, Taohan Wang, Hanwen Feng, Yuqing Ran, Jiayun Feng IECON26-001093 A Physics-Informed Neural Network Method for Online Pick-Up Error Compensation of the Surface Mounting Process Xinbo Meng, Zhengkai Li, Hao Sun, Xinghu Yu, Zhihong Zhao <i>continues on next page ►</i>

08:00–09:30 Online Room-13 ONLINE cont'd	<i>Online-SS-04: AI-Driven Analysis, Modelling, and Control of Unmanned Engineering Systems · continued</i> IECON26-000285 Reactive Power Compensation Optimization of New Energy Systems Based on Improved Grey Wolf Optimizer Yongwei Zhou, Dan Zhang, Yilian Zhang IECON26-000403 Precise attitude-tracking controller for rigid-body spacecraft with predefined time convergence Umair Javaid, Michael Basin, Salman Ijaz
08:00–09:30 Online Room-14 ONLINE	Online-SS-05: ADVANCED CONTROL AND SIGNAL PROCESSING IN MECHATRONICS Chairs: _____ IECON26-000868 Machine-Learning-Assisted Microfluidic Contact Lenses with Capillary Burst Valves for Sequential Tear-State Analysis Yuhan Zheng, Chen Liu, Weiwei Qian, Muzi Lin, Nai Yeen Gavin Lai, Xu Sun, Sheng Zhang IECON26-000901 Design and Control of a Polar-Coordinate Ceramic 3D Printing Control System for Digital Preservation of Yueyao Celadon Craftsmanship Mingming Xu, Jingyu Ding, Zing Siang Lee IECON26-001227 Adaptive and Fixed-Gain Sliding Mode Control for Robust Stabilization of a Two-Wheel Inverted Pendulum Part I: Controller Design and Stability Analysis Egisona Qosja, Paolo Mercorelli IECON26-001228 Adaptive and Fixed-Gain Sliding Mode Control for Robust Stabilization of a Two-Wheel Inverted Pendulum Part II: Simulation-Based Validation and Performance Evaluation Egisona Qosja, Paolo Mercorelli IECON26-001754 Physics-Informed Neural Network for Stator Magnetic Field Modeling in Halbach-PMSMs Abdelrahman Abdelmagid, Sajjad Mohammadi IECON26-000520 Optimal Consensus Control of Discrete-Time Multiagent Systems With Input Saturation Jinchao Gu, Changda Zhang
08:00–09:30 Online Room-15 ONLINE	Online-TT-13: Control Systems and Applications Chairs: _____ IECON26-001109 Observer-Based Switching Distributed MPC for Heterogeneous UAVs UGVs Systems Under Packet Loss, Delay, and Jitter Yujie Luo, Yong Chen, Zhuohua Duan IECON26-001804 Planned-Path Sharing for Cooperative Behavior Selection in Multi-Vehicle Autonomous Parking Hyejun Hong, Yeong Gwang Choi, Jae Jeon IECON26-000097 Stabilization of Highly Nonlinear Stochastic Time-Delay Systems Affected by Deception Attacks via Protocol-Based Control Fengqiu Liu, Mingxin Kang, Hongxu Zhang, Jianmin Wang IECON26-000938 Bio-plausible Spiking Observer-based Control with Spike Frequency Adaptation Based on Emulation Theory Hongfu Xu, Xiaoyu Guo, Liutao Zhou, Shengbo Wang, Jiankai Yin, Shuo Gao IECON26-000104 Model-Based Design for Industrial PLC Development: A Simulink-to-TwinCAT Workflow for Real-Time Systems Rohini Doddabandar Ramegowda IECON26-000145 Advanced Nonlinear Controllers for Torque Management in Electric Vehicle Powertrains Muhammad Zubair, Daniela Iacoviello, Adeel Usmani

08:00–09:30 Online Room-16 ONLINE	Online-TT-14: Cyber-Physical Systems and Internet of Things in Industry Chairs: _____ IECON26-000198 Privacy-Preserving ToA/AoA Fusion Localization via CRT Compression and Dual-Masking Secure Aggregation Yuhan Cai, Shengming Chang, Yangwen Luo IECON26-000219 Towards LLM-Assisted IEC 61499 Function Block Engineering Jorge Vieira, Rui Pinto, Eliseu Pereira, Gil Gonçalves IECON26-000613 SENTRIX: A Flow-Based Intrusion Detection Cascade With Operator-Driven False-Positive Reduction Sohamm Shheth, Nilakshi Jain, Vineet Kumar IECON26-000714 Vulnerability of Multi-Sensor Stochastic Event-Triggered State Estimation under Stealthy Hybrid FDI Attacks Puchen Xu, Li Jin IECON26-000870 Interface-Level Replay Recovery for Supervisory Robotic Telemetry Under Transient Disconnection Fabio Chagas, Vedran Simic IECON26-000211 HSEP: Hash-Enhanced Secret Sharing with Lightweight ECC for Full-Path Privacy in Collaborative Indoor Localization Shengming Chang, Haojun Lin, Dongdong Lv, Davy Tsz Kit Ng, He Xu
08:00–09:30 Online Room-2 ONLINE	Online-SS-06: Advanced Modeling and Control of Grid-Connected Converters for Distributed Generation and Power Quality Chairs: _____ IECON26-000738 Adaptive Frequency Support for a PV-BESS-VSG Considering Battery Health and Operating Stress Mingjun Li, Kaushik Rajashekara, Shivam Saini IECON26-000848 Harmonic Analysis of Neutral Point Clamped Converter with Carrier-Based Modulation Schemes Aravinthan K, Naga Brahmendra Yadav Gorla IECON26-001168 Augmented Fault Ride-Through Capability of dVOC-Based Grid-Forming Converters Sima Azizi Aghdam, Mohammed Agamy IECON26-001350 Inrush Current Suppression Control Strategy Based on Positive and Negative Sequence Virtual Oscillator for Unbalanced Grid Voltage Sag Min Huang, Maiyu Liu, Yecheng Lin, Lixun Zhu, Zhilei Yao, Weimin Wu IECON26-000754 Bandwidth Extension of Single-Phase PFC Boost Converters for EV Chargers using Load Estimation based Second-Harmonic Ripple Decoupling Mohammed Benmiloud, Khaled Ameer, Mohamed Bougrine, Mohamed Trabelsi IECON26-000037 Robust Power-Domain Control of Grid-Connected Converters Using Algebraic Modeling and Jacobian-Based Regulation Mohamed Amine Fnaiech, Mohamed Trabelsi, Hani Vahedi
08:00–09:30 Online Room-3 ONLINE	Online-SS-07: Intelligent Modelling and Fault Diagnosis Techniques for Safety-critical Industrial Systems Chairs: _____ IECON26-000048 Graph Matching-Driven Intelligent Modeling and Placement Defect Detection for SMT Zichao Geng, Zhibo Shan, Jingfan Hang IECON26-000049 Lightweight Industrial Image Super-Resolution via Frequency-Decoupled Global-Local Modeling Hong Yang, Tingxin Li, Ruohong Xu, Zhenghan Ding, Zhixiang Jia, Jingfan Hang <i>continues on next page ►</i>

08:00–09:30 Online Room-3 ONLINE <i>cont'd</i>	<i>Online-SS-07: Intelligent Modelling and Fault Diagnosis Techniques for Safety-critical Industrial Systems · continued</i> IECON26-000053 Constrained Multi-Objective Path Planning for Autonomous Vehicles in Hybrid Threat Environments Congyi Bi, Jingtao Wang, Lei Yang, Yuxuan Fan, Zhengsheng Chen, Yahui Zhang, Haohan Zhao, Tenglong Huang IECON26-000066 Temporal Consistency Verification of Smart Contracts Prior to Deployment in Safety-Critical Industrial Grade Intelligent Unmanned Systems Chaoze Lu, Jianchao Zhou, Zhipeng Sun IECON26-000116 From Anomaly Maps to Inspection Reports: Rule-Augmented Explainable Industrial Visual Inspection Safayat Bin Hakim, Kanchon Gharami, Houbing Song IECON26-000348 Distributed Safe Target-Formation Control for Multi-Agent Vehicles With CBF-QP Filtering and Rotational Deadlock Mitigation Hang Mo, Huiyan Zhang
08:00–09:30 Online Room-4 ONLINE	Online-SS-08: Rare-Earth Magnet Free Machines for a Sustainable Future Chairs: _____ IECON26-000431 Failure-Mechanism Transferability of Cumulative-Damage Features for Health State Estimation of SiC Power Modules Mattia Scarpa, Evgeny Kusmenko, Francesco Toso, Ruggero Carli, Mattia Bruschetta, Simon Achatz IECON26-000760 A Symmetrical Six-Phase Inverter Using Fictional Neutral Points for Extending the DC-Bus Utilisation of Three-Phase Induction Motor Drives Sabir V E, Vivek R S, Abhiram A, Prajeesh P Prabhakaran, Vinod V, Anurenjan Purushothaman IECON26-000762 Linear Modulation Range Extension of a Two-Phase Induction Motor Using Switched Neutral Points and a Symmetrical Four-Phase Inverter Sabir V E, Aswin V P, Vivek R S, Lalgy Gopi, Vinod V, Anurenjan Purushothaman IECON26-000955 A New Voltage Sharing Strategy for a Twelve Leg Open-End Winding Nine-Phase Induction Motor Drive Tukaram Alias Saurabh Dhavjekar, Siva Kumar Keerthipati IECON26-001094 Stator Fault Diagnosis in an 8/6 Switched Reluctance Motor: A Classifier Sensing Factorial Study under Realistic Inter-Turn and Inter-Phase Fault Models Franklin Sánchez, Maria Isabel Milanes, Enrique Romero-Cadaval IECON26-000703 Interlinking Hybrid Distribution Transformer: A Unified Resonant State-feedback Control Strategy Dave Figueroa, Alvaro Carreno, Mariusz Malinowski
08:00–09:30 Online Room-5 ONLINE	Online-TT-15: Smart Building Technologies Chairs: _____ IECON26-000203 Constrained PMV-Driven Two-Zone HVAC Control Using Centralized PPO Under a Shared Cooling Budget Srinivas Vulli, Ming Liu, Zhenyu Huang IECON26-000383 Effect of Buffer Tank Size on Thermal Comfort and Energy Consumption in Residential Heat Pump Systems with and without Occupancy: a Simulation-Based Analysis Mir Farooq Ali, Francesco Perticaroli, Lorenzo Marra, Crescenzo Pepe, Silvia Maria Zanolì IECON26-000545 Distributed MPC for Energy-Optimal Thermal Control in Buildings with Hybrid Heating Vahid Ehteshami Bojnurdi, Mohammadhassan Gholami Derouei, Valeriy Vyatkin, Udayanto Dwi Atmojo <i>continues on next page ►</i>

08:00–09:30 Online Room-5 ONLINE <i>cont'd</i>	<i>Online-TT-15: Smart Building Technologies · continued</i> IECON26-000616 Secure Management and Self-Commissioning of Internet of Things Gateways in Smart Cities Beatriz Cristina De Faria, Carlos Alcantara, Luís Lopes, Flávia Pires, Jose Barbosa, Tiago Silva, Tiago Pedrosa, Natássya Silva IECON26-001011 IoT-based System for Volume and Activity Monitoring for Second-Hand Collection Containers Mohamed Yassine Mansouri, Margarida Maia, Soraia Taipa, Flávia Pires, Jose Barbosa IECON26-001581 A Unified Home Energy Management System Integrating Smart Metering, Multimodal User Feedback, and On-Device LLM Reasoning Mohammadreza Kakhodaie, Hossein Mokhtari, Sepehr Hashemian, Sepideh Rahimi, Mahdi Zarei
08:00–09:30 Online Room-6 ONLINE	Online-TT-16: Control Systems and Applications Chairs: _____ IECON26-000763 Unknown Target Number Cooperative Search with Multiple Heterogeneous UUVs through Role Specialization and Belief Confirmation Mapping Yang Shuxin, Zhou Jiajia, Wu Yang IECON26-000369 IIoT-Enabled LARX-MPC Based PVC Prediction for Aerospace Gravity-Fed SPSFT Systems Sathish Kumar G, Rajeev Kumar, G.s. Chandrasekhar IECON26-000833 Data-Driven Control using CDDS for Galvanometric Laser Scanner in SLS 3D Printing of Motor Cores Zaki Aslam, Yasutaka Fujimoto IECON26-000889 Small-Signal Stability Analysis and Design Guidelines for Green Hydrogen DC Energy Hubs Shadi Khodakaramzadeh, Qobad Shafiee, Zian Qin, Pavol Bauer IECON26-000900 Covariance-Aware Nonlinear Model Predictive Control for AUV Trajectory Tracking Under Sensing Uncertainty Chengsong Yu, Junjie Lu, Shengyuan Huang, Peng Huang, Hao Liu, Zixin Huang IECON26-000385 Risk-Based Assessment of Recreational Seawater Quality in the Gulf of Vlora Using High-Frequency Autonomous Monitoring Medriti Mustafaraj, Houxiang Zhang, Øivind Kåre Kjerstad
08:00–09:30 Online Room-7 ONLINE	Online-SS-09: Power-Electronic-Enabled Control and Market-Oriented Operation of Smart Microgrids: Optimization, Demand Response, and Peer-to-Peer Energy Trading Chairs: _____ IECON26-001481 A Fast EV Charging Station Based on an ISOI DC-DC Converter Milad Rasoulkhathir, Javad Hassani, Qiang Wei IECON26-001540 Current-Constrained Continuous-Control-Set Model Predictive Control for dVOC-Based Grid-Forming Inverters in Weak Grids Safia Bashir, Surour Alaraifi, Mohamed El-Moursi, Bashar Zahawi IECON26-000170 Optimized Sizing and Energy Management of PV Wind CHP Resources in an IEEE 14-Bus Multi-Energy Microgrid Hadi Mojtaba, Elhoussin Elbouchikhi, Lahoucine Id-Khajine, Ayoub Chrif, Abdelhakim Saim IECON26-001163 Parameter Identification of PEM Fuel Cells Utilizing a Hybridized Jellyfish Search and Nelder-Mead Simplex Optimization Algorithm El Moundher Aouiche, Sanjeevikumar Padmanaban, Mohammed Echarif Aguida, Chaima Aouiche, Abdelaziz Aouiche, Mouhammed Saigaa <i>continues on next page ►</i>

08:00–09:30 Online Room-7 ONLINE <i>cont'd</i>	<i>Online-SS-09: Power-Electronic-Enabled Control and Market-Oriented Operation of Smart Microgrids: Optimization, Demand Response, and Peer-to-Peer Energy Trading · continued</i> IECON26-001164 Hyperbolic Tangent-Based Adaptive Torque Control for Torque-Ripple Mitigation in SRMs El Moundher Aouiche, Sanjeevikumar Padmanaban, Mohammed Echarif Aguida, Chaima Aouiche, Mohamed Islam Bentaleb, Abdelaziz Aouiche IECON26-001561 Cost-Sensitive Maintenance Action Learning from Real-World Vehicle Time-Series Data Walmir Acioli e Silva, Jussif Junior Abularach Arnez, Vandermi João da Silva, Vicente Lucena
08:00–09:30 Online Room-8 ONLINE	Online-SS-10: Modern Trends in Electric Drive Control, Power Converter Topologies, and Renewable Energy Systems Chairs: _____ IECON26-000987 Atmospheric graph for wind power forecasting Abdourahman Khaireh-Walieh, Seifeddine Ben Elghali IECON26-001412 DAB Converter Assessment under Constant Power Constant Voltage CP-CV and Traditional CC-CV in Electric Bikes Battery Charging Ahmed Shawky, Mokhtar Aly, Mahmoud S. R. Saeed, José Rodríguez IECON26-000114 An Enhanced Quasi-Z-Source Based T-Type Inverter with Increased Voltage Boost Vitor Pires, Armando Cordeiro, Daniel Foito, Javier Gutiérrez-Escalona, Carlos Roncero-Clemente, Joao Martins IECON26-000138 Multi-Parameter Identification of PMSMs with a Physics-Constrained Backpropagation Neural Network Zhongyu Shi, Fobao Zhou, Xueyan Wang, Zhenxiao Yin, Hang Zhao IECON26-000782 Efficient Learning of Neural Network Assisted Controller for PMSMs using Lyapunov Function Zhenxiao Yin, Xu Chen, Fobao Zhou, Yonghang Zang, Yujia Zhang, Yuxuan Liang, Hang Zhao IECON26-001246 An Implementation-Oriented Delay Compensation Method for Simplified Voltage-Based FCSMPC of Dual-Input Split-Source Inverters Mustafa Abuzaher, Mokhtar Aly, José Rodríguez
08:00–09:30 Online Room-9 ONLINE	Online-SS-11: Artificial Intelligence and Machine Learning Applications in Renewable Energy and Energy Storage Systems Chairs: _____ IECON26-000162 Evaluating the Architecture-Dependent Effectiveness of Quasi-Geostrophic Constraints in Deep Learning for Wind Forecasting Maryam Saeed, Jiaqiang Yang, Muhammad Farhan Khan, Bingqiang Liu IECON26-000318 Electrode State-of-Health Estimation for Lithium-Ion Batteries Using Physics-Informed Deep Operator Networks Philipp Brendel, Christopher Straub, Andreas Rosskopf, Vincent Lorentz, Felix Dietrich IECON26-000372 Hybrid Spiking Neural Network Bidirectional Long Short-Term Memory Framework for Accurate and Energy Efficient RUL Prediction of Li-Ion Batteries Shevil Mehta, Heidi Nygård, Jagath Sri Lal Senanayaka IECON26-000392 From Sanitation to Energy: Multimodal Deep Learning for Real-Time Human Waste Anaerobic Digestion Intelligence Diwakar Yalpi, Sruta Keerti Kasula, Ravi Mukkamala <i>continues on next page ►</i>

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08:00–09:30 Online Room-9 ONLINE <i>cont'd</i>	<i>Online-SS-11: Artificial Intelligence and Machine Learning Applications in Renewable Energy and Energy Storage Systems · continued</i> IECON26-000580 Feature Selection for Data-Driven Solar Photovoltaic Maximum Power Point Tracking Salvador Yabar, Michael García Huamaní, Carlos Alberto Paragua Macuri IECON26-000866 Advanced Physics-Informed Soft Sensor for Offshore Wind Power Measurement and Forecasting via Explainable Graph Convolutional Network Menglong Wu, Xiaotian Zhang, Jiamu Zhang, Qilong Dai, Sheng Wu, Yanhui Wang, Zhongxing Gao
09:30	
09:30–10:00 Venue TBA	Coffee Break
10:00 2 parallel sessions	
10:00–17:00 Dafna - Foyer	Exhibition for Sponsors
10:00–10:30 Dafna - Banquet	Opening Ceremony Chairs: _____
10:30	
10:30–12:30 Dafna - Banquet	Keynote Prof. Xiaohong Guan <i>Cyber-Physical Systems in the Age of Intelligence and Networking</i> Prof. Maryam Saeedifard <i>Next-Generation Grid Architectures in the Era of Power Electronics & AI</i>
12:30 2 parallel sessions	
12:30–14:00 Venue TBA	Lunch Break
12:30–15:30 Salwa 3	Women in IES Luncheon Chairs: _____ <i>Women in IES Luncheon (jing.zhou@uia.no)</i>
14:00 24 parallel sessions	
14:00–15:30 Basir	Onsite-TT-17: Power Systems and Smart Grid Chairs: _____ IECON26-000464 Data-Driven Modelling of Current-Limiting Control of Grid-Following Inverter-Based Resources Soheil Abafat, Alexandros Paspatis, Bamidele Adebisi, Panagiotis Papadopoulos IECON26-000611 Iterative Preventive Security-Constrained Optimal Power Flow with AC Feasibility Enforcement and Generator Reactive Saturation Yousef Abdelaziz, Shehab Ahmed IECON26-000771 Probability EV Demand Profiles for Assessing the Impact of Electric Vehicle Home Charging on Distribution Networks in Qatar Selma Khalid Elhaj Awadallah, Ameena Fathima, Mohd Zamri Che Wanik <i>continues on next page ►</i>

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14:00–15:30 Basir cont'd	<i>Onsite-TT-17: Power Systems and Smart Grid · continued</i> IECON26-000781 Efficient Neural Architecture Search for Smart Grid Anomaly Detection Using Real-Time Simulation Md Rakibul Ahasan, Md Mainul Islam, Rachad Atat, Shady Khalil, Muhammad Ismail, Erchin Serpedin, Abdulrahman Takiddin IECON26-000843 Mitigative Redispatch via Sparsity-Promoting AC Optimal Power Flow James Ciyu Qin, Blazhe Gjorgiev, Giovanni Sansavini IECON26-001872 Small-Signal Modeling and Modal Analysis of a Type-4 Wind Turbine for Sub-Synchronous Oscillation Analysis in Weak Grids Jana Sheikh Ali, Haitham Abu-Rub, Ahmed Massoud, S M Mueen, Sertac Bayhan
14:00–15:30 Nakhil	Onsite-TT-18: Power Electronics Converters Chairs: _____ IECON26-000413 Deadbeat Control of Grid-Connected Multiport Converters with Ripple Power Decoupling Under Unbalanced Grid Conditions Li Ding, Dehong Zhou, Kai Liao, Jianxiao Zou IECON26-000422 Comparative Study of Fuzzy Logic-Based Direct Power Control and Simplified Direct Power Control for Grid-Connected Converters Azeddine Mehaouchi, Mansour Bouzidi, Boualaga Rabhi, Said Barkat IECON26-000453 Sigma-Delta-based measurement model with improved accuracy Mikołaj Kadelawski, Tomasz Swiechowicz, Mariusz Malinowski IECON26-000478 Adaptive Dwell Time Control for Quasi Flying Capacitor Inverter Mouadh Ezzine, Soroush Faramehr, Annegret Wörndle, Babis Vogiatzakis, Petar Igic IECON26-000505 A Dual-Vector Modulation Strategy with Low Voltage Stress for Three-Phase Two-Stage Buck-Type AC-AC Converters Bingkun Li, Jiaxing Lei, Shuang Feng, Hanbin Lai, Zirui Qin IECON26-000678 Torque Estimation for Railway Traction Drives using Converter Input Power and Losses Characterization Lander Lejarza, Iraitz Carretero Caballo
14:00–15:30 Room - PR4	Onsite-SS-12: AI-driven Optimization Control Approaches in Renewable Energy Systems Chairs: _____ IECON26-000055 Power Distribution Control of Hybrid Energy Storage Systems Based on VMD and Fuzzy Control Yanmin Wang, Tianyuan Ma, Jiaming Wang, Junmin Li IECON26-000196 Automatic Layout of Photovoltaic Panels Based on BIM Digital Twin Peiyuan Chen, Chengze Cai, Jiaying Ye IECON26-000296 Harmonic Suppression and Analysis of Stability in Grid-Connected LCL Inverters with VSG Control Yanyu Zhao, Xuemei Zheng, Yingming Wang, Paolo Mattavelli IECON26-000308 Dynamic Wireless Power Transfer System with Slip-Ring Coupler: High Misalignment Tolerance and Constant Voltage Output Chao Qi, Hongyu Lu, Qisheng Qiu, Shaoning Qi, Jinhai Jiang, Fengling Han IECON26-000309 Toward High-Efficiency Decarbonization: Integrated Optimization of Low-Carbon Technologies for NZEBs Li Kanglin, Tang Xiaoliang, Jin Bihui, Yi Jifeng, Li Wei, Li Xiang IECON26-000310 Research on PEDF System Design Technology for Large-Scale Public Buildings Li Wei, Zou Zhihui, Hu Jun, Li Kanglin, Zhang Jianan

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14:00–15:30 Room - PR5	Onsite-TT-19: Renewable Energy and Energy Storage Systems Chairs: _____ IECON26-000566 Optimization Of Hybrid Renewable Energy Systems With Electric Vehicle Charging Stations Muhammad Bilal Ali, Muhammad Luqman, Sheeraz Iqbal, Md Shafiullah IECON26-000581 Dual Extended Kalman Filter-Based Thermal State and Parameter Estimation for Lithium-Ion Batteries Deepshikha A, Keyur Patel, Mahmadasraf Mulla IECON26-000641 Impact of Charging Profiles on Performance and degradation of Sulfide-Based Solid-State Batteries under Constant Temperature Aishwaryaa Kannan, Tanisha Gnanasekaran, Tim Tizon, Shady Khalil, Haitham Abu-Rub, Mohammad Alshaikh Saleh IECON26-000899 A Methodological Approach for Enhancing Industrial Plants Voltage Stability Using Battery Energy Storage Systems Pavel Semenov, Denis Tsarev, Erik Mulkamanov, Vladimir Rebrov, Dmitry Muravyev IECON26-001006 Partial Power Processing based Segmented DMPPT Scheme with Battery Storage Capable to Connect with Fixed DC-Bus for EV Charging Application Sanam Agnihotri, Badavathu Joshna, V Gouri Prasant, Dipankar Debnath IECON26-001046 Sub-Synchronous Oscillations Mitigation in a VSC-HVDC Integrated Offshore Type 4 Wind Farms Muhammad F. Umar, Hussein Alnuweiri, Haitham Abu-Rub, Yazan Qiblawey, Abdulrahman Alassi
14:00–15:30 Room - PR6	Onsite-TT-20: Transportation Electrification and Automotive Technologies Chairs: _____ IECON26-000953 GHOST-CDD: Corroboration-Diversity Detection of False-Consensus Attacks in Collective Perception Nima Abdi, Abdullatif Albaseer, Mohammed Al-Mehdhar, Mohamed Abdallah, Ala Al-Fuqaha, Othmane Bouhali IECON26-001042 Post-Fault Control of PMSM-Driven Propeller System under Single-Phase Loss Conditions Dmitriy Savkin, Evgeniy Stolyarov, Aleksei Aksenov, Ksenia Fedorova, Artemiy Zolotov, Galina Demidova, Alecksey Anuchin IECON26-001586 Bridging the Gap: A Hybrid LLM-Assisted Framework for Battery Pack Configuration Francesco Tosoni, Zhou Xuxin, Li Yuqi, Yukai Chen, Massimo Poncino, Franco Fummi, Sara Vinco IECON26-001355 Modelling and stability of an electrodynamic null flux lateral guidance system for maglev vehicles Marius Pakstys, Renato Galluzzi, Andrea Tonoli, Nicola Amati IECON26-001470 Physics-initialised graph neural network for spatiotemporal thermal monitoring of partial-immersion lithium-ion battery packs Saulius Pakstys, Marco Maritano, Fabio Boscarino, Angelo Bonfitto IECON26-001559 A Maximum Coverage Location Model to Optimize Hydrogen Refueling Infrastructure in Qatar Carlos Mendez, Roberto Baldacci, Marcello Contestabile, Yusuf Bicer, Nurettin Sezer
14:00–15:30 Room - PR7	Onsite-SS-13: Artificial Intelligence and Machine Learning Applications in Renewable Energy and Energy Storage Systems Chairs: _____ <i>continues on next page ►</i>

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14:00–15:30 Room - PR7 <i>cont'd</i>	<i>Onsite-SS-13: Artificial Intelligence and Machine Learning Applications in Renewable Energy and Energy Storage Systems · continued</i> IECON26-000854 Long-Term Energy Management for Residential V2G/V2H Under Warranty-Based Battery Degradation Constraints Francesco Popolizio, Albert Skegro, Torsten Wik, Chih Feng Lee, Changfu Zou IECON26-000082 A Simple and Efficient Method for Eliminating Weighting Factors in FCS-MPC Recep Yildiz, Emrah Zerdali, Marco Rivera, Mert Altintas, Patrick Wheeler, Murat Barut IECON26-000144 A Generative AI-Assisted Digital Twin Framework for Battery State-of-Health Prediction Mohammad Amir, Zifei Xu, Musa Bashir IECON26-001411 A Hybrid Approach for the Accurate Parameterization of Commercial Photovoltaic Modules Muhammad Saqib Ali IECON26-001441 AI-Enhanced Multi-Timescale Modeling and State Estimation of Hybrid Energy Storage System Jasvinder Singh, Arvind ., Ravi Saini, Vikas Kumar IECON26-001337 Single-Shot Performance Analysis of Large Language Models for EV Routing and Charging Usman Zafar, Abdullah A Jabbar, Naheel Kamal
14:00–15:30 Room - PR8	Onsite-TT-21: AI Applications in Control, Mechatronics, and Robotics Chairs: _____ IECON26-000911 Stability-Oriented Deep Reinforcement Learning Controller with Enhanced Observation Space for 9-Level Split Capacitor ANPC Inverters Abdulrahman Serhan, Alamera Nouran Alquennah, Hamza Makhamreh, Mohamed Trabelsi, Mohamed Zribi IECON26-001099 A Lightweight Machine Learning Framework for Leakage Detection and Severity Assessment in Gas-Liquid Two-Phase Flow Pipelines Alamera Nouran Alquennah, Hicham Ferroudji, Mohammad Azizur Rahman, Ali Ghrayeb, Abinash Barooah IECON26-000461 A Perception-Grounded QUB-PHEO Benchmark for Subtask Detection and Intention Prediction Laith Al Shehab, Samuel Adebayo, Mien Van, Seán Mcloone IECON26-001317 Online Feedforward Compensation for Precision Motion Control in Wafer Scanners Using LRTCEN: Lightweight Residual Temporal Convolutional Neural Network Manni Li, Longbin Jiang, Yinyin Lin, Xiaofeng Yang IECON26-001460 Generative AI in Operational Technology: A Review of Applications, Challenges, and Research Gaps Marko Slunjski, Martina Kutija, Damir Sumina, Igor Erceg IECON26-000076 Hybrid State Estimation and Deep Reinforcement Learning for Stabilization and Drift Reduction of a Quadcopter UAV Collins Masimba, Kuanysh Yessenzhanov, Ilyas Muhammad, Gulam Khan
14:00–15:30 Room - PR9	Onsite-TT-22: Cyber-Physical Systems and Internet of Things in Industry Chairs: _____ IECON26-001474 Dynamic Aware AI-Assisted Estimation of Effective Inertia and Damping in Modern Power System Hamideh Alvand, Alireza Zare, Mohammad Shadmand <i>continues on next page ►</i>

14:00–15:30 Room - PR9 cont'd	<i>Onsite-TT-22: Cyber-Physical Systems and Internet of Things in Industry · continued</i> IECON26-001222 Edge-IoT Smart Parking Access Control Using Occupancy Sensing, License Plate Recognition, and MQTT-Based Dashboard Monitoring Thea Lorraine Daniel, Andrea Canaria, Rabab Benotsmane, Maged Baoumy, Morcos Metry IECON26-001304 CARE-IIoT: A Criticality-Aware Rekeying Scheme for Efficient Key Management in the Industrial Internet of Things Mourad Benmalek, Abdessamed Seddiki IECON26-001371 Machine Learning-Based Classification of RF Curves for Quality Inspection in UHF RFID Tags Daniel Santos, Leandro Ensina, Diego Bertolini IECON26-001392 A Resource-Task Network Framework for Modeling and Scheduling Complex Recipes in Modular Plants Bowen Chen, Torben Miny, Tobias Kleinert IECON26-000504 Intrusion Detection for Operational Technology with Cross-Dataset Validation Marlene Paulino, Altair Santin, Eduardo Viegas
14:00–15:30 Online Room-1 ONLINE	Online-SS-14: Intelligent Modelling and Fault Diagnosis Techniques for Safety-critical Industrial Systems Chairs: _____ IECON26-000418 A Lightweight C-JiT for Unsupervised Acoustic Fault Detection in Industrial Environments Bin Wei, Chenglin Fan, Senfeng Cen, Haoxiang Zhang, Qiubo Zhong IECON26-000526 Dynamic Weight Neural Network with Probabilistic Prior Fusion for EV Li-Ion Battery RUL Prediction under Complex Operating Conditions Zhuo Li, Yunlong Li, Jing Luo, Chaojun Wang, Song Yuchen, Datong Liu IECON26-001146 Reliability-Aware Bayesian Updating Based on Posterior Predictive Checking for IGBT Remaining Useful Life Prediction Bac Viet Nguyen, Hieu Le Van, Jae Jeon IECON26-001268 Bayesian-Optimization-Based Adaptive Illumination and Fault Detection for Fiducial-Mark Recognition on Flexible Printed Circuit Boards Xinbo Meng, Zhengkai Li, Hao Sun, Xinghu Yu, Qin Zhao, Tong Wang IECON26-001487 VisionRUL: Visual Foundation Model Meets Turbofan Engine Remaining Useful Life Prediction Li Shen, Yan-Fu Li, Xuyi Fan IECON26-001624 Towards Safe and Reliable Autonomous Driving: A Context-Aware Multimodal Framework for Lane Keeping Assist Anomaly Detection Chun Fai Lui, Yan-Fu Li
14:00–15:30 Online Room-10 ONLINE	Online-TT-23: Signal & Image Processing Methodologies Chairs: _____ IECON26-001012 Automated Rock Mass Discontinuity Mapping from Borehole Video Using Cylindrical Unwrapping and Depth-Based Stitching Gabriella Muscat, Brian Azzopardi, Evan Dimech, Christian Schembri, Adrian Mifsud, Andrew Sammut IECON26-001092 A Modified Autogram for Improved Prognostic Health Indicator Extraction in Wind Turbine Gearboxes Fawzi Gougam, Mahfoud Bouzouidja, Abdenour Soualhi IECON26-001141 RDSE: Real-Time Directional Speech Enhancement Framework for Dual-Mic Commodity Smartphones Chinmay Deo, Danish Mahajan, Soudeep Ghoshal, Himanshu Buckchash <i>continues on next page ►</i>

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14:00–15:30 Online Room-10 ONLINE cont'd	<i>Online-TT-23: Signal & Image Processing Methodologies · continued</i> IECON26-001298 YOLO-C2M: An Extremely Lightweight and High-Accuracy Steel Strip Surface Defect Detector Ishaan Thairanil, Gargi Srivastava, Nirbhay Kumar Tagore IECON26-001384 VMD-CMCSNet: A Cross-Mode Context-Guided Residual Shrinkage Network for Bearing Fault Diagnosis Under Strong Noise and Load Variations Jun Yang, Xuedong Jing IECON26-001387 Faint Serial Number Detection and Recognition on Transparent Lenses via Structured-Background-Assisted Imaging, YOLOv11n-OBb and CRNN Xiangkun Zhao, Xuedong Jing
14:00–15:30 Online Room-11 ONLINE	Online-SS-15: ADVANCED CONTROL AND SIGNAL PROCESSING IN MECHATRONICS Chairs: _____ IECON26-000149 Nonlinear Velocity Regulation of Laser-Scanning Systems with Friction Compensation José A. Núñez-López, Javier Cruz-Leyva, Dennis Molina-Quiroz, Vera Tyrsa, Fernando Lopez-Medina, Ruben Alaniz-Plata, Oleg Sergiyenko, Paolo Mercorelli IECON26-000178 Robust Anti-Sway Control for 3D Overhead Cranes Guaranteeing Asymmetric Constraints Shengzeng Zhang, Xinggao Liu, Michael Basin, Haoxiang Zhang, Junhao Zhang, Xiongxiang He IECON26-000346 Super-Twisting Sliding Mode Control for a Dual-Axis Thrust-Vectoring Octarotor UAV Rumo Chen, Yipeng Yang, Zhan Li IECON26-000491 Fully actuated system approach based 6DOF spacecraft tracking control with input quantization Qin Zhao, Zhengkai Li, Zhihong Zhao, Jingyu Ding, Mariusz Malinowski IECON26-000601 A Climbing and Jumping Integrated Robot inspired by Centipedes Pan Zhou, Haili Li, Michael Basin, Zhaoyi Lin, Lang Zhou IECON26-000815 A Damage-Tolerant Braided Array Gripper: Design, Characterization, and Application Pan Zhou, Haili Li, Juntao Wang, Wei Zhao, Chongbo Zhou
14:00–15:30 Online Room-12 ONLINE	Online-SS-16: Artificial Intelligence for Design, Modeling, and Optimization of Electric Machines Chairs: _____ IECON26-000215 Data-Driven Fault Detection and Performance Monitoring of Induction Motors Under Variable Operating Conditions Md Golam Mortuza, Shady Khalil, Mostafa Farrag, Amira Mohammed, Nour Morsi IECON26-000316 High-Fidelity Nonlinear Modeling of a PMSM Using a Physics-Informed Recurrent Neural Network Qian Deng, Wenlong Li, Tian Liu, Mohammad Sedigh Toulabi IECON26-000751 Schema-Guided BERT-LoRA Framework for Continual Surrogate Modeling of Surface Permanent Magnet Motors Yuxiao Li, Toshiaki Koike-Akino, Ye Wang, Tatsuya Yamamoto, Yusuke Sakamoto, Bingnan Wang IECON26-000791 Genetic Algorithm-Based Topology Optimization of Magnetic Circuits for Hall Effect Thruster Ye Mou, Wei Hu, Peihong Cheng <i>continues on next page ►</i>

14:00–15:30 Online Room-12 ONLINE cont'd	<i>Online-SS-16: Artificial Intelligence for Design, Modeling, and Optimization of Electric Machines · continued</i> IECON26-001144 Active-Learning Neural Network Surrogates for Multi-Physics Co-Optimization of High-Speed Iron Nitride Assisted Synchronous Reluctance Motor Robin Wilson, Praveen Kumar, Ayman El-Refaie IECON26-001426 Self-Calibrating Retrofit PMSM Drive: Restoring Model Predictive Control MTPA and Flux-Weakening References from Onboard Signals Khaoula Soula, Seifeddine Ben Elghali
14:00–15:30 Online Room-13 ONLINE	Online-SS-17: Networked Intelligent Measurement and Control for Cyber-Physical Systems Chairs: _____ IECON26-000521 Distributed State-Space Nash Equilibrium Seeking for Discrete-Time Multiagent Systems Kexuan Han, Changda Zhang IECON26-000522 Distributed Nash Equilibrium Seeking for Discrete Multiagent Systems with Dual-Integral Dynamics Ruhang Wei, Changda Zhang IECON26-001528 A Low-Cost Edge-First Smart Warehouse System Based on Time-Multiplexed Passive UHF RFID Cintia Garcia, Paulo Leitaó, Luis Piardi IECON26-001672 Link Reliability-Aware Fusion of Multiple Clock Domains for Multi-hop TSN Networks Haoze Xue, Jiahao Xu, Qimin Xu, Cailian Chen IECON26-000888 NSAIR: Neurosymbolic AI for Adaptive Electric Vehicle Routing in Disrupted Charging Networks Md Rakibul Ahasan, Abdulrahman Takiddin IECON26-001497 A New Two-Tier Coordinated Dispatch Framework at the Urban Transportation-Energy Nexus: Mobile Charging Vehicle Route-Dependent Active-Power Delivery and Local Reactive-Power Support Yucheng Wei, Chuanzhi Fan, Yong Wang, Jing Wang, Huachun Tan, Boyang Hu
14:00–15:30 Online Room-14 ONLINE	Online-TT-24: Control Systems and Applications Chairs: _____ IECON26-000260 Performance-guaranteed Model Reference Adaptive Control with Input Saturation Yuxuan Liang, Zhenxiao Yin, Xiaobing Dai, Caihao Xu, Hang Zhao IECON26-000307 Large Language Model-Driven Decision-Making and Risk Assessment for Collision Avoidance in Maritime Navigation Peihua Han, Feng Xiao, Beatriz Sanguino, Arnt Håkon Barmen, Guoyuan Li, Houxiang Zhang IECON26-000322 Operationally Aware Historical Similarity Search for Blast Furnace Control Lucas Amorim, Filipe Mutz, Alberto De Souza, Claudine Badue, Thiago Oliveira-Santos, Thiago Paixão, Vinicius Rampinelli IECON26-000336 Multi-FPGA-Based Real-Time Simulation and Model Partitioning for Aircraft Power Systems Wang Xiaoqiang, Fei Deng, Zhao Nan, Lei Tao, Li Weilin, Zhang Xiaobin IECON26-000337 A Grid-Density-Driven Co-Evolutionary Algorithm for Multi-AUV Cooperative Path Planning under Multi-Objective Constraints Ruonan Li, Meng Yang, Wei Zhang, Ruichi Sun, Nan Jing, Lei Du IECON26-000343 Asynchronous Game-Theoretic Recovery Allocation for Multi-UUV Systems Under Stale Intention Sharing Ruichi Sun, Biyin Zhang, Wei Zhang, Zhe Zhang, Ruonan Li, Nan Jing, Peiyu Han, Zixuan Li

14:00–15:30 Online Room-15 ONLINE	Online-TT-25: Cyber-Physical Systems and Internet of Things in Industry Chairs: _____ IECON26-001236 Performance and Energy Trade-offs in Power-Constrained Embedded LLM Inference Lucas Silvestre De Jesus, Thales Mikael Cunha Da Silva, Juliana Dos Santos, Marcelo Pias IECON26-001334 Non-Contact Estimation of Operator Physical Workload for Human-Centric Manufacturing: A Depth-Sensor and Cyber-Physical Systems Approach Alex Vinicios Telocken, Guilherme Von Ahn Avila, Yuri Oliveira Serra, Fernando da Cruz de Mello, Marcelo Malheiros, Cesar Augusto Otero Vaggetti, Alessandro Bicho IECON26-000280 Verifiable Secure Aggregation for Privacy-Preserving 3D Localization with Linearized 3D AoA/ToA Fusion Yuhan Cai, Shengming Chang, Yangwen Luo IECON26-001455 MQTT-Based Image Fragmentation and Recovery under Intermittent Connectivity in Cyber-Physical Systems Everson Da Silva Flores, Bruna Guterres, Thomaz Pereira Junior, Alberto Cabral, Kauã Barbosa, Marcelo Malheiros, Cristiana Dora, Marcelo Pias IECON26-000328 PRISM-Loc: Privacy-Preserving Decentralized 3-D AOA Localization with Secure Aggregation and High Dropout Resilience Yichang Mou, Shengming Chang, Dongdong Lv IECON26-000993 FIWARE vs. Eclipse Ditto: A Comparative Study of Digital Twin Platforms for Process Industry Beatriz Cristina de Faria, Caio Oliveira, Flávia Pires, Gabriel Neves, Jose Barbosa
14:00–15:30 Online Room-16 ONLINE	Online-TT-26: Power Systems and Smart Grid Chairs: _____ IECON26-001694 Adversarial Margin Capability of Soft Open Points in Flexible Distribution Networks Alaa Selim IECON26-000199 Lightweight Multi-Agent RL for Bidirectional V2G Integration in Multi-Microgrid Systems Zhang Yule, Shunyuan Xiao, Li Jin IECON26-001162 Fast-Tracking Probabilistic Hosting Capacity Assessment in Hybrid AC/DC Grids Victor Tibanlombo, Tiago Soares, Ignacio Hernando-Gil IECON26-000249 A Privacy-Preserving Load Forecasting Model for Power Grids under Federated Learning Framework Xinyue Wang, Xiangyu Kong, Gaohua Liu, Aifei Pei, Mingyang Li IECON26-000451 Embedded MPC-based Energy Management for SST-Interfaced Residential Hybrid Nanogrid with Closed-Loop SoC Feedback Nasrin Einabadi, Mehrdad Kazerani IECON26-000463 Dynamic-Frequency-Deviation-Based Adaptive Damping Control for Islanded Multi-VSG Microgrids Mingjun Li, Kaushik Rajashekara
14:00–15:30 Online Room-2 ONLINE	Online-SS-18: Sliding Mode Control, Model Predictive Control and AI-Assisted Advanced Control of Power Electronics Converter Chairs: _____ IECON26-000719 Indirect Model Predictive Control for Grid-Tied Three-Level Converters With Neutral Point Potential Balancing and Improved Active Damping Matías Correa, Petros Karamanakos <i>continues on next page ►</i>

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14:00–15:30 Online Room-2 ONLINE <i>cont'd</i>	<i>Online-SS-18: Sliding Mode Control, Model Predictive Control and AI-Assisted Advanced Control of Power Electronics Converter · continued</i> IECON26-000829 A Unified Multirate Discrete-Time Sliding Mode Control Design for Robust Current-Limited Output-Voltage Tracking in DC-DC Converters Senad Huseinbegovic, Lejla Ahmethodzic IECON26-001169 Real-Time Voltage Control of the Boost Converter Using Nonlinear Model Predictive Control Marco Guerreiro, Erfan Mousavi, Jonas Ulmen, Steven Liu IECON26-001245 Data-Driven Health Monitoring and Fault Diagnosis of Output Capacitors in DAB Converters Using an LSTM Neural Network Mustafa Abuzaher, Shen Ke, Deiaaldean Khaleel, Dan Zhan, Mokhtar Aly, Elsayed Saad, José Rodríguez IECON26-001332 Finite-Time Super-Twisting Sliding-Mode Control for LLCL-Filtered Battery Energy Storage Power Conversion Systems Under Distorted Grid Conditions Bin Xiao, Bo Pan, Ning Gao, Chao Li, Lixun Zhu, Hao Chen IECON26-001692 Improved Model-Free Predictive Control Using STSMO of an Interleaved Floating DC-DC Multilevel Boost Converter Yuxia Wang, Bo Liang, Xuan Zhang, Chuyang Qiu, Jiaming Zhou, Yuren Li
14:00–15:30 Online Room-3 ONLINE	Online-SS-19: Modern Trends in Electric Drive Control, Power Converter Topologies, and Renewable Energy Systems Chairs: _____ IECON26-001311 A Hybrid ANFIS-Backstepping Framework for Robust Induction Motor Control: From Model-Based to Data-Driven Learning Skander Bensalem, Soufien Hajji, Mohamed Trabelsi, Youssef Agrebi Zorgani IECON26-001174 Redundant Vector-Based Hybrid Modulation Strategy for Three-Level Four-Leg Inverters Based on Capacitor Voltage Imbalance Degree Xinyang Cao, Xiang Han, Xiang Ou, Yan Deng, Abhishek Kumar, Federico Ibanez, Elena Gryazina IECON26-000020 Online Estimation Method for Threshold Voltage of GaN HEMT Based on Output Charge During Power Module Start-up Process Zhongchang Li, Zihao Zhang, Pengfei Wang, Hao Gu, Zhibin Tian, Minfan Fu IECON26-000177 SVPWM of a Three-Phase Hybrid ANPC Converter Applied in EV Fast Chargers Ana Rita, Muhammad Awais, Saghir Amin, Nuno Costa, Joao Afonso, Vitor Monteiro IECON26-001147 A Single-Phase Single-Stage Six-Switch Nonlinear Buck-Boost Inverter for Low-Voltage DC AC Applications: Topology and Modulation Scheme Hao Qin, Liou Cai, Celine -, Xiang Han, Yan Deng, Abhishek Kumar, Federico Ibanez, Elena Gryazina IECON26-000330 Improved Phase Noise Mitigation in CV-QKD Using LSTM Neural Networks Tao Shen, Nannan Gu
14:00–15:30 Online Room-4 ONLINE	Online-SS-20: Cybersecurity Frameworks for Modern Power Systems: Threats, Resilience, and Intelligent Defence Chairs: _____ IECON26-001551 Security Analysis of Agentic AI in OT: Threat Model & Adaptations to IEC 62443 Marwin Madsen, Fabian Pfetzing, Heiko Adamczyk, Mike Barth <i>continues on next page ►</i>

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14:00–15:30 Online Room-4 ONLINE <i>cont'd</i>	<i>Online-SS-20: Cybersecurity Frameworks for Modern Power Systems: Threats, Resilience, and Intelligent Defence · continued</i> IECON26-001671 Green-ZTPG: Energy-Aware Zero-Trust LLM Prompt Governance for 5G-assisted Manufacturing Sameer Kumar, Rounak Mishra, Samyak Jain, Pronaya Bhattacharya, Sandip Roy, Kwok Tai Chui, Brij B. Gupta, Thippa Reddy Gadekallu IECON26-000701 Resource efficiency and carbon mitigation interventions in groundwater-fed agriculture Mehrdad Poursadegh, Jan Haase, Kevin James, Reza Barati, Seyed Hamid Mirghasemi, Ahmad Faezi IECON26-000331 A Frequency-aware Differential Privacy Protection Method for Photovoltaic Time Series Data Lei Cao, Dan Zhang, Yilian Zhang, Libo Xu IECON26-000675 ECHO-IDS: Evidence-Calibrated Hallucination and Intrusion Detection for LLM-Assisted CPS Security Mohamed Massaoudi, Maymouna Ez Eddin, Khandaker Akramul Haque, Shady Khalil, Katherine Davis, Thejas Sadashiva IECON26-001666 Robust Similarity-Graph Ensemble Intrusion Detection for Multiclass Cyber-Physical Grids Mohamed Massaoudi, Khandaker Akramul Haque, Maymouna Ez Eddin, Katherine Davis, Hassan Salamy, Mahmoud Kabalan
14:00–15:30 Online Room-5 ONLINE	Online-SS-21: Advanced Signal and Image Processing Technologies for Condition Monitoring of Electric Machines and Drives Chairs: _____ IECON26-000136 Voltage-Only Online Estimation of Equivalent Average Resistance in Three-Level Buck Converter Using an Auxiliary Switching Network Xiaoyu Zhou, Zhangyong Chen, Xiaorong Hou, Yong Chen, Pengqi Gao IECON26-000954 Reliability of Capacitors for DC Bus Application: Standardization of Lifetime Model Coefficients Annoy Kumar Das, Akshay Kumar Rathore IECON26-000103 An Advanced Neural Network Algorithm Optimized by Artificial Bee Colony for Classification of Wind Turbine Faults Based on Stator Current Analysis Anissia Beainy, Nazih Moubayed IECON26-001175 Symbolic Sequence Encoding and Bio Inspired Optimization for Efficient Few Shot Cross Domain Bearing Fault Diagnosis Tarang Pande IECON26-001224 Effect of Pulsewidth Modulation Schemes on Data-Driven Open-Circuit Fault Classification in AC Drives with T-type Inverters Yang Zhao, Chee Shen Lim, Huiqing Wen, Chao Long IECON26-001677 Context-Assisted Sim-to-Real Deep Learning for Current-Sensor Gain and Offset Estimation in PMSM Drives Johannes Sautter, Philipp Wagner, Michael Grill, André Casal Kulzer
14:00–15:30 Online Room-6 ONLINE	Online-SS-22: Self-aware and Resilient Operation of Intelligent Microgrids Chairs: _____ IECON26-001482 Physics-Embedded Variational Learning Framework with Gaussian-Process Port-Hamiltonian Damage Dynamics for IGBTs Wire-bond Prognostics Atefeh Gavahian, Javad Ebrahimi, Chris K. Mechefske, Alireza Bakhshai IECON26-001554 Energy-Efficient Virtual Machine Rebalancing Using Fuzzy Utility-Guided Biogeography-Based Optimization Ehsan Akhlaghisabahi, Javad Ebrahimi, Alireza Bakhshai <i>continues on next page ►</i>

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14:00–15:30 Online Room-6 ONLINE <i>cont'd</i>	<i>Online-SS-22: Self-aware and Resilient Operation of Intelligent Microgrids · continued</i> IECON26-000849 DC-DC Converter Based on Differential Connection with Partial Power Processing, Wide Conversion Range, and Reduced Switch Voltage Stress Vitor Pires, Armando Cordeiro, Daniel Foito, Joaquim Monteiro, Edivan Laercio Carvalho, Joao Martins IECON26-001417 Photovoltaic Integration into a Multi-Port Smart Transformer Through Embedded Maximum Power Point Tracking Marco Urbano Gómez, Rubén García Corrales, Enrique Romero-Cadaval, Maria Isabel Milanés IECON26-000614 Benchmarking Synthetic Defect Generation and Detection Models for Decorative Wood-Based Panel Inspection Rodrigo Pereira, Eliseu Pereira, Gil Gonçalves IECON26-000783 Dual-Layer Retrieval-Augmented LLM-Based Fault Diagnosis Method for Traction Drive Systems Lingli Tan, Zhiwen Chen, Zixuan Xu, Jiamin Xu
14:00–15:30 Online Room-7 ONLINE	Online-SS-23: Advanced data-driven performance assessment and fault-tolerant control for industrial automation systems Chairs: _____ IECON26-001037 Occlusion-Robust Multi-Object Decoupling for Physics-Based Robotic Interaction Xin Dong, Lihan Zhang, Tianru Dai, Wenfeng Deng, Yansong Tang IECON26-001229 CDGNet: Industrial Gas Image Segmentation Based on Cross-Modality Calibration and Fusion Learning Nan Zhang, Jiaxin Li, Wenfeng Deng, Xiaojun Liang IECON26-001602 Autonomous Motion Planning for 6-DoF Reusable Launch Vehicles With Fuel Optimization Yabin Gao, Chen Xin, Xiuming Yao, Guanghui Sun, Ming Liu IECON26-000107 Time-Domain Reconstruction-Enhanced Physics-Informed Neural Network for Parameter Identification of Wireless Power Transfer Systems Jianlong Yin, Pingan Tan IECON26-000711 Machine Learning for Intelligent Wireless Power Transfer in AGV Charging: A Focused Review Mahmoud Howaidi, Yousef Mahmoud IECON26-000933 Sensorless Voltage Build-Up Control for Aircraft Multi-Stage Starter-Generator System with Controllable Rectification Generation Jingjing Cao, Ningfei Jiao, Tao Yang, Huanxu Zhang, Tao Meng, Weiguo Liu
14:00–15:30 Online Room-8 ONLINE	Online-SS-24: Intelligent Control, Learning, and Robotics for Flexible and Resilient Industrial Automation Chairs: _____ IECON26-001176 AI-Enhanced Predictive Maintenance for Industrial Robotics via Multi-Modal Sensor Data Analysis Most Arina Afrin, Elham Ahmadi, Mohammed Elmsurati IECON26-001495 Terrain Geometry Estimation for Mobile Robots Using Statistical and Physical Evidence-Based Feature Selection with IMU Data Ryunosuke Maruta, Mihoko Niitsuma IECON26-001518 RCS-Aided Monte Carlo Localization for 4D Radar in Repetitive Orchard Rows Lee Sanghyeon, Kanghyun Jo <i>continues on next page ►</i>

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14:00–15:30 Online Room-8 ONLINE <i>cont'd</i>	<i>Online-SS-24: Intelligent Control, Learning, and Robotics for Flexible and Resilient Industrial Automation · continued</i> IECON26-001543 A Hybrid Teaching System for Collaborative Welding Robots Integrating Marker-Based Teaching and LLM-Based Verbal-Interactive Teaching Kousuke Shimizu, Mihoko Niitsuma IECON26-001553 Caregiver Task Assistance through Visual Auditory Information Presentation Based on 3D Human Posture - Based Task Recognition Shota Nakajima, Mihoko Niitsuma IECON26-000887 Multi-Aerial System Cooperative Path Planing in a Cluttered Flying Zone Umair Javaid, Hassal Ul Huzaibi, Michael Basin
14:00–15:30 Online Room-9 ONLINE	Online-SS-25: AI-Driven Analysis, Modelling, and Control of Unmanned Engineering Systems Chairs: _____ IECON26-000956 Boosting Small Object Recognition in UAV Imagery: A Plug-and-Play Module Based on Training-Free Mask Prediction and High-Resolution Feature Classification Rui Yang, Michael Basin, Hongzheng Zeng IECON26-000612 Experimental Assessment of Modulation Schemes and Reactive Power Support Capability of Grid-connected HERIC Inverter Anju James, Naga Brahmendra Yadav Gorla IECON26-000493 Adaptive Quantized Control for Coupled 6DOF Spacecraft with Unknown Inertia Properties and Input Saturation Qin Zhao, Zhengkai Li, Jingyu Ding, Michael Basin, Mariusz Malinowski IECON26-000749 HFA-SR: Hierarchical Fourier Attention for Single Image Super-Resolution Xuenan Qiu, Wenli Huang, Zhuoyuan Wang, Yizhe Huang, Ping Yu, Ye Deng IECON26-000810 A Constrained Reinforcement Learning Approach for Bipedal Locomotion in Low-Clearance Environments via Teacher-Student Distillation Chaojie Lin, Zhuolin Tan, Binbin Wang, Xiaochen Xie
15:30	
15:30–16:00 Venue TBA	Coffee Break
16:00 26 parallel sessions	
16:00–17:30 Basir	Onsite-TT-27: Power Systems and Smart Grid Chairs: _____ IECON26-000458 SIMDA-FL: Sequence Impedance Modal Fault Localization in Distribution Networks Hassan Ali, Mutasim Nour IECON26-000068 Adaptive Signal Processing Framework for Frequency Estimation of Power System Forced Oscillations Aya Haraz, Ahmed Massoud, S.m. Muyeen IECON26-000880 Game-Theoretic Adaptive Voltage Threshold Tuning Against HVAC Based Load Demand Variations Suman Maiti, Anjana Balabhaskara, Sunandan Adhikary, Soumyajit Dey IECON26-001115 Synergetic Secondary Control for FCS-MPC Based Grid Forming Inverters Abdelbasset Krama, Sertac Bayhan IECON26-001142 A Hardware-in-the-Loop Testbed for Microgrid Cybersecurity: Protocol Analysis, and Evaluation Analucia Vera-Marich, Yakubu Tsado, Alexandros Paspatis, Soheil Abafat, Bamidele Adebisi <i>continues on next page ►</i>

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16:00–17:30 Basir <i>cont'd</i>	<i>Onsite-TT-27: Power Systems and Smart Grid · continued</i> IECON26-001152 LSTM-Based Prediction and Classification of High- and Low-Impedance Faults in Active Distribution Networks Mohammad Alzyod, Suhail Hussain
16:00–17:30 Nakhil	Onsite-TT-28: Power Electronics Converters Chairs: _____ IECON26-001059 Experimental and Grid-Connected Validation of a Cascaded High Step-up DC-DC Converter for Photovoltaic Applications Md Tahmid Hussain, Rashid Ahmed Khan IECON26-000850 Computational Fluid Dynamics-Based Thermal Modeling of Liquid Cooled Electric Vehicle Charger Abdul Wadood Fathah, Naheel Kamal, Ali Sharida IECON26-000965 Modeling of mutual thermal couplings between planar transformer components Krzysztof Gorecki, Paweł Gorecki IECON26-001027 Multi-Cell Active Resonant Voltage Balancer with Integrated Hysteresis Window for Supercapacitor Modules Sebastian Pjeci, Alireza Ghanbari, Aleksandra Stanojevic, Petar Grbovic IECON26-001105 Quasi-Variable-Capacitor-Based Resonance Condition Control for Induction Heating Inverters Sachio Kubota, Yoshihiro Shimaoka IECON26-001100 A Time-Domain Machine Learning Method for Non-Intrusive Converter Control Identification Yazan Qiblawey, Agustí Egea-Álvarez, Khaled H. Ahmed, Abdulrahman Alassi
16:00–17:30 Room - PR4	Onsite-TT-29: Electric Machines and Industrial Drives Chairs: _____ IECON26-000940 Vector-Length-Modulated Model Predictive Flux Control for Open-End Winding Induction Motor Drives Kaif Ahmed Lodi, Balanthi Beig, Jamal Alsawalhi IECON26-001843 Quantitative Dynamic Characterization of a Cross- Feedback-Network PLL Under Speed Transients for Sensorless PMSM Rotor-Angle Estimation Taseen Bin Asad, Yaman Zbede, Morcos Metry IECON26-001320 Application Limits of Heat-Pipe-Assisted Rotor Cooling in Electrical Machines: A First-Order Thermal Analysis Toluwaleke Owoso, Rafal Wrobel, Richard Law, Ryan Mcglen IECON26-001479 MTPA-Based Adaptive Command-Filtered Control for High-Efficiency Position Servo of IPMSMs Zihang Wan, Le Sun, Longmiao Chen IECON26-001532 Model Recovery Anti Windup in the Flux Weakening Region for Synchronous Reluctance Machines Rashad Ghassani, Mohamed Mroueh, Al Kassem Jebai IECON26-000083 Semi-Supervised Learning for Bearing Fault Diagnosis under Label Scarcity Muhammad Ahmad, Mannan Hassan, Md Shafiullah
16:00–17:30 Room - PR5	Onsite-TT-30: Renewable Energy and Energy Storage Systems Chairs: _____ <i>continues on next page ►</i>

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16:00–17:30 Room - PR5 <i>cont'd</i>	<i>Onsite-TT-30: Renewable Energy and Energy Storage Systems · continued</i> IECON26-001178 A Quantitative Inspection Approach for Mixed Power-Rating Defect in Photovoltaic Module Assembly Using Electroluminescence Imaging Analysis Bessan Sherif, Youssef Hassan, Mahmoud Gaafar, Mohamed Orabi IECON26-001890 An Electrode-Referenced Framework for Reinterpreting Depth of Discharge in Lithium-Ion Aging Models Anas Karaki, Ahmed Karaki, Sertac Bayhan, Haitham Abu-Rub IECON26-001397 Multi-Criteria Optimal Sizing of Deployable Islanded PV Battery Hydrogen Microgrids Venkata Siva Sathya Sairam Jagu, Lies Debruyne, Jorben Mus, Frank Buysschaert, Michael Kleemann IECON26-001424 Performance Ratio Assessment and Loss Factor Analysis of a Grid-Connected PV System in Egypt Using PVsyst Eman Gomaa, Eltaib Ibrahim, Mohamed Orabi IECON26-001626 Operational Assessment of Fresnel-Lens CPV-PEM Systems in Arid Regions: Hydrogen Yield, Field Sizing, and Limited Buffering Amal El Yaagoubi, Ali Ahaitouf IECON26-001853 Hierarchical Energy Management and Centralised Finite Control Set MPC for Hybrid Islanded DC Microgrids Mehmet Cecen, Marco Rivera, Ricardo Perez, Zahra Esfahani, Aleksandra Lekic, Jakson Bonaldo
16:00–17:30 Room - PR6	Onsite-TT-31: Transportation Electrification and Automotive Technologies Chairs: _____ IECON26-001117 Dual Active Bridge Converters for Electric Vehicle Chargers: A Survey of Converter Variants, Modulation Strategies, and Hardware Trends Futoun Alajmi, Aseel Aslah, Abdulrahman Serhan, Mohamed Trabelsi IECON26-001746 Closed-Loop Edge Evaluation of Compressed Deep Reinforcement Learning for Autonomous Driving Sumansmita Rout, Ayantika Chatterjee IECON26-001794 LCL-based Dual-Transmitter Compensation Architecture for Dynamic WPT Systems with Comparative Analysis of Prominent Compensation Networks Kaniy Ahmad, Hassan Khalid, Saad Mekhilef, Hussain Bassi IECON26-001798 A Digital Twin Framework for Automated Ship Microgrid Modeling with Advanced Multi-Node Voltage Stabilization Mehdi Asadizadehshiraz, Rafal Jastrzebski, Emre Can Kaya, Touko Herranen, Sami Tohmola, Jari Böling IECON26-001235 Control of an Integrated Three-Level NPC Rectifier-Based On-Board Battery Charger for EVs Oumaima Joraiche, Abdelmajid Abouloifa, Ibtissam Lachkar, Juan Wang, Abdelali El Aroudi IECON26-001483 Frequency-Independent Passive RIS Optimization for Wideband Sub-THz Industrial Communications Faran Awais Butt, Ali Arshad Nasir, Saleh Ahmed Alawsh, Ali Hussein Muqaibel
16:00–17:30 Room - PR7	Onsite-TT-32: Control Systems and Applications Chairs: _____ IECON26-001769 Modelling, Controller Design and Performance Analysis for UAV Trajectory Tracking in Last-Mile Delivery Abdul Hannan Ameer, Salmiah Ahmad, Rabab Benotsmane, Waleed Mahimi <i>continues on next page ►</i>

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16:00–17:30 Room - PR7 <i>cont'd</i>	<i>Onsite-TT-32: Control Systems and Applications · continued</i> IECON26-000875 FPGA-Accelerated Model Predictive Control of Gas Turbine Aero-Engines Issam Chekakta, Hadriano M Escamilla, Andrew F Hills, Andrew R Mills, Steven Culwick IECON26-001381 Real-Time Koopman-Based Reference Trajectory Compensation for Main Secondary Synchronization in Wafer Scanners Longbin Jiang, Manni Li, Xiaofeng Yang IECON26-000262 Obstacle-Aware Reinforcement Learning Based Control of a Custom 5-DOF Robot Arm for Automated Energy Infrastructure Management Tala Zaim, Mohammad Reza Chalak Qazani, Hong Fu, Nader Meskin, Ali Safa IECON26-001258 A Low-Cost and Low-Complexity Functional Safety Embedded Controller Reference Board with Flexible 24 V I/Os for Industrial Applications Joschka Laufs-Randerath, Christian Mühlfeld, Jens Onno Krah IECON26-000362 Interacting Multiple Model Filtering for Robust Underwater Robot Direction-of-Arrival Tracking Nader Meskin, Ali Safa
16:00–17:30 Room - PR8	Onsite-TT-33: AI Applications in Control, Mechatronics, and Robotics Chairs: _____ IECON26-001524 A Runtime Safety Layer for Real-Time UAV Control Using Predictive Monitoring Hani Beirami, Marco Roveri IECON26-001649 Design and Experimental Comparison of Motorization Alternatives for an Assisted Walker Isabel Seguí Verdú, Dunai Larisa, Luis Taroncher Pellicer IECON26-001512 Design and Performance Evaluation of a Deep-Water ROV for Engineering Operations in Complex Flow Fields Weiyan Shang, Zhongda Lv, Fei Wang, Hongfei Cao IECON26-001579 H-PAC Hand: Control-Oriented Modeling and Tendon-Elasticity Compensation for an Underactuated Robotic Hand Teng Yan, Jiongxiu Chen, Teng Wang, Yue Yu, Zhengyang Pei, Qixiang Hua, Zihang Wang, Yongru Chen, Bingzhuo Zhong IECON26-000509 Equivalent Hydrodynamic Coefficient Representation and Identification of Ship Maneuvering Dynamics under Environmental Disturbances Shiyang Li, Guiyong Zhang, Tongtong Wang, Houxiang Zhang, Biye Yang, Jinxin Wu IECON26-000979 A High-Step-up Hybrid Cascaded SEPIC DC-DC Converter with a Switched-Inductor-Capacitor Cell for Renewable Energy Applications Hamed Abdi, Ebrahim Babaei
16:00–17:30 Room - PR9	Onsite-SS-26: Artificial Intelligence and Machine Learning Applications in Renewable Energy and Energy Storage Systems Chairs: _____ IECON26-001422 A Novel Design of Three-Phase Multilevel Inverter Topology Marif Daula Siddique, Mohammad Samiullah, Ali T. Al-Awami, Mohamed Abido IECON26-000163 A Digital Twin-Based Evaluation of Decision-Generation Strategies for Residential Microgrid Energy Management Furqan Amjad, Taaha Asrar Ahmed, Tarmo Korōtko, Argo Rosin IECON26-000587 Particle Swarm Optimized Driven and Domain-Guided Learning Framework with Hybrid Reliable and Uncertainty-Aware RUL Prediction of Lithium-Ion Batteries Matee Ur Rasool Meladi, Ghulam Amjad Hussain, Abdul Salam, Muhammad Inam Ul Haq Haq, Zeeshan Ahmad Arfeen, Madia Safdar <i>continues on next page ►</i>

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16:00–17:30 Room - PR9 <i>cont'd</i>	<i>Onsite-SS-26: Artificial Intelligence and Machine Learning Applications in Renewable Energy and Energy Storage Systems · continued</i> IECON26-000725 Rotational Robustness and Explainable Machine Learning for Hydrogen Storage Prediction in LiNH₆ Nanoparticles Mustafa Kurban, Erchin Serpedin, Hasan Kurban IECON26-000831 Failure-Driven Enhancement for Crack Detection in Photovoltaic Panels Using Electroluminescence Images Ali Teta, Kouzou Abdellah, Derradji Bakria, Ahmed Chennana, José Rodríguez, Mohamed Abdelrahem IECON26-001321 Neural Operators for Transferable Battery State-of-Health Forecasting Mohammad Alshaikh Saleh, Sertac Bayhan, Haitham Abu-Rub, Ali Ghrayeb
16:00–17:30 Salwa 1	IES Journals Information Chairs: _____ <i>IES Journals - Meeting with Editors-in-Chief and VP for Publications</i>
16:00–20:00 Salwa 3	Newbies Collaboration Chairs: _____ <i>Newbies Collaboration (Lucia Lo Bello)</i>
16:00–17:30 Online Room-1 ONLINE	Online-TT-34: Power Electronics Converters Chairs: _____ IECON26-000040 Optimal Voltage Balancing for Four-Level NPC Converters based on Direct Duty Ratio Calculation under Wide Operating Conditions Wei Xu, Jun Wang, Wenzhi Zhou, Xibo Yuan, Yonglei Zhang, Shushu Zhu, Zhaobo Zhang, Kun Wang IECON26-000845 Optimal Sizing of Voltage Source Rectifiers for High-Power Hydrogen Electrolysis Plants to Comply with New Demand Grid Codes Javier Beaumont, Ernesto Barrios, Álvaro Iribarren, Ianko Valero, Alfredo Ursúa, Pablo Sanchis IECON26-000088 Input Pulse Optimization for Smooth Load Transitions in SPSM-PFC Circuits via Perturbation-Based Constraint Relaxation Chikako Nakayama, Tomoki Emmei, Shinya Toyodome, Kazunori Hatakeyama IECON26-000089 An Underwater WPT System With Integrated Magnetics for Multiple Charging Voltages Yuhao Liu, Zhilei Yao IECON26-000247 Optimization Based Adaptive Control of Grid-Forming Inverters for Oscillation Mitigation in Strong Grids Milad Darmiani, Alireza Mehrzad, Chun-Lien Su, Nabil Mohammed IECON26-000544 EKF-Based Online Estimation of Equivalent Resonant Inductance and Resonant Frequency for CLLC Resonant Converters Hee-Jeong Seon, Hyun-Gyu Koh, Yeong-Jun Choi
16:00–17:30 Online Room-10 ONLINE	Online-TT-35: Industrial Informatics, Cloud Computing, Big Data Chairs: _____ IECON26-000617 A Cross-Analysis Framework of EGMS InSAR and Mobile LiDAR for Railway Embankment Deformation Monitoring Fakhreddine Ababsa IECON26-000222 A Hierarchical Anonymization Method for Photovoltaic Sensitive Data Based on Weighted Clustering and Reversible Mapping Jilong Zhou, Dan Zhang, Yilian Zhang <i>continues on next page ►</i>

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16:00–17:30 Online Room-10 ONLINE cont'd	<i>Online-TT-35: Industrial Informatics, Cloud Computing, Big Data · continued</i> IECON26-000292 Multistage Co-occurrence Slotting with Alternating Optimization for Category-Constrained Warehouses Shuhei Kamiya, Naoki Hattori, Kazuya Okamoto, Norihiko Kato, Takuto Sakuma, Shohei Kato IECON26-000325 NEXUS: A Multi-Agent Agentic Workflow for Valid SysML v2 Model Generation from Unstructured Industrial Documentation Oscar Berg, Christoph Klaassen IECON26-000357 Protocol-Corrected PHM OOD Detection with a GDN-Anchored Auxiliary-View and Spectral Hybrid Li-Ming Zhan, Yu Cheng, Dongdong Lv IECON26-000373 A Modular Ontology Design for Attribute-Level Traceability Across Engineering Documents in Process Engineering Yizhi Wang, Chengkai Shen, Joseph Alterbaum, Bowen Chen, Tobias Kleinert, Birgit Vogel-Heuser
16:00–17:30 Online Room-11 ONLINE	Online-TT-36: Communications for Industrial and Factory Automation Chairs: _____ IECON26-000642 Evaluating Medical-Image Pre-training for Industrial Defect Detection: A Cross-Domain Transfer Learning Study Shabnam Sadeghi Esfahlani, Jason Taylor IECON26-000758 CQF Resource-Aware Access Planning for New Terminal Integration in Industrial TSN Networks Yang Zhu, Yingxiu Chen, Maoqi Zuo, Yuchao Chen, Yanzhou Zhang, Cailian Chen IECON26-000788 Carrier-Based Deterministic Protocol Conversion for Heterogeneous Industrial Networks Maoqi Zuo, Yingxiu Chen, Lei Xu, Yang Zhu, Xinpeng Guan, Cailian Chen IECON26-000904 A Systematic Naming Convention for a Unified Namespace in a Real-World Production System Simon Neckenig, Wolfgang Kiess, Hendrik Solscheid IECON26-000984 Residual Observability and Attack Detectability in Encrypted OPC UA Traffic Song Son Ha, Florian Foerster, Henry Beuster, Eduard Zeller, Dominik Merli, Gerd Scholl IECON26-001132 Fail-Fast Modbus: Preventing Cryptographic Exhaustion in Real-Time CPS Dimitrios Serpanos
16:00–17:30 Online Room-12 ONLINE	Online-TT-37: Electronic Systems on Chip and Embedded Systems Chairs: _____ IECON26-001113 Inter-Step PWM Interpolation for Real-Time FPGA Simulation: A 1 MHz Buck Converter Case Study Kevin Garbier, Nader El Zarif, Mostafa Amer, Tarek Ould-Bachir, Yvon Savaria IECON26-000674 Practical Hardware Software Realization of KalmanNet for Embedded SOC/SOH Monitoring Islam Sayed, Yousef Mahmoud IECON26-000941 FPGA-based Implementation of INT8 Fast-SCNN and Performance Evaluation of Drivable Region Segmentation Min Kwon Choi, Hobin Oh, Hyeonjin Sim, Seung Wook Oh, Seung Woo Park, Jae Jeon IECON26-001008 HLS-Based FPGA Implementation of a Kalman-Based Estimator for Real-Time Induction Heating Load Identification Óscar Lahuerta, Lydia Virto, Claudio Carretero, Denis Navarro, Jesus Acero <i>continues on next page ►</i>

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16:00–17:30 Online Room-12 ONLINE <i>cont'd</i>	<i>Online-TT-37: Electronic Systems on Chip and Embedded Systems · continued</i> IECON26-000662 Narrowband FxLMS-Based Tach-Synchronized Feedforward Cancellation for LDO PSRR Enhancement in Rotorcraft HUMS Van Huy Phuong, Ngoc Tuyen Dao, Vu Hop Tran, The Anh Nguyen IECON26-000832 Zenoh-Pico on an Automotive ZCU-Class Cortex-M7: A Measured Real-Time Deployment Envelope Seung Uk Son, Youngsoo Do, Sung Bhin Oh, Jae Jeon
16:00–17:30 Online Room-13 ONLINE	Online-TT-38: Power Electronics Converters Chairs: _____ IECON26-000851 Comparative Evaluation of DC-DC Converter Topologies for Future Medium-Voltage More-Electric Aircraft Propulsion Systems Shashank Panikkar, Ishita Biswas, Florian Floh, Manuel Passler, Markus Makoschitz IECON26-000919 A Reconstructed SVM Strategy for Four-Mode Dual-Source Inverters with Reduced Switching Losses Javad Ebrahimi, Fatemeh Nasr Esfahani, Neeraj Suri, Xiandong Ma, Suzan Eren IECON26-000839 Equivalent-Flux Model Predictive Pulse Pattern Control for LC-Filtered Asymmetrical Six-Phase PMSM Drives Yang Zhao, Chee Shen Lim, Huiqing Wen, Chao Long IECON26-001056 BO-Optimized CNN-LSTM for Switch Fault Diagnosis of Multiphase Drives and Its Physical Interpretation Yukun Zheng, Yang Zhao, Chee Shen Lim IECON26-000985 Analytical Design Constraints for Two-Stage Three-Terminals Multibeam Klystron Converter Vinod Kumar Yadav, Andrii Chub IECON26-001819 Lightweight Convolutional Neural Network for Multiclass PCB Surface Defect Classification Muhammad Hammad, Nour Morsi, Mostafa Farrag, Shady Khalil, Amira Mohammed, Mohamed Khedr
16:00–17:30 Online Room-14 ONLINE	Online-TT-39: Renewable Energy and Energy Storage Systems Chairs: _____ IECON26-001445 Continuous-Control-Set Model Predictive Control With RBF-Based Velocity Prediction for Maximum Power Point Tracking of a Point-Absorber Wave Energy Converter Li Wang, Hongyu Zhao, Lixun Zhu, Lichang Yao, Bo Li, Xin Jin IECON26-001849 A Parallel Hybrid LSTM-XGBoost Architecture for Short-Term Photovoltaic Power Forecasting on the PVOD Dataset Abbas Babaei Birag, Sasan Azad, Hamidreza Arasteh, Anand Rajendran, Josep Guerrero, Sanjeevikumar Padmanaban IECON26-001896 Thermal Performance of GNP, NiFe₂O₄, and Hybrid Nano-Enhanced PCMs in a Simulated Battery Thermal Management System Irem Karaaslan, Coskun Yuksel, Tayfun Menlik, Furkan Bugra Oztaskin IECON26-001825 Beyond Leakage-Current Compliance: A Safety Perspective on the Future of Transformerless EV Charging Chinmaya Joshi, Gaurang Vakil, Saul Lopez Arevalo IECON26-000670 A Fractional Power Controlled PV-Battery Architecture for Stable Grid-Forming Transition Afaq Hussain, Jahangir Hossain, Amad Hussain IECON26-001729 CommunityGuard-AI: Agentic AI for Cyber-Physical Defense of Energy Communities Alaa Selim, Junbo Zhao, Maanat Bhadani

16:00–17:30 Online Room-15 ONLINE	Online-TT-40: Control Systems and Applications Chairs: _____ IECON26-001521 SCM-Guided Adaptive SMC with Causal Gain-Adaptive Boundary Layer for PMSM Drives in Industrial Robotic Servo Systems Balasriram Kodi, Joyjit Mukherjee, Sandhya Gudipati, Abhishek Sarkar IECON26-001565 Prescribed-Time Bipartite Leader Tracking of Multi-Agent Systems via Predictor-Based Dynamic Event-Triggered Control Meilin Li, Kai Zhang IECON26-001591 Robust Locomotion of Biped Robot with Guaranteed Joint Tracking Boundedness Shengzeng Zhang, Xinggao Liu, Michael Basin, Ruojing Liu, Junhao Zhang, Xiongxiang He IECON26-001640 FIR Approach to Data-Driven Prediction and Its Application to Data-Driven Control for MIMO Systems Yu Oyama, Osamu Kaneko IECON26-001756 Automatic Parking with Radar-Based Vacant Spot Detection and Systematic Path Planning Darsh Parikh, David Taylor IECON26-000094 Adaptive Prescribed-Time Control of Uncertain Robotic Manipulators with Prescribed Performance Constraints via Barrier Lyapunov Functions Jianmin Wang, Hongxu Zhang
16:00–17:30 Online Room-16 ONLINE	Online-TT-41: AI Applications in Control, Mechatronics, and Robotics Chairs: _____ IECON26-001732 A Modular Framework for Cooperative AI-based Target Tracking using Autonomous Quadcopters Suruz Miah, Isaiah Chism IECON26-001527 MA-OBJNAV: A Multi-Agent Semantic Memory Framework for Open-Vocabulary Object Navigation in Industrial Environments Jingheng Yan, Jiabao Dong, Lingyuan Yang, Lei Ren IECON26-001560 Long-Range Robotic Perception through Fusion of Time-of-Flight Depth and AI-Based Metric Depth Aayush Shah, Sunil Kumar, Sagar Dhatrak IECON26-001569 Perception or Policy: Sub-Task Failure Attribution in Sub-Millimeter-Clearance Robotic Assembly Yejun Gu, Zhiyuan Yang, Haiyue Zhu, Jingbing Zhang, Jun Liu IECON26-001670 An Open-Source Low-Cost Edge-Based IoT Architecture for Distributed Network Telemetry Fleets José Pablo, Jaime Gómez IECON26-001679 A Systematic Review of AI, IoT, and GIS Integration in Field Operations Management Platforms Norah Alfaleh, Shaikhah Aldossary, Nora Alsunaid, Omar Alyamani, Turki Andous, Reem Assiri, Jory Sulayhim, Sumyah Aljameel, Eman Alzayer, Tamara Basfar
16:00–17:30 Online Room-2 ONLINE	Online-TT-42: Electric Machines and Industrial Drives Chairs: _____ IECON26-000032 Experimental Analysis of Stator Fault Effects in a Reconfigured Triple-Stator Induction Motor Using an Unmodified Rotor Abdulrahman Alharbi, Shafiq Odhano, Fajer Alelaj, Barrie Mecrow, Andrew Smith <i>continues on next page ►</i>

16:00–17:30 Online Room-2 ONLINE cont'd	<i>Online-TT-42: Electric Machines and Industrial Drives · continued</i> IECON26-000193 Ferrite-Assisted Segmented Switched Reluctance Motor for High Torque Density and Low Ripple Neethu S, Saptarshi Dey, Anchal Saxena, Baylon Fernandes IECON26-000264 Multiphysics Design of Six-Degree-of-Freedom High-Temperature Superconducting Hybrid Maglev Linear Motor Koichi Matsuda, Xueying Ma IECON26-000265 Control of a Dual-Inverter Five-Phase OEW IPMSM Vahe Seferian, Jean Sawma, Flavia Khatounian, Eric Monmasson IECON26-000276 Experimental Investigation of Rotor Design Effects on Fault-Tolerant Control of a Triple-Stator Induction Motor Abdulrahman Alharbi, Shafiq Odhano, Andrew Smith, Fajer Alelaj, Barrie Mecrow IECON26-000802 Modified Model Predictive Control with Integral Compensation for High-Precision Speed Control of BLDC Motors in Industrial Automation Vijayakumar Gali, Jagadeesh Kumar Juturi, Hema Janga, Shady Khalil, Nitin Gupta, Kunal Bhatt, Luis Fernando Costa Alberto
16:00–17:30 Online Room-3 ONLINE	Online-TT-43: Renewable Energy and Energy Storage Systems Chairs: _____ IECON26-000233 Data-Augmented Hybrid CNN-BiLSTM-RF Model for State of Charge Estimation of Valve-Regulated Lead-Acid Batteries Chuanxin Fan, Yanfu Liu, Yuxuan Wen, Yi Wang, Chunfei Gu, Xinxiang Tian IECON26-000306 Vibration Energy Harvesting Using Piezoelectric Materials: Experimental Validation and George Washington Bridge Case Study Shabtay Bilu, Daniel Stoller, Emanuel Simantobov, Matan Cohen IECON26-000344 Physics-Informed Neural Network with Capacity-Balance and Jump-Suppression Constraints for State-of-Charge Estimation Kai Jia, Linhui Zhao, Yian Wei IECON26-000393 A Hybrid Active-Passive Approach for Broadband Online Electrochemical Impedance Spectroscopy of Li-ion Batteries Aryan Chollera, Woongkul Lee, Byunghoo Jung IECON26-000402 Local Conformal Calibration for Reliable Short-Term Probabilistic PV Power Forecasting Saloni Dhingra, Giambattista Gruosso, Giancarlo Storti Gajani, Luca Daniel IECON26-000427 Lithium-Ion Battery Temperature Estimation Method Incorporating Initial Temperature Correction Hangkai Zhang, Siyu Cheng, Renchong Yang, Xuliang Zhang, Yuhao Wu, Jinlei Sun
16:00–17:30 Online Room-4 ONLINE	Online-TT-44: Transportation Electrification and Automotive Technologies Chairs: _____ IECON26-000109 Low-Dropout Regulator Modeling for Bulk Current Injection Simulation Christoph Brillinger, Herbert Hackl, Jose Romero Lopera, Richard Gruenwald, Martin Stoiber, Bernhard Auinger IECON26-000290 Modular Ultra-Fast EV Charging System: An Interleaved-Based DC-DC Power Stage Vitor Monteiro, Riccardo Mandrioli, Mattia Ricco, Joao Martins, Joao Afonso IECON26-000364 Modelling, Operation, and Planning of Vehicle-Integrated Photovoltaic Systems: A Review I Safak Bayram, Mohammed Qais, Stuart Galloway, Hugo Morais <i>continues on next page ►</i>

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16:00–17:30 Online Room-4 ONLINE <i>cont'd</i>	<i>Online-TT-44: Transportation Electrification and Automotive Technologies · continued</i> IECON26-000045 GQAT-Head: A Head-Level Enhancement for Small and Tiny Object Detection in Low-Altitude UAV Monitoring Rui Liu, Jiayan Zhang, Chengzhao Shan, Yongkui Ma IECON26-000487 Coordinated Charging and Battery-Swapping Scheduling for Battery-Electric Vessels under Sailing-Time and Energy Uncertainty Hanqing Yang, Wenyang Ma, Yue Long, Tieshan Li IECON26-000943 Hidden Markov Model-Based GNSS Map Matching Subhojit Mandal, Chintha Vishnu Vardhan, S. Vasantha Kumar, Lelitha Devi Vanajakshi
16:00–17:30 Online Room-5 ONLINE	Online-SS-27: Cybersecurity Frameworks for Modern Power Systems: Threats, Resilience, and Intelligent Defence Chairs: _____ IECON26-000073 An Adaptive Graph Neural Network with Dynamic Edge Learning for Real-Time Cyberattack Detection in IoT Networks Richa Sharma, Sunny Sharma, Charanjit Singh, Prabjot Kaur, Gautam Srivastava IECON26-001580 Duck-Duck-No-Goose: Slow-Drift Threshold Poisoning of Adaptive Anomaly Detection in Digital Substations Eman Hammad, Lewis Heuermann IECON26-001633 Integrated Detection and Active Mitigation of Bidirectional FDI Attacks in BESS OT/IT Systems Jesse Zarmai, Robert Cox, Ehab Shoubaki IECON26-000796 LLM Guided Cyber Physical Attack Path Identification in Smart Grids Amr Elshazly, Jesse Roberts, Rachad Atat, Muhammad Ismail IECON26-000894 High-Fidelity Honeypots for Rooftop PV Inverters Based on Real-Time Dynamics Simulations Akula Sathvick, Pratyush Poudel, Sarasij Das IECON26-000926 A Cross-Dataset Approach Leveraging Lightweight Machine Learning Modeling for GOOSE Attack Detection Michelle Da Luz Rodrigues, Altair Santin, Luiz Nacamura Jr
16:00–17:30 Online Room-6 ONLINE	Online-TT-45: Mechatronics and Robotics Chairs: _____ IECON26-000980 Communication-Aware 3D Frontier Exploration for UAV Swarms in Urban Environments Tianji Zheng, Yong Chen IECON26-000142 A Zonotopic Observer for Robust State Estimation of Twisted-Coiled Polymer Actuators Jannis Dethmann, Paolo Mercorelli IECON26-000175 An Adaptive Self-Organizing Map based Near-Optimal Grasping Sequence Plan Algorithm for Apple Harvesting Robot Zhihui He, Zhouxing Xie, Zheng Qian, Umair Javaid, Li Zhang IECON26-001430 MHE-MPC Framework for Bipedal Robot Stable Locomotion Control Heng Yang, Liang Yang, Yong Chen IECON26-000301 Design of a Leader Follower Robot Hand with Improved Cross Structure for Bilateral Control Marika Matsumura, Naoki Motoi IECON26-001052 Design and Data-Driven Control of Hydraulic Tendon-Driven Mechanisms for MRI-Conditional Surgical Robots Arshia Akbari, Boshen Qi, Kaixiang Zhang, Zhaojian Li, Erfan Nozari, Jun Sheng

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16:00–17:30 Online Room-7 ONLINE	Online-TT-46: AI Applications in Control, Mechatronics, and Robotics Chairs: _____ IECON26-000804 Open4D: Learning to Parse 4D Point Clouds with Open Vocabularies Shuyang Yu, Xiaoqing Guan, Shuo Zhao, Yi Wu, You Wang, Guang Li IECON26-000139 Safe Reinforcement Learning for Underactuated UUV Navigation via HOCBF-Based Action Shielding Xiaochun Xu, Wei Zhang, Zhe Zhang, Wenxue Xu, Ziqi Xia IECON26-000167 Automated Resource Discovery and Software Reconfiguration in a Distributed Device Cluster João Barros, Eliseu Pereira, Gil Gonçalves IECON26-000275 A Streaming Graph Partitioning Method Using Game Tree Pruning with Deep Reinforcement Network Zhipeng Sun, Chaoze Lu, Dongdong Lv, Nan Xiong IECON26-000554 Research on 2D and 3D Shape Processing Algorithms Based on Computer Geometry Minjun Kwon, Dongho Shin, Jeongwon Kim IECON26-000482 Multi-Objective Reward Shaping for Safe and Energy-Aware Robot Navigation Steffen Ullmann, Niklas Grau, Ya-Jun Pan, Onur Toker, Abdulaziz Alhamadani
16:00–17:30 Online Room-8 ONLINE	Online-TT-47: Instrumentation, Sensors, Actuators, and Micro-Nano Technology Chairs: _____ IECON26-000016 Single-Port VNA Technique for Measuring Mutual Inductance in Coupled Coils Ananth Bharadwaj IECON26-000146 Lightweight and Verifiable Privacy-Preserving Localization Using CRT-Based Compression and Zero-Knowledge Proofs Chengzhi Zeng, Dongdong Lv, Shengming Chang IECON26-000183 Privacy-Preserving Indoor Localization Using Dual-RIS Phase Randomization with a Single Anchor Node Shengming Chang, Xiang Le, Dongdong Lv, Tuozhong Yao IECON26-001344 Design of a Photonic Crystal Nanobeam Cavity Sensor for Bacterial Trapping and Sensing Le Shen, Guolin Yin, Peihong Cheng, Zhijian Jia, Ping Yu, Shaoping Wang IECON26-001731 A Digital-Twin-Enabled Multimodal End-of-Line Inspection System for Automotive Rotors Victor Coch, Gabriel Rocha De Souza, Mateus Pinto, Nelson Duarte Filho, Rafaella Quaresma Lourenço, Eder Mateus Gonçalves, Marcelo Malheiros, Eduardo Borges, Marcelo Pias, Vinicius Oliveira IECON26-000281 Benchmarking Classical and Deep Learning Methods for Direction-of-Arrival Estimation in Acoustic Drone Localization Christian Baker-Davidson, Rakiba Rayhana, Sergii Baidachnyi, Lixin Tu, Hao Liu, Yihe Wang, Zheng Liu
16:00–17:30 Online Room-9 ONLINE	Online-TT-48: Signal & Image Processing Methodologies Chairs: _____ IECON26-000028 Time Series Imputation by Deep Interpretable Self-Supervised Autoencoders Hendrik Klopries, David Orlando Salazar Torres, Muhammad Ashraf, Andreas Schwung <i>continues on next page ►</i>

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16:00–17:30 Online Room-9 ONLINE <i>cont'd</i>	<i>Online-TT-48: Signal & Image Processing Methodologies · continued</i> IECON26-000490 Orientation-Aware Container Code Recognition in Unconstrained Port Environments Luca Barboza Mendonça, Rodrigo De Bem, Eduardo Nunes Borges, Jean Alves, Vagner Santos Da Rosa, Fabiano Sandrini Moraes, Théo Corvello Soares, Maiara Cariolick, Denise Valeria Velarde Mamani IECON26-000051 Compact-BoF: A Modular Residual Architecture for Efficient and Interpretable Time Series Analysis on the Edge David Orlando Salazar Torres, Diyar Altinses, Andreas Schwung IECON26-000095 Machine Learning-Enabled Channel Classification for RGB Underwater Visible Light Communication Eithar Alammari, Mohammed Abdul Majid IECON26-000137 HGSR: Hierarchical 3D Gaussians for Sparse-View CBCT Reconstruction Wenli Huang, Feifei Wei, Liyan Qiu, Zhongyun Bao, Jixin Wang, Ye Deng IECON26-000181 LGGS:LiDAR-Guided Gaussian Splatting for Cross-Modal 3D Perception Wei Ding, Mien Van, Rajeem Thomas, Yibo Zhou
17:30	
17:30–19:00 Salwa 1	TC Meeting - 1 Chairs: _____ <i>TC Meeting</i>



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08:00		28 parallel sessions
08:00-09:30 Basir	Onsite-TT-49: Power Systems and Smart Grid	
	Chairs: _____	
	IECON26-001201	EMBGO-Tuned PID Controllers for Load Frequency Control Under Dynamic Loading and Cyber Attack Induced Packet Loss Subhajit Roy, Dulal Chandra Das, Nidul Sinha, Mohammad Tayyab, Syed Amrr, Suhail Hussain
	IECON26-001225	Impact of K-factor-Based Current Injection Control on Critical Clearing Time Under Various Renewable Resource Penetration Levels Omid Abdoli, Selma Khalid Elhaj Awadallah
	IECON26-001234	Hierarchical Consensus-Based Algorithm for Large Scale Economic Power Dispatch in Smart Grids Mounira Hamdi, Lhassane Idoumghar
	IECON26-001376	AI-Assisted Future-Horizon Dynamic Response Prediction in Power-Electronic Systems Harsha Vardhan Reddy Modugu, Uzair Asif, Amirhosein Gohari Nazari, Mohammad Shadmand, Sudip Mazumder
	IECON26-000067	DNN-Assisted Adaptive Backstepping Terminal Sliding Mode Control for DC Microgrid Voltage Regulation Waleed Hamanah, Abdullah Baraeen
08:00-09:30 Nakhil	Onsite-TT-50: Power Electronics Converters	
	Chairs: _____	
	IECON26-000156	Deep Reinforcement Learning-Based EMS Using Deep Deterministic Policy Gradient for Offshore Hybrid Marine Docking Platform Youcef Belkhier, Hao Chen, Gang Yao, Abdeslam Mamoune, Mohamed Benbouzid
	IECON26-001193	GaN HEMT power module thermal model with thermal couplings taken into account Paweł Gorecki
	IECON26-001314	Influence of passive components properties on overcurrents and overvoltages in SEPIC converter Krzysztof Górecki, Kalina Detka
	IECON26-000690	Risk-Aware and Stress-Conditioned Evaluation of Photovoltaic Power Forecasting Models for Grid Deployment Prince Aduama, Ruosi Kong, Ameena Al-Sumaiti, Khalifa Al-Hosani
	IECON26-001614	A Single-Source Six-Level Boost Inverter: Topology, and Performance Evaluation Md Reyaz Hussan, Md Shafiullah, Marif Daula Siddique, Muhammad Ahmad
08:00-09:30 Room - PR4	Onsite-TT-51: Electric Machines and Industrial Drives	
	Chairs: _____	
	IECON26-001719	Comparative Speed Regulation of PMSM-Driven Pumping Systems Using Intelligent Controllers Integrated with Predictive Current Control Mohamed Assaad Hamida, Ragab El-Sehiemy, Mohamed Abdelwanis, Ahmed Mashaly, Mohamed Elgohary

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08:00–09:30 Room - PR4 <i>cont'd</i>	<i>Onsite-TT-51: Electric Machines and Industrial Drives · continued</i> IECON26-001785 Comparative Analysis of Stator Flux Ripple in Five Phase Induction Motor Drives Using Conventional Space Vector PWM and Bus Clamping PWM Rajeevan P P, Jyothi Krishna K V IECON26-001296 A Compact Hardware-Aware Neural Network for Robust Inverter Fault Diagnosis in PMSM Drives Jiaqin Sun, Liangshuo Liu, Jim Greer, Giampaolo Buticchi IECON26-001803 Resilient Battery State Estimation Under Modeling Errors using Observer-Assisted Transformer Muhammad Saeed, Hafiz Muhammad Jawaad, Sheraz Shahid Tabassum, Jiani Shen, Yijun He IECON26-000359 Research on a Novel Compact-axial-size Unidirectional-axial and Radial Hybrid Magnetic Bearing Yifan Ren, Jing Ou, Zhuojun Li, Yingzhen Liu, Dawei Liang, Xu Wang, Dianguo Xu IECON26-001079 Resilience Assessment of Long-term Performance Degradation and Failure Mechanisms of Grid-Connected PV Systems in Desert Climates Amir Abdallah, Mohammad Altamimi, Mohamed Elgaili, Mohamed Abdelrahim, Maulid Kivambe
08:00–09:30 Room - PR5	Onsite-TT-52: Renewable Energy and Energy Storage Systems Chairs: _____ IECON26-000410 Machine-Learning-Assisted Screening of MgAlH₃ Perovskite Nanoparticles for Hydrogen Storage in Future Energy Systems Mustafa Kurban, Erchin Serpedin, Hasan Kurban IECON26-001720 Impact of Residential Photovoltaic Self-Consumption and Energy-Sharing Strategies on Distribution Transformer Aging Pedro Pereira, Joao Martins, Margarida Pereira IECON26-001880 A Review of Low-Voltage Ride-Through Strategies in Grid-Connected PV Inverters Abdelbasset Krama, Abdellatif Hussine IECON26-001280 Spectral Observability-Based Optimal PMU Placement for Sub-Synchronous Oscillation Detection in Renewable-Dominated Power Systems Abdelaziz Abuelrub, Muhammad F. Umar, Sertac Bayhan, Ali Ghrayeb IECON26-001891 Coolant Admissibility and Cell Arrangement for Immersion-Cooled Battery Thermal Management Anas Karaki, Abdul Wadood Fathah, Sertac Bayhan IECON26-001698 Integrated Electrical and Financial Modelling of Residential Photovoltaic Systems: A Case Study for Qatar Fatima Hassan, Khaled Abedrabbah, Luluwah Al-Fagih
08:00–09:30 Room - PR6	Onsite-TT-53: Control Systems and Applications Chairs: _____ IECON26-000026 Co-Simulation and Validation Framework for Deep Reinforcement Learning Enabled Grid-Interactive Efficient Buildings Aya Amer, Sertac Bayhan, Haitham Abu-Rub, Mehrdad Ehsani IECON26-000621 Ecological Acoustic and Contact Safe Maneuvering of Autonomous Underwater Vehicles Mahdi Jafarpour, Nader Meskin, Saleh Mobayen, Chian Ho IECON26-001413 Optimized Design of Non-Integer ADRC Speed Control for PMSM Using Marine Predator Algorithm Mokhtar Aly, Mahmoud S. R. Saeed, Ahmed Elsanabary, Ahmed Shawky, Ahmed Abouzeid, Mohamed Abido, Abdallah Kouzou, José Rodríguez <i>continues on next page ►</i>

08:00–09:30 Room - PR6 <i>cont'd</i>	<i>Onsite-TT-53: Control Systems and Applications · continued</i> IECON26-000647 Risk-Informed Autonomous Overtaking in Mixed Traffic: Integrating Graph-Based Risk Assessment into Reinforcement Learning Ahmed Riahi, Adam Hamadi, Joachim Grimstad, Andrey Morozov, Nader Meskin IECON26-000027 Tracking-Error-Bounded Nonlinear Control for Overhead Cranes Involving Load Lowering Shengzeng Zhang, Xinggao Liu, Michael Basin, Zhu Haiyue, Chentao Han, Xiongxiang He IECON26-000072 Hierarchical Parameter Configuration for Coordinated Dual-Axis Servo Operation Under Multiple Performance Constraints Meihe Cao, Ziling Nie, Kai Yang, Jun Sun, Yangwei Zhou, Jialin Li
08:00–09:30 Room - PR7	Onsite-TT-54: Industrial Informatics, Cloud Computing, Big Data Chairs: _____ IECON26-000238 ARID: A Deployable Edge AI System for Structured Information Extraction from Industrial Maintenance Work Orders Kuanlin Chen, Chen-Wei Kuo IECON26-000242 Global Ranks Survive, Selected Heads Shift: BOS-Sink Topology under 4-bit Weight-Only Quantization Kuanlin Chen, Chen-Wei Kuo, Cheng-En Ou IECON26-000563 On the Use of Digital Twin as a Testbed for LLM Agents in Industrial Automation Francesco Biondani, Sebastiano Gaiardelli, Luigi Capogrosso, Franco Fummi IECON26-000744 RLG-MoR: MicroKG-Guided Recursive Reasoning for Industrial Control Logic Tracing Xu Guo, Runjie Shen, Jianfei Zhu, Ke Shi IECON26-001098 Physics-Guided Digital Twin for Power-Based Anomaly Detection in Industrial Robots Muhammad Uddin, Jörg Walter, Michele Lora, Davide Cannizzaro, Davide Maria Gatta, Franco Fummi IECON26-001190 Evidence-Aware Engineering Document Extraction for AAS-Ready Process Automation Data Bowen Chen, Benedikt Schmetz, Torben Miny, Tobias Kleinert, Birgit Vogel-Heuser
08:00–09:30 Room - PR8	Onsite-TT-55: Electronic Systems on Chip and Embedded Systems Chairs: _____ IECON26-000075 A Modular Smart E-Waste Kiosk for Automated Collection and Sorting Aya Nabil Sayed, Tala Jano, Md Mosarrof Hossen, Ridha Hamila, Faycal Bensaali, Farid Touati, Iraklis Varlamis IECON26-000169 Dual-Core Defense: A Neuro-Symbolic Generative Framework for Automated Detection of Zero-Day Hardware Vulnerabilities in SoC Designs Ahmed Bensalah, Mohammed Yasmine Abid IECON26-000379 Quantized TinyYOLOv3 Deployment on Low- Resource FPGA Platforms Using FINN Antonio Ventoso Dean, Alexis Menéndez Vázquez, Carlos Castellano Jacob, Andrea Quintans Fernandez, Roberto Fernandez-Molanes, Carlos Gonzalez Val, Juan J. Rodriguez-Andina, José Fariña Rodríguez, Mhd Rashed Al Koutayni IECON26-000705 Fully Automated Hardware-in-the-Loop Validation of a Buck Converter Controller Nader El Zarif, Mostafa Amer, Yvon Savaria, Ahmad Hassan IECON26-000847 Online Time-Step Adaptation for FPGA-Based HIL Simulation of Power Converters with Variable Switching Frequency Iraitz Carretero Caballo, Lander Lejarza <i>continues on next page ►</i>

08:00–09:30 Room - PR8 cont'd	Onsite-TT-55: <i>Electronic Systems on Chip and Embedded Systems</i> · continued IECON26-001133 Hardware-Resident IEC-104 Intrusion Detection: FPGA Feasibility Under Realistic Prevalence and Domain Shift Heinrihs Skrodels, Andrejs Romanovs
08:00–09:30 Room - PR9	Onsite-SS-28: Design, Control and Fault Detection of Power Converters for Energy Storage and EV Charging Systems Chairs: _____ IECON26-001590 An Air-Gapped Neuro-Symbolic Framework for Autonomous Root Cause Analysis in Commercial Chillers Tanishq Singh Sisodiya, Sai Prashanth Mallellu, Rajanikanth Aluvalu IECON26-000131 SALT-ASC: An Authenticated Stateful Channel for Secure Data Exchange in Industrial Control Systems Marko Slunjski IECON26-001383 Embedded Coral-Health Classification on Jetson AGX Orin: Accuracy Latency Tradeoffs of Transfer-Learned CNNs Andrea Canaria, Thea Lorraine Daniel, Ameen Zarif, Mohammed Al Mansoori, Khalid Almansouri, Mohammed Al-Meraikhi, Ali Al Seari, Rabab Benotsmane, Morcos Metry IECON26-000191 Supervising Reinforcement Learning with Large Language Models: A Hierarchical LLM-RL Approach for V2G Microgrid Control Adam (Hossein) Adib Behrooz, Di Wu, Lyne Woodward, Arezki Merkhoul, Kamal Al-Haddad IECON26-000356 A Novel Control Algorithm For DAB-Based Wireless Power Transfer Systems Under Non-Resonant Operation Afaf Dagher, Jean Sawma, Hadi Kanaan IECON26-000588 LLM-PPO Framework for Runtime-Adjustable BESS Dispatch in Grid-Connected Microgrids Adam Adib, Di Wu, Lyne Woodward, Arezki Merkhoul, Kamal Al-Haddad
08:00–09:30 Salwa 1	Onsite-TT-56: Power Electronics Converters Chairs: _____ IECON26-000381 A Comprehensive Review of Inverter and Rectifier Topologies for Inductive Wireless Power Transfer Systems Md Ashraf Ali Khan, Bhaskar Kafle, Sheldon Williamson IECON26-000896 Comparative Investigation of Coil Structures and Compensation Topologies for Efficient and Misalignment-Tolerant Wireless EV Charging Md Ashraf Ali Khan, Sanjida Moury, Sheldon Williamson IECON26-000205 State of Charge and State of Energy Estimation in Renewable Microgrids using Graphical Neural Network Approach Kundan Kumar, Vikram Kumar Saxena, Benjamin A Shimray, Vivek Bhatt, Sanjeet Kumar Dwivedi IECON26-000990: "A New High Step-Up DC-DC Converter Based on Voltage-Boost Cells and a Z-Network Cell", Shahriar Haji, Ebrahim Babaei, Deniz Zargariafshar, Vida Ranjbarizad IECON26-001134: "Synthetic Inertia and Fast Frequency Support from Variable-Speed Wind Turbines: A Review of Control Methods, the Energy-Recovery Trade-off, and Open Challenges", Mohamad Hamoud, Lazhar Ben-Brahim, S M Mueen IECON26-001611: "Refining the Boost Converter Topology While Preserving Key Performance Characteristics", Reza Sharifi Shahrivar, Hossein Gholizadeh, Lazhar Ben-Brahim
08:00–09:30 Salwa 2	Onsite-TT-57: Post Journal Session Chairs: _____ IECON26-PJ031 Ethernet POWERLINK for Reconfigurable Robotics: Teaching an Old Fieldbus New Tricks Alexey M. Romanov

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08:00–09:30 Salwa 2 <i>cont'd</i>	<i>Onsite-TT-57: Post Journal Session · continued</i> IECON26-PJ046 Integration of Grid-Forming and Grid-Following Characteristics for Grid-Connected Inverters Yihao Zhu, Hongda Cai, Yanghong Xia, Wei Wei, Yongzhi Zhou IECON26-PJ020 A New Five-Phase Inverter Topology With Reduced Common-Mode Voltage Kotb B. Tawfiq, Hatem Zeineldin, Ahmed Al-Durra, And Ehab F. El-Saadany IECON26-PJ043 Finite-Time Prescribed Performance Fault-Tolerant Attitude Control for Rocket Substage Recovery by Parafoil Xiaojun Xing, Wenxin Yang, Linfeng Qin, Bing Xiao, Feisheng Yang
08:00–09:30 Salwa 3	Onsite-TT-58: Post Journal Session Chairs: _____ IECON26-PJ047 High-throughput uniform scanning of stick-slip actuators with optimal smooth trajectory Xiangyuan Wang, Lingwen Tan, Qi Yu, Hao Wu, Yixuan Meng, Linlin Li, Hu Huang, Limin Zhu IECON26-PJ023 A New SVPWM for a Hybrid-Level Three- Phase Inverter for Common Mode Voltage Mitigation Kotb B. Tawfiq, Hatem Zeineldin, Ahmed Al-Durra, And Ehab F. El-Saadany IECON26-PJ037 Zero Speed Sensorless Scheme for PMSM Drives Using Virtual Flux Signal Injection Based Hybrid Active Flux Observer Tong Jin, Wei Sun, Guoqiang Zhang, Gaolin Wang, Dong Jiang, Dawei Li, Dianguo Xu
08:00–09:30 Online Room-1 ONLINE	Online-TT-59: Power Systems and Smart Grid Chairs: _____ IECON26-001777 An Efficient Partial Power Converter for Battery Integration in Multilevel Modular Converter with Grid Frequency Ripple Rejection Neelesh Yadav, Niwton Gabriel Feliciani Dos Santos, Andrii Chub IECON26-001118 Comparative Financial Assessment of Conventional BESS, Shared Energy Storage, and Energy Storage as a Service Models for Small-Scale Enterprises Oğuzhan Karaağaç, Erdal Bekiroglu, Uğur Fesli IECON26-000248 A Multi-Expert System for Short-Term USEP Forecasting in a Non-Stationary Electricity Market Ye Mou, Kang Lai, Mingyu Zhang, Wei Hu IECON26-001420 Joint CLR ESR Dispatch of a Co-Located Data Center and Battery Storage System in Electric Reliability Council of Texas Viswamithra B, Pratyush Chakraborty IECON26-000627 Impact of PV Panel Blocking Diodes on DC-side Temporary Over-Voltages of Central Grid Following Inverters During Fault Recovery H R Sai Kiran Pandit, Sarasij Das IECON26-000643 Control of a Hybrid Distribution Transformer with a BESS for Circulating Active Power Flow Support Alvaro Carreno, Luis Ignacio Martinez Caballero, Jan Danisiewicz, Mariusz Malinowski, Marcelo Perez, Zhihong Zhao
08:00–09:30 Online Room-10 ONLINE	Online-TT-60: Cyber-Physical Systems and Internet of Things in Industry Chairs: _____ IECON26-000286 Topology and Multipath Routing Co-Design for Reliability Enhancement Based on IEEE 802.1CB Chenxiang Yuan, Cailian Chen, Yanzhou Zhang, Yuchao Chen, Peizhe Li, Xinping Guan <i>continues on next page ►</i>

08:00–09:30 Online Room-10 ONLINE cont'd	<i>Online-TT-60: Cyber-Physical Systems and Internet of Things in Industry · continued</i> IECON26-000571 A Temporal Neural Network-Driven Method for Predicting the Optimal Time of Software Online Update and Evolution in Industrial Intelligent Unmanned Systems Chaoze Lu, Cheng Peng, Xiaocheng Chen IECON26-001084 SDN-based Communication Reconfiguration for Distributed Control in Multi-Microgrids with Link Establishment Optimization Jingyu Hu, Yong Chen IECON26-000595 A Novel Temporal GNN-Based Intrusion Detection with Attention-Guided Attack-Path Analysis Mohamed Massaoudi, Maymouna Ez Eddin, Shady Khalil, Katherine Davis IECON26-001177 Privacy-Preserving Collaborative Localization with Decentralized Dynamic Multi-Client Functional Encryption and a Vector Compression Funnel Xizhi Yang, Dongdong Lv, Shengming Chang IECON26-000173 LVPP-Loc: Lightweight and Verifiable Privacy-Preserving Localization with Homomorphic Encryption and GDOP-Based Node Selection Xiang Le, Junjie Yin, Bing Chu, Ji Li, Zhaohong Fan, Shengming Chang
08:00–09:30 Online Room-11 ONLINE	Online-TT-61: Signal & Image Processing Methodologies Chairs: _____ IECON26-000190 Bayesian Fusion for Heterogeneous Mixed Dimensional Sensing with Support Governance Charbel Karkafi, Rodin Karkafi, Ricardo Karkafi, Fadi Karkafi IECON26-000202 A Hybrid ALS-SVT Algorithm with Blockwise Nuclear-Norm Regularization for Low-Rank Matrix Completion Katsumi Konishi, Ryohei Sasaki IECON26-000213 MLB-YOLO: A Lightweight and Efficient Small Object Detection Algorithm for UAV Imagery Chengkun Xiong, Zihao Wang, Zhi Zhang, Xiaobing Shang IECON26-000278 CDDPM-MUNet: Class-Conditioned Diffusion Denoising for Medical Image Enhancement Barisha Chowdhury, Madan Mohan Saha Momit IECON26-000340 Parallel Tendency Network for Capturing Action Tempo Zijun Chen, Lonyan Wang, Jing Yang, Guanao Zhao, Zhixue Yang, Yuehai Chen, Kun Zhang IECON26-000358 Normal-Only Structured Scoring for Hard-Category Reliability in Frozen-Backbone Industrial Visual Anomaly Detection Li-Ming Zhan, Kaiying Wang
08:00–09:30 Online Room-12 ONLINE	Online-TT-62: Industrial Informatics, Cloud Computing, Big Data Chairs: _____ IECON26-000382 Fraud Detection in Blockchain Networks with Data Stream Learning Algorithms Camila Marques, Fabrício Enembreck, Edson Scalabrin IECON26-000425 SHIELD-RAG: A Three-Layer LLM Firewall for Secure Retrieval-Augmented Generation Martin Esugo, Oluwatobi Alao, Haitham Mahmoud IECON26-000430 Instrumenting Complex AI Systems in Requirements Engineering for User-specific Explanations Andreas Müller, Jonas Recker, Alexander Keuper, Günther Schuh, Christoph Legat <i>continues on next page ►</i>

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08:00–09:30 Online Room-12 ONLINE cont'd	<i>Online-TT-62: Industrial Informatics, Cloud Computing, Big Data · continued</i> IECON26-000456 Industrial-Grade Task Offloading for UAV-Assisted Mobile Edge Computing via the Integration of Reinforcement Learning and Game Theory Chaoze Lu, Roujing Wu, Yinan Sun IECON26-000518 Temporal Memory Cross-Attention Network for Carbon Flux Estimation from Multivariate Sensor Streams Gaoshan Bi, Xulong Wang, Zhipeng Yuan, Menghui Zhou, Qing Xue, Po Yang IECON26-000529 IncodeSense: AI-Powered Monitoring and Optimisation for Resource-Efficient SME Manufacturing Md Mahmudul Hasan, Mohsin Ali, Ammar Al-Bazi, Mumtahina Ahmed, Nazia Hameed
08:00–09:30 Online Room-13 ONLINE	Online-TT-63: Communications for Industrial and Factory Automation Chairs: _____ IECON26-001173 A Lightweight and Privacy-Preserving Multilateration Algorithm for Crowdsourced Localization Sunkang Lin, Shengming Chang, Davy Tsz Kit Ng, Tuozhong Yao, Na Yang, Artur Madal IECON26-001346 Bayesian-Based Multi-Agent Deep Reinforcement Learning Algorithm for Satellite Communication Resource Scheduling Wenjing Wu, Peng Song, Junzheng Wang, Dawei Shi IECON26-001365 When to Aggregate Cyclic Control Traffic on MCU-Based 10BASE-T1S Networks Minsoo Gu, Sung Bhin Oh, Seok Dong Min, Min Young Chung, Youngsoo Do, Jae Jeon IECON26-001366 Load-Triggered TAS Window Switching for Automotive Ethernet Sang Hun Shin, Youngsoo Do, Sung Bhin Oh, Chan Gyu Park, Jae Hun Kang, Jae Jeon IECON26-001734 From Uniform Thresholds to Service-Aware Link Admission in UAV Missions: A Reproducible MATLAB Study Ana Teixeira, Alessandra Vaz, Felipe Mamed, Marlon M. López-Flores, Paulo Fernando Ferreira Rosa IECON26-001800 Performance Assessment of Multi-Broker Architectures for Prioritized MQTT Luca Leonardi, Lucia Lo Bello, Gaetano Patti, Alessio Pirri
08:00–09:30 Online Room-14 ONLINE	Online-TT-64: Electronic Systems on Chip and Embedded Systems Chairs: _____ IECON26-000214 Context Save and Restore of Partial Reconfiguration Regions for MultiSLR AMD-Xilinx FPGAs Matthias Kalbitz, Marcel Eckert, Bernd Klauer IECON26-001289 An Evidence-Based Design-Stage Framework for Electromagnetic Susceptibility Risk Prioritisation in Embedded Electronic Systems Geon George Bastian, Mireya Fernández-Chimeno, Ferran Silva IECON26-001291 CogniPristine - A Context-Aware Large Language Model for Static Checks in Automotive Embedded Software Neelam Singh, Soumya Asati IECON26-001352 Logical Placement for Multi-Stream Acoustic Anomaly Detection under CIM Array Constraints Tong Zhang, Weiping Pan, Jingdi Liu, Shuqiong Zhu, Xiaotao Li, Yawen Niu IECON26-001044 A Descriptor-Driven FPGA Accelerator for Lightweight Semantic Segmentation with a Lifetime-Aware Memory Overlay Seung Wook Oh, Hobin Oh, Min Kwon Choi, Hyeonjin Sim, Seung Woo Park, Jae Jeon IECON26-000939 Hardware-Friendly Redesign of TwinLiteNet for On-Device Driving-Scene Segmentation Hyeonjin Sim, Min Kwon Choi, Seung Wook Oh, Hobin Oh, Young Hoon Suh, Jae Jeon

08:00–09:30 Online Room-15 ONLINE	Online-TT-65: Power Systems and Smart Grid Chairs: _____ IECON26-000964 Data-Driven Voltage Constraints for Aggregator Dispatch Under Partial Visibility: A Quantile Regression Approach Yacine Merrad, Seifeddine Ben Elghali, Mokhtaria Mesri IECON26-000966 A Digital DC Energy Packet Transmission System Jiang Feng, Xibo Yuan, Quanrui Liu, Ruijie Zhu, Yonglei Zhang, Kai Wang IECON26-000992 Electrical Distance-Based Node Ranking for Scalable Transmission Stability Studies Jordi Edo Puig, Jonathan Aviles Cedeno, Jose Luis Rueda IECON26-000995 Time-Dependent WECC Composite Load Model Parameterization: A Dutch Power System Case Study Jordi Edo Puig, Jonathan Aviles Cedeno, Jose Luis Rueda, Jorrit Bos IECON26-001085 Early Transient Stability Assessment Using Internal Measurements from a Grid-Forming Converter Yazan Barbar, Surour Alaraifi, Emadeldeen Eldele IECON26-000445 Performance Assessment of Frequency Estimation Algorithms for Fast Frequency Based Ancillary Services Lasse Peltonen, Tuomas Rauhala, Pertti Järventausta, Sami Repo, Pekka Koponen
08:00–09:30 Online Room-16 ONLINE	Online-TT-66: Power Electronics Converters Chairs: _____ IECON26-000879 An Active Federated Learning Method for Cross-Modulation-Resistant Fault Classification Binglei Guan, Jiechen Sun, Funa Zhou, Tianzhen Wang IECON26-000923 A Generalized Modulation Strategy for Capacitor Voltage Balancing in NPC-Based Dual Active Bridge Converters Seyed Hamidreza Mousavi Tabar, Javad Ebrahimi, Alireza Bakhshai IECON26-000927 Online Harmonic Control for Half-Wave Symmetric Harmonic Programmed Pulsewidth Modulation Iñigo Pascual, Javier Samanes, Jesus Lopez, Eugenio Gubia IECON26-001822 A Supervisory Zonal Volt/VAR Control for Distribution Networks with Limited Coordination Muhammad Usman IECON26-000962 Common-Grounded Active Switched-Inductor High Step-up Converter with Equalized Inductor Currents Motiur Reza Mohammed, Jamal Al Sawalhi, Balanathi Beig IECON26-000963 A High-Gain Single-Source Switched-Capacitor Multi-Level Inverter with Reduced Component Count Fatemeh Esmaeili, Hamid Reza Koofgar, Frede Blaabjerg
08:00–09:30 Online Room-2 ONLINE	Online-TT-67: Power Electronics Converters Chairs: _____ IECON26-000305 A Comprehensive Experimental Loss Investigation of a HERIC DC/AC Converter based on GaN FETs Vedatroyee Ghosh, Riccardo Ruffo IECON26-000321 A Dual-Input Single-Output Enhanced DC-DC Converter with High Voltage Gain for Renewable Energy Systems Mohammadparham Sobhrast, Ebrahim Babaei, Mehran Sabahi <i>continues on next page ►</i>

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08:00–09:30 Online Room-2 ONLINE <i>cont'd</i>	<i>Online-TT-67: Power Electronics Converters · continued</i> IECON26-000329 Research on Individual-Phase Virtual Synchronous Generator Control Strategy for Cascaded H-Bridge Energy Storage Systems Under Unbalanced Grid Xiaoyun Zhang, Zhao Liu, Wei Lin IECON26-000495 A Novel Single-Stage Multiport Bidirectional AC-DC Converter with Shared Inverter Legs for Wind Turbine and Battery Energy Storage Integration Sayed Erfan Shahsavargar IECON26-000513 AC-DC Talkative Power Conversion in Fly-Gen Airborne Wind Energy Systems Yang Leng, Rongwu Zhu, Yanqi Hou, Weihao Hu, Peter Hoeher, Marco Liserre, Xiqiang Chang, Tianrui Dun, Degeng Zhou IECON26-001544 From Halbach to Surface-Mounted PM Rotor: Electromagnetic Performance Evaluation and Design Trade-Offs Sarang Satheesh, Muhammad Khowja, Liya Tom, Naveen Sundaram, Gopinath Sengupta, Kuldeep Singh, Gaurang Vakil, Chris Gerada
08:00–09:30 Online Room-3 ONLINE	Online-TT-68: Electric Machines and Industrial Drives Chairs: _____ IECON26-000300 Design and Control of a Novel 6-DoF Coreless Bearingless Motor Koichi Matsuda, Xueni Peng IECON26-000302 Experimental Validation and 6-DoF Motion Control of a Compact Maglev Linear Motor System Koichi Matsuda, Jie Luo, Dizhou Nie IECON26-000407 Simplified Dual-Vector Model Predictive Voltage Control for PMSM Drives with Unified Vector Selection and Analytical Duty Ratio Solution Shulin Wang, Shuo Zhang, Xueping Li, Ying Zhou, Yue Zhao, Chengning Zhang IECON26-000423 Model-Independent Position-Sensorless Vector Control of Parallel VSI Fed High-Power Induction Motor Drives Operated at Low Switching Frequency Ashish Kumar Panda, Sourav Ghimirey, Avanish Tripathi IECON26-000376 Effect of Terminal Voltage Variation on the Iron Losses of a High Speed Solid Rotor Induction Machine Shoaib Ahmed, Lassi Aarniovuori, Janne Nerg, Jouni Ikaheimo, Ondrej Vitek, Jan Barta IECON26-000405 A Practical Design Methodology for Cascaded PI Control of Electric Drives Under Saturation Constraints Harikrishnan S, Arun Rahul S
08:00–09:30 Online Room-4 ONLINE	Online-TT-69: Renewable Energy and Energy Storage Systems Chairs: _____ IECON26-000457 Analysis and Experimental Validation of Sodium-Ion Battery Nonlinear Effects on EKF-Based SOC Estimation Elisa Irujo, Alberto Berrueta, Pablo Sanchis, Alfredo Ursúa IECON26-000503 Online State of Charge Estimation for Lithium Ion Batteries Using Extended Kalman Filter With MH within Gibbs Nannan Gu, Jianyu Bao, Chenhu Wu, Yubo Liang IECON26-000508 Complementarity-Weighted Multi-Objective Dispatching Optimization for Small Hydropower Groups with Wind and Solar Integration Xiong Lishan, Long Shuying, Zhao Jiayang, Li Yijun, Xia Yonghong IECON26-000512 Voltage-Strain Fusion for Lithium-ion cells State-of-Charge Estimation: Optimality, Fragility, and Mismatch Detection Jiayi Su, Luodan Liu, Zhimin Wei, Chunping Luo <i>continues on next page ►</i>

08:00–09:30 Online Room-4 ONLINE cont'd	<i>Online-TT-69: Renewable Energy and Energy Storage Systems · continued</i> IECON26-000569 Multi-Timescale Degradation-Aware Hierarchical MARL for Hybrid Energy Storage Management in DC Microgrids Li Jin, Wei Jiang IECON26-000590 EnhancedMamba: Structured State Space Modeling for Battery SOH Estimation Kepei Miao, Rafita Haque, Minghui Cheng, Nezih Pala, Chunlei Wang
08:00–09:30 Online Room-5 ONLINE	Online-TT-70: Transportation Electrification and Automotive Technologies Chairs: _____ IECON26-001739 Tri-Stream Physics-Informed Learning for Multi-Level Reliability Assessment of DC Fast-Charging Hardware for Electric Vehicle Saikat Das, Md Ebrahim Hossain, Arif Sarwat IECON26-001632 A Symmetric-Optimum Tuned Linear Extended State Observer for Active Disturbance Rejection Control of Dual-Active-Bridge Converters Uddhav Surve, Austin Allan, Srirama Srinivas IECON26-000653 Comparative Evaluation of Hybrid Storage Management Strategies in Electric Vehicles Islam Sayed, Yousef Mahmoud IECON26-000780 Rapid and Safe Trajectory Planning over Diverse Scenes through Diffusion Composition Wule Mao, Zhouheng Li, Yunhao Luo, Fangguo Zhao, Lei Xie IECON26-000800 An Induction Generator Based Electric Power System with Low DC Bus Capacitance and Short-Circuit Fault Tolerance for Unmanned Aerial Vehicles Krishna Raj Ramachandran Potti, Rohith Pottekkat, Hao Huang, Kaushik Rajashekara IECON26-001045 A Cascaded CD-Euler Prediction Strategy for NMPC-Based Autonomous Vehicle Path Tracking Tung Mai-Trung, Shin Kawai, Triet Nguyen-Van
08:00–09:30 Online Room-6 ONLINE	Online-TT-71: Control Systems and Applications Chairs: _____ IECON26-000556 PSGN-Loc: Privacy-Preserving Localization via Secure Aggregation of Gauss Newton Statistics Haojun Lin, Shengming Chang, He Xu IECON26-000391 An Adaptive-Integrated LSTM-EKF Method for Online Battery Capacity and RUL Prediction Zijin Ling, Runze Mao, Peihua Han, Weiqian Xu, Ning Yuan, Houxiang Zhang IECON26-000401 Uncertainty-Aware Significant Wave Height Estimation from Ship Motion Using Gaussian Process Regression Jinyan Xu, Xinyu Guo, Runze Mao, Peihua Han, Guoyuan Li, Houxiang Zhang IECON26-000429 Quantized Online Learning for Uncertain System Control via Gaussian Processes Jie Mei, Xiaobing Dai, Zhijun Li, Nan Xie, Sandra Hirche IECON26-000432 Unified Small-Signal Model for Constant-Current LCC-P and LCC-SP Resonant IPT Systems Denys Ovsienko, Mohamed Saad, Eduard Alarcon IECON26-001060 Robust Control Architectures for Trajectory Tracking of Autonomous Skid-Steer UGVs Chhavi Singh, Bishakh Bhattacharya

08:00–09:30 Online Room-7 ONLINE	Online-TT-72: Mechatronics and Robotics Chairs: _____ IECON26-000315 Online Dual-Antenna Lever-Arm Identification for Spherical-Robot Localization under Antenna Mounting Changes Fengqi Zhang, Bixuan Zhang, Song Jin, Xiaoqing Guan, You Wang, Guang Li IECON26-000338 Task-Consistent vision guided robot control for industrial PCB Manipulation Florian Kerber, Vinayaka Bhat IECON26-000349 Exploratory Anatomically Informed sEMG Channel Relevance Mapping for Index Finger Flexion R.m.maheshi Ruwanthika, K P D Frank Perera, Seiichiro Katsura IECON26-000441 Robust Disturbance-Observer-Based Position Control of Multi-Degree-of-Freedom Manipulator under Low-sampling-rate Conditions Eiji Nakayama, Yasutaka Fujimoto IECON26-000469 Reverse-Aware Curriculum for Reverse-Enabled Differential-Drive Navigation with Large Goal Sets Jingze Zhang, Yijia Zhu IECON26-000565 Data-Driven Closed-Loop Response Prediction for Model Predictive Local Planner of Spherical Robots Xiaoqing Guan, Tao Hu, Fengqi Zhang, Zhitao Liu, You Wang, Guang Li
08:00–09:30 Online Room-8 ONLINE	Online-TT-73: AI Applications in Control, Mechatronics, and Robotics Chairs: _____ IECON26-000400 Precise motion control of industrial manipulator via adaptive interval type2 fuzzy integral sliding mode Umair Javaid, Michael Basin, Zhihui He, Yuanjiang Liao IECON26-000416 A Collaborative Deep-Detection and Correlation-Filter Tracking System for Embedded Visual Servoing Shichang Huang, Di Cui, Chunya Tong, Jianzhi Chu, Guangsong Huang IECON26-000424 Active Noise Estimation based Fuzzy Particle Filter for Humanoid Robot Localization Zhiwei Zheng, Jiahong Xu, Qiubo Zhong, Bingzheng Tan IECON26-000444 Prediction-Aware Deep Reinforcement Learning-Based Navigation for Biped Robots in Dynamic Environments Wushan Jia, Yuhao Liu, Jinqian Tan, Yamin Wang, Xiaochen Xie IECON26-000607 A Bioinspired Homonomous Metamerism Module for Multi-Mode Soft-Rigid Hybrid Robots Pan Zhou, Haili Li, Lang Zhou, Zhaoyi Lin, Michael Basin, Jiantao Yao IECON26-000241 A Real-Time RGB Dual-Camera Surveillance System for Long-Range Drone Detection and Bearing Estimation Kangnan Wang, Yu Hu, Hao Liu, Sergii Baidachnyi, Yihe Wang, Zheng Liu
08:00–09:30 Online Room-9 ONLINE	Online-TT-74: Instrumentation, Sensors, Actuators, and Micro-Nano Technology Chairs: _____ IECON26-000303 A Novel Deep Learning Framework Combining Multiple CNN-LSTM for Human Activity Recognition based on Wearable Sensors Ning Yang, Chaoze Lu IECON26-000352 UA-PC-GNN: Uncertainty-Aware Physics-Constrained Graph Neural Network for Dynamic Industrial Spectral Calibration Heyu Xu, Peihong Cheng, Hongwei Ying

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08:00–09:30 Online Room-9 ONLINE <i>cont'd</i>	<i>Online-TT-74: Instrumentation, Sensors, Actuators, and Micro-Nano Technology · continued</i> IECON26-001375 Beyond Cellular Coverage: Satellite IoT for Deploy-and-Forget Water Tank Level and Rainfall Monitoring in Remote Agriculture Sami Ullah Saqib IECON26-000535 Set-Membership Global Estimation for Complex Sensor Networks: A Point-Set-based Approach Chongqing Wang, Yilian Zhang, Xianwen Zhou, Dan Zhang IECON26-000006 An Entropy-Based Privacy-Preserving Approach for Distributed Acoustic Sensing via Spectral-Spatial Feature Disentanglement Lincan Li, Shengming Chang IECON26-000389 Joint Node Privacy Preservation in Range-Based Localization via CRT-Based Aggregation and Paillier Encryption Hongyi Zhou, Shengming Chang
08:00–09:30 PR1 Office ONLINE	Online-TT-75: Renewable Energy and Energy Storage Systems Chairs: _____ IECON26-001850 An Enhanced AI-Based Framework for Dynamic Anomaly Detection and Automated Cleaning Control in Real-World PV Systems Basma Mohsen, Sherine Mohamed Abdel-Kadder, Anar A. Hady, Amr Al-Awamry IECON26-001166 Frequency-Deviation Based Adaptive Virtual Impedance for Fault Current Limitation in Grid-Forming Inverters Under Grid Disturbances Uchenna Chibuzor Ngwu, Chiagozie Emmanuel Anekwe, Chisom Benedicta Nwabuisi, Hendel Huanca Choque, José Luis Azcue IECON26-001335 Versioning Concept for Wireless Sensor-integrating Gears as Evolving Updateable Embedded Systems Cedric Wagner, Lukas Frei, Dominik Hujo, Robert Fromm, Erich Knoll, Michael Otto, Karsten Stahl, Faouzi Derbel, Birgit Vogel-Heuser IECON26-001192 Robust Sliding Mode Battery Charging Control of Bidirectional Interleaved DC-DC Converter Based EV Charging Stations Ahmed Elsanabary, Mokhtar Aly, Abdul Junejo, Mahmoud Hamouda, Mohamed Abido, Samir Kouro, José Rodríguez IECON26-001507: "Water-Quality-Aware Modeling of Seawater-Fed Anion Exchange Membrane Electrolyzers for Green Hydrogen Production", Umar Majeed Sada, Fei Gao, Qian Xun, Issam Salhi, Elena Breaz
09:30 4 parallel sessions	
09:30–10:30 Dafna - Banquet	Panel 1 Chairs: _____
09:30–10:30 Salwa 1	Panel 2 Chairs: _____
09:30–10:30 Salwa 2	SYP Presentations Chairs: _____ <i>SYP Presentations (chathuriwicki@ieee.org)</i>
09:30–10:30 Salwa 3	Chapters Meeting Chairs: _____ <i>Hani Vahedi</i>
10:00	
10:00–17:00 Dafna - Foyer	Exhibition for Sponsors

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10:30	
10:30–11:00 Venue TBA	Coffee Break
11:00 3 parallel sessions	
11:00–12:30 Dafna - Banquet	Keynote Prof. Huijun Gao <i>Intelligent Robotic System for Organoid Regeneration</i> Prof. Biplab Sikdar <i>AI-Driven Cyber Defense for Next-Generation Power Grids</i>
11:00–15:30 Salwa 2	SYP Presentations Chairs: _____ <i>SYP Presentations (chathuriwicky@ieee.org)</i>
11:00–12:30 Salwa 3	Chapters Meeting Chairs: _____ <i>Hani Vahedi</i>
12:30	
12:30–14:00 Venue TBA	Lunch Break
14:00 2 parallel sessions	
14:00–15:30 Dafna - Banquet	Keynote Prof. Sudip K. Mazumder <i>Actuation by Light: A New Era in Power Electronics</i> Prof. Francisco Gonzalez-Longatt <i>Protection in the Era of Power Converter-Dominated Systems</i>
14:00–15:30 Salwa 3	Chapters Meeting Chairs: _____ <i>Hani Vahedi</i>
15:30	
15:30–16:00 Venue TBA	Coffee Break
16:00 28 parallel sessions	
16:00–17:30 Basir	Onsite-TT-76: Power Electronics Converters Chairs: _____ IECON26-000743 AI-Assisted Magnetic Design of a Six-Port High-Frequency Transformer for Solid-State Transformer-Based EV Charging Applications Mahnoor Abbasi, Raihana Sattari, Alamera Nouran Alquennah, Sertac Bayhan, Ali Ghrayeb IECON26-000730 SiC-Based Multi-Phase Traction Inverter for Transportation Applications Manoj Yadav, Mulakapati Krishna, Bheemaiah Chikondra <i>continues on next page ►</i>

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16:00–17:30 Basir cont'd	<i>Onsite-TT-76: Power Electronics Converters · continued</i> IECON26-000793 Computational Fluid Dynamics Analysis of Data Center Ceiling Return Plenum Depth Under Different IT Loads Sayed Mohammad Kameli, Abdmonem Beitelmal, Anas Karaki, Nurettin Sezer, Sertac Bayhan IECON26-001423 Lagged Causal-Pruned Graph Temporal Network for Industrial Rotary Kiln Temperature Prediction Xiaoning Zhang, Weichao Luo, Yu Lu, Nan Zhou, Wenfeng Deng, Xiaojun Liang IECON26-001536 Design and Analysis of a 20 kV Self-Triggering Boost Marx Pulse Power Generator for Water Treatment Application Musaab Salih, Jamal Y.alsawalhi, Balanthi Beig, Nouredine Harid IECON26-000712 Two-Stage Adaptive Compensation and DC-Link Voltage Regulation for SS-Compensated AGV Wireless Charging Under Air-Gap Variation Mahmoud Howaidi, Yousef Mahmoud
16:00–17:30 Nakhil	Onsite-TT-77: Control Systems and Applications Chairs: _____ IECON26-000499 Anchoring Control-Oriented Modeling in Standardized Engineering Information Models Joshua Galys, Lukas Peter Wagner, Felix Gehlhoff IECON26-000510 Trade-off-Triggered Dual Iterative Learning Control for Multi-UAV Systems With Unknown Noise Statistics Huanan Wang, Yu Zhong, Xue Luo, Chengdai Huang IECON26-000537 Weighted Least-Squares INDI-SMC for VLEO Moving Mass DiskSats Jiahui Sun, Ruichen Xi, Chao Wei, Tong Wu, Fan Wu IECON26-000606 Hybrid Control Allocation Merging Benefits from Model Inversion and Online Optimization Methods for Multi-source DC Systems Yoann Tastavy, Gregoire Le Goff, Antoine Picot IECON26-001400 Prescribed-Time Normalization of Variable-Exponent Fixed-Time Control for Tethered Payload Retrieval Muhammad Shafiq, Taha Al-Saadi IECON26-000650 Adaptive Disturbance Rejection Composite Control for Suppression of Unknown Multifrequency Periodic Magnetic Field Disturbances Zhaoxin Duan, Tengyue Long, Bangcheng Han
16:00–17:30 Room - PR4	Onsite-TT-78: Electric Machines and Industrial Drives Chairs: _____ IECON26-000398 Stiffness Enhancement-Based Suppression of Backlash-Induced Limit Cycle Oscillations in Two-Mass Systems Xuewei Bi, Le Sun, Zihang Wan, Ziheng Kuang IECON26-000494 A Multi-Fidelity Residual-Transfer LPTN for Fast Transient Thermal Prediction of PMLSMs Yaoqi Shen, Yezhen Peng, Fengwen Yu, Nanjie Han, Weimin Kang, Congcong Luan, Xinhua Yao, Jianzhong Fu IECON26-000622 LLM Driven Simulation, and Electromagnetic Analysis of a Low-Speed High-Torque BLDC Motor for LH Aircraft Actuation Khalifa Aliyu Ibrahim, Qing Qin, Patrick Luk, Efsthios Siampis IECON26-000623 Scalarized Multi-objective Optimization for a cryogenic actuator at 20 K for hydrogen aircraft with the Fuzzy Analytic Hierarchy Process Qing Qin, Patrick Luk, Efsthios Siampis <i>continues on next page ►</i>

16:00–17:30 Room - PR4 <i>cont'd</i>	<i>Onsite-TT-78: Electric Machines and Industrial Drives · continued</i> IECON26-000787 Comparative Study of High-Temperature Wire Insulations under Accelerated Thermal Ageing Muhammad Khowja, Gaurang Vakil, Kuldeep Singh, Chris Gerada IECON26-001892 Does Soiling Heat or Cool Photovoltaic Modules Evidence from Five Years of Paired Rear-Side Module Measurements in a Desert Climate Oktoviano Gandhi, Dhanup S. Pillai, Carlos D. Rodríguez-Gallegos, Brahim Aissa, Sertac Bayhan
16:00–17:30 Room - PR5	Onsite-SS-29: Advanced Modeling and Control of Grid-Connected Converters for Distributed Generation and Power Quality Chairs: _____ IECON26-000615 A Novel Dual-Inverter Open-End Winding Induction Motor Drive with Integrated Energy Management Strategy Khaled Safsouf, Jean Sawma, Hadi Kanaan IECON26-001485 Optimizing EV Charging Infrastructure Utilization via Dynamic Rerouting and Predictive Load Shahriar Rahman Fahim, Rachad Atat, Abdulrahman Takiddin, Muhammad Ismail, Hasan Kurban, Erchin Serpedin IECON26-000572 ChainVPP-Sense: A Federated Blockchain-Orchestrated IoT Sensor Framework for Tamper-Proof Flexibility Aggregation in Heterogeneous Virtual Power Plants Sheeraz Iqbal, Md Shafiullah, Muhammad Bilal Ali, Muhammad Luqman, Muhammad Aurangzeb IECON26-000665 Hybrid Flatness API Control for Improved Grid Current Quality in a Multiport Energy Router Mohammadreza Azizi, Oleksandr Husev, Carlos Roncero-Clemente, Oleksandr Velihorskyi, Enrique Romero-Cadaval IECON26-001154 High Performance AI Data Center Cooling with Integrated Thermal Energy Storage Ahmad Ijaz, Reza Behnam, Alejandro Macarron Alberti, Yana Galazutdinova, Mohammad Shadmand, Monica Cook, Said Al-Hallaj IECON26-000282 Three-Phase Differential-Mode Inverter Operating using a New Continuous Modulation Approach Debotrinya Sur, Sudip Mazumder, Shantanu Gupta
16:00–17:30 Room - PR6	Onsite-SS-30: Intelligent Modelling and Fault Diagnosis Techniques for Safety-critical Industrial Systems Chairs: _____ IECON26-000148 A Reproducible Benchmarking Framework for LLM-Based Industrial Fault Diagnosis Irin Provatidis, Kristian Sandström, Moris Behnam, Elmeri Syrjane IECON26-000853 Robust Fault Detection and Diagnosis for Grid-Connected PV Microgrids Using TûS Residuals and Rule-Based Isolation Under Measurement Uncertainty Hatef Azamizenouzagh, Hamed Badihi IECON26-000991 A Multi-Task Deep Conditional Adversarial Domain Adaptation Network for Bearing Fault Diagnosis Pansheng Ding, Chenxu Qiu, Boqun Wang, Gejinlan Wang, Jianbin Qiu IECON26-001542 Data-Rate Sensitivity Analysis for Model-Based Fault Detection in Lithium-Ion Battery Packs Nima Abadi, Moqbel Hamood, Ozan Ozay, Metin Gokasan, Seta Bogosyan Estrada, Mohamed Abdallah <i>continues on next page ►</i>

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16:00–17:30 Room - PR6 <i>cont'd</i>	<i>Onsite-SS-30: Intelligent Modelling and Fault Diagnosis Techniques for Safety-critical Industrial Systems · continued</i> IECON26-001111 Inverse Model Predictive Control with Single Loop Architecture for Fast Electric Vehicle Chargers Abdullah Berkay Bayindir, Younes Mohammed Tsabet, Ali Sharida, Sertac Bayhan IECON26-001232 Multi-AUV Cooperative Localization Network with Enhanced Fault Tolerance and Dynamic Adaptability Xiaoyu Wang, Chengtao Cai
16:00–17:30 Room - PR7	Onsite-SS-31: Sliding Mode Control, Model Predictive Control and AI-Assisted Advanced Control of Power Electronics Converter Chairs: _____ IECON26-001705 Differentiable Predictive Control of Voltage Source Converters: A Comparative Study with Model Predictive Control and Supervised Learning Galina Demidova, Alecksey Anuchin, Daniil Shvetsov, Nikolai Poliakov IECON26-000029 A New Five-Level Single-Stage Boost Inverter: Performance Validation via Model Predictive Control Hasan Komurcugil, Naki Guler, Farzaneh Bagheri IECON26-000058 Experimental Real-Time ANFIS-Based MPPT Current Reference Generation for PV Systems with Fast Terminal Super-Twisting Sliding-Mode Control Habiba Rizki, Ahmed El Hajjaji, El-Mahjoub Boufounas, Lahcen Bejjit IECON26-000858 Smooth Battery Power Regulation in Hybrid Electric Vehicles Using PID-Like Continuous SMC Abdullah Abushokor, Mohammad Samiullah, Syed Amrr, Ali T. Al-Awami IECON26-000386 A Degradation-Aware MILP Framework for Joint Swap Service and Ancillary Market Optimization of Battery Swapping Stations Muhammad Ashar Ayaz, Irfan Khan IECON26-000876 Mitigating Cyber-Physical Attacks in Smart Grids: A Learner Verifier Architecture Suman Maiti, Sunandan Adhikary, Somnath Hazra, Soumyajit Dey
16:00–17:30 Room - PR8	Onsite-SS-32: Cybersecurity Frameworks for Modern Power Systems: Threats, Resilience, and Intelligent Defence Chairs: _____ IECON26-001159 Reference-Frame-Independent Quantum Key Distribution in Pauli Noise Junaid Ur Rehman, Shehbaz Tariq, Symeon Chatzinotas IECON26-001180 Impact of EV Charging on Anomaly-Based Cyberattack Detection in Distribution Grids: A Transfer Analysis Mohammed Gad, Mohammad Alshaikh Saleh, Ali Sharida, Sertac Bayhan, Haitham Abu-Rub IECON26-001644 A Cyber-Physical Risk Assessment Framework for IEC 61850 Substations Smitha Rani Bs, Preetam Mukherjee, Mathias Ekstedt IECON26-001028 A Real-Time Embedded Software Sensor/Controller Architecture for PV Systems Hsen Abidi, Lilia Sidhom, Math Bollen, Inès Chihi IECON26-001041 Interconnection of Grid-Forming Microgrids Using a Back-to-Back Converter in Low-Inertia Systems Mohammed Alsubaie, Hadhlul Aladhyani, Vasishta Burugula, Hamdan Alosaimi, Mohammed Alrajhi, Subhashish Bhattacharya IECON26-001662 Energy Management Strategy for Comparative Battery Capacity Assessment of a Grid Connected PV Battery Hydrogen System Faizan Khan, Md Abdul Aziz, Saad Mekhilef

16:00–17:30 Room - PR9	Onsite-SS-33: Stability Control, Analysis and Implementation of Grid-following/Grid-forming Renewable Energy Systems Chairs: _____ IECON26-000304 Multi-Energy Complementarity in Smart Microgrids for Advanced Building Systems Li Wei, Chen Che, Guangxi Li, Li Kanglin, Wei Li IECON26-000516 Deep learning-based joint identification of coil parameters and misalignment in wireless power transfer Chao Qi, Ren Yijia, Yang Wang, Xiyu Mo, Qisheng Qiu, Fengling Han IECON26-000548 Super-Twisting Sliding Mode Current Control for Grid-Forming Cascaded H-Bridge Converters Yingming Wang, Xuemei Zheng, Paolo Mattavelli, Yanyu Zhao IECON26-000877 Multi-Constraint Region Assessment of Grid-Forming SVG Support for PLL-Synchronized Wind Turbines in Weak Grids Jingqian Peng, Zongxiang Lu, Ying Qiao, Shuangxi Zhou, Shiyu Zhang, Youzhuo Huang, Hui Liu IECON26-001001 Modular Model Reference Adaptive Control for Grid-Forming Converters Alaa Altawallbeh, Abdulrahman Alassi, Nader Meskin, Mohammed Al-Hitmi, Ahmed Massoud IECON26-001712 Autocontrast-Assisted Lightweight Ensemble Learning for Photovoltaic Cell Defect Detection in Electroluminescence Images Ridvan Canbaz, Ayberk Calpbinici, Bayram Akdemir
16:00–18:30 Salwa 2	SYP Presentations Chairs: _____ <i>SYP Presentations (chathuriwickry@ieee.org)</i>
16:00–17:30 Salwa 3	Chapters Meeting Chairs: _____ <i>Hani Vahedi</i>
16:00–17:30 Ginan ONLINE	Online-TT-79: AI Applications in Control, Mechatronics, and Robotics Chairs: _____ IECON26-001546 A Decoupled Machine Learning Framework for Simultaneous Fault Detection and Signal Restoration in Industrial Systems Diyar Altinses, Ulrich Nickel, Maximilian Schmidt IECON26-000772 ENERGIZE: A Hardware-Aware Compression and Deployment Framework for Privacy-Preserving Edge NILM Sotirios Athanasoulas, Christos Kozanitis IECON26-001078 3D Heterogeneous Integration of Optical GaAs HEMTs and HV Ga2O3 MOSFET Sourojit Mazumder, Vikash Jangir, Sudip Mazumder, Mohammad Farsijani IECON26-001285 Generative AI for Early Failure Prediction via Synthetic Degradation Trajectory Modeling Aya Elmogy, Heba Ragab, Qusai Mashriqi IECON26-000439 The State-Language-Action Cyber-Physical Threat Framework for the Humanoid-Integrated Smart Factory Donghyun Yoon, Jiwon Park, Yoonjin Yoon IECON26-000801 Rule-Based Energy Management of a Wind-Battery Hybrid AC/DC Microgrid for Grid-Connected Applications Vijayakumar Gali, Hema Janga, Jagadeesh Kumar Juturi, Shady Khalil, Amira Mohammed, B Chitti Babu, Somporn Sirisumrannukul

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16:00–17:30 Online Room-1 ONLINE	Online-SS-34: AI-driven Optimization Control Approaches in Renewable Energy Systems Chairs: _____ IECON26-001702 Data-driven State-of-Charge-Conditioned Residual Tightening for Voltage-Constrained Battery Current Scheduling Hasin Abrar Biswas, A.s.m. Bakibillah IECON26-000160 A Generative AI-Augmented Physics-Informed Framework for Intelligent Microgrid Energy Management Elluru Ritesh Goud, Devanathan Balakrishnan, Selvaraj Palanisamy IECON26-001029 Online Learning-Based Adaptive Hybrid Benders Decomposition for Risk-Averse Optimal Sizing Saif Ahmad, Seifeddine Ben Elghali, Hafiz Ahmed IECON26-001404 Safety-Aware Reinforcement Learning for Network-Constrained Energy Storage Dispatch Chengfang Hu, Yunqi Wang, Xinghuo Yu, Lasantha Meegahapola IECON26-001635 Residential EV Smart Charging Using Proximal Policy Optimization Amirreza Shafieinejad, Sasan Azad, Mohammad Taghi Ameli, Hossein Ameli, Goran Strbac, Hamidreza Arasteh, Sanjeevikumar Padmanaban, Cesar Diaz-Londono, Josep M. Guerrero IECON26-000267 Experimental evaluation of Grid-connected B4 Photovoltaic Inverters through Frequency Response Measurements Enric Torán, Marian Liberos, Ivan Patrao, Raul Gonzalez-Medina, Gabriel Garcerá, Emilio Figueres
16:00–17:30 Online Room-10 ONLINE	Online-TT-80: Cyber-Physical Systems and Internet of Things in Industry Chairs: _____ IECON26-000727 A Digitization Approach for Offshore Floating Platforms Based on RAMI4.0 and ISO 23247 Romina Giugge, Lucas Sakurada, João Paulo Coelho, Paulo Leitao IECON26-000798 An FPGA-Based Real-Time Replay Attack Detection Architecture for IEC 61850 GOOSE Communications Saeed Keshavarzi, Navid Eghtedarpour IECON26-000828 Differential Privacy Defence Against Label Inference Attacks in Federated Split Learning for Industrial Object Detection Reem Elagamy, Raj Mani Shukla, Suman Bhunia IECON26-000857 Evaluation Metrics for Communication Protocols in Industrial Software Systems Volodymyr Trykoz, Nicholas Sjöqvist Obucina, Björn Leander, Saad Mubeen, Mohammad Ashjaei IECON26-000150 A Privacy-Preserving Localization Protocol Using VCF and PH-NTRU Lattice Cryptography Hanzhe Zhang, Shengming Chang, Linhua Zhou IECON26-000154 A Lightweight Privacy-Preserving Localization Scheme for Crowdsourced Hybrid TDOA-AOA Networks Using CRT and Zero-Sum Noise Chenxiao Lin, Shengming Chang, Dongdong Lv
16:00–17:30 Online Room-11 ONLINE	Online-TT-81: Signal & Image Processing Methodologies Chairs: _____ IECON26-000371 A Dual-Frequency Domain Fusion Blind Watermarking Algorithm Based on Deep Learning Cheng Guo, Jun Li, Shi Jingjing

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16:00–17:30 Online Room-11 ONLINE <i>cont'd</i>	<i>Online-TT-81: Signal & Image Processing Methodologies · continued</i> IECON26-000462 Physics-Guided Multi-Scale Network for Underwater Electromagnetic Parameter Inversion Nan Jing, Sheng Zhong, Biyin Zhang, Ruichi Sun, Ruonan Li, Tianxu Zhang IECON26-000466 Linear Spectral Combination: A Dictionary Based Framework for Interpretable Spectral Identification Fadi Karkafi, Maxime Leiber, Jean-Frédéric Diebold, Mohammed El Badaoui IECON26-000528 Closed-Form User-Centric Privacy-Preserving Localization for Three-Party MPC Haojun Lin, Shengming Chang, Tuozhong Yao IECON26-000660 Drone-Based Lane Violation Detection System for Autonomous Vehicle Competitions Seung Yun Noh, Young Hoon Suh, Hyo Jin Park, Hye Jun Hong, Sun Hong Jung, Jae Wook Jeon IECON26-000677 Robust Homography Estimation for Visible-Infrared Image Registration in Wildfire UAV Applications Linhan Qiao, Xiaobo Wu, Yufei Fu, Youmin Zhang, Yaohong Qu
16:00–17:30 Online Room-12 ONLINE	Online-TT-82: Industrial Informatics, Cloud Computing, Big Data Chairs: _____ IECON26-000110 Smart Inspection Systems: A Comprehensive Review of Inspections Technologies, and Future Directions Rula Alghamdi, Shaden Alajji, Maryam Alghamdi, Dana Asiri, Omar Alharbi, Sumyah Aljameel, Mariya Almarhoon IECON26-000672 AI-Enabled Predictive Maintenance Framework for Legacy Industrial Control Systems Using Machine Learning and Real-Time PLC Integration Mazher Khleel, Ray E Sheriff, Hadi Kazwini IECON26-000819 Leveraging Retrieval-Augmented Generation (RAG) Question-Answering for Ontology Generation Sara Marhaba, Arwa Allinjaw IECON26-000830 Trustworthy Evaluation under Data Scarcity: Tabular Foundation Models for Industrial Support of Hydrogen Production via Dry Reforming Renan Akira Nascimento Garcia Escribano, Marcos Antonio Schreiner, Luiz Eduardo Soares De Oliveira IECON26-000893 When Retrieval Is Not Enough: Agentic Search for Incomplete RAG Corpora Rhuan Garcia de Assis Teixeira, Thiago Oliveira-Santos, Alexandre Loureiros Rodrigues, Gabriel Shen Baldon, Flávio Miguel Varejão IECON26-000913 Generative AI-Driven Analysis within the AAS-based Data Ecosystem Hesam Rezaee Ahvanouee, Mohammad Hossein Rimaz, Sina Namaki Araghi, Alexander Fay
16:00–17:30 Online Room-13 ONLINE	Online-TT-83: Power Systems and Smart Grid Chairs: _____ IECON26-001110 Predefined-Time Distributed Fractional-Order Sliding Mode Control for Frequency Regulation and Economic Dispatch in Islanded AC Microgrids Ahmed Lotfy, Zhangyong Chen, Yong Chen, Esam H.abdelhameed IECON26-001161 A Robust and Fast Distributed Peer-to-peer Trading Framework for Electric Vehicle Charging Stations under Price Uncertainty Guopeng Li, Lijian Zhuang, Yuqian Fan, Lihui Zheng, Xiaojun Tan, Quanxue Guan IECON26-001339 Ramp Rate Independence and Grid-Facing Disturbance Characteristics of Co-Located AI Data Center Workloads Arun Karthik Sundararajan, Yogesh Rethinapandian, Smrithi Prakash, Kaushik Kumar <i>continues on next page ►</i>

16:00–17:30 Online Room-13 ONLINE cont'd	<i>Online-TT-83: Power Systems and Smart Grid · continued</i> IECON26-001210 Voltage Safety Boundary Assessment for DC Microgrids with Pulsed Power Loads Weiyl Zhang, Rui Huang, Mengbiao Zhou IECON26-001213 Variance-Weighted Adaptive Power Capping for Grid-Stable AI Data Centers Yogesh Rethinapandian, Arun Karthik Sundararajan, Kaushik Kumar, Smrithi Prakash IECON26-001281 Communication Performance Evaluation of a LoRa Peer-to-Peer-Based Transformer Temperature Monitoring System in an Indoor Transformer Room Rafly Rizqi Darmawansyah, Sudarmono Sasmono, Bagus Aditya
16:00–17:30 Online Room-14 ONLINE	Online-TT-84: Power Electronics Converters Chairs: _____ IECON26-000970 A 1-MHz 12-V-to-1-V Series-Capacitor Buck Converter With Lossless Module-Level Current Sharing for Data-Center Applications Zhongbo Hou, Ke Jin, Weiyang Zhou IECON26-001004 Three-Port Symmetrical Switch Doubly-Grounded PV-Battery Inverter with Predictive Controller Eltaib Ibrahim, Mokhtar Aly, José Rodríguez, Mohamed Orabi IECON26-001007 Straightforward PI tuning method to avoid high-frequency transformer saturation in DAB converters Iñaki Orradre, David Elizondo-Martinez, Pablo Sanchis, Ernesto L. Barrios IECON26-001009 Three Phase AC-DC Bidirectional Battery Charger Based on The Versatile Buck-Boost Converter Uzair Shakir, Roberto Giral, Javier Calvente IECON26-001010 Efficient Half-Step Delay Compensation for Deadbeat Predictive Current Control of 2-Level Inverters Using Low-Cost ARM Cortex-M Microcontrollers Sarina Zirak Sima, Mostefa Kermadi IECON26-001050 Extending Light-Load ZVS Performance in a Cosine-Resonant Modular Multilevel DC-DC Converter Using Duty and Frequency Scheduling Aritra Basu, Dongsheng Yang, Songda Wang, Yin Sun
16:00–17:30 Online Room-15 ONLINE	Online-TT-85: Control Systems and Applications Chairs: _____ IECON26-000496 Construction and Optimization Method of Feedforward Controller for Precision Motion Stages Based on Modal-Space Model Xuewei Fu, Zhenyu Chen, Xiaofeng Yang, Yang Liu, Jiubin Tan IECON26-000502 Data-Driven Safe Control of Unknown Control-Affine Systems via Reservoir Computing Yupeng Zhu, Zetao Huang, Zhuoyu Li, Chengwei Wu IECON26-000542 Distributed Set-Membership Estimation for Automated Guided Vehicles based on a Novel Topology Adaptation Strategy Jiale Gao, Yilian Zhang, Xianwen Zhou, Dan Zhang IECON26-000546 Prescribed Performance Trajectory Tracking Control for Robot Manipulator via Physics-Informed Hamiltonian Adaptive Dynamic Programming Xiaohe Liu, Pengda Liu, Jun Gou, Li Chen IECON26-000794 Risk-Aware Path Planning and Safety Control for Autonomous Vehicles in Factory Mixed Traffic Yuhan Zheng, Weiwei Qian, Yan Wang <i>continues on next page ►</i>

16:00–17:30 Online Room-15 ONLINE <i>cont'd</i>	<i>Online-TT-85: Control Systems and Applications · continued</i> IECON26-000628 The Disturbance Observer as a Double Agent: Spectral Detection of Stealthy Injection Attacks in ADRC and DOBC Motor Drives Jeremy Scerri, Kevin Theuma
16:00–17:30 Online Room-16 ONLINE	Online-TT-86: AI Applications in Control, Mechatronics, and Robotics Chairs: _____ IECON26-000578 A Hierarchical SAC-NMPC Architecture for Robust Trajectory Tracking of Underactuated AUVs Zixuan Wang, Zimo Zhang, Jiongming Wang, Xingjian Cao, Yefan Shi, Wei Zhang IECON26-000579 Lightweight Image Data Hiding and Steganography Framework for Networked Visual Control Systems Runsa Ma, Junyang Xu, Cheng Hu, Dajun Du, Aleksandar Rakic IECON26-000450 Online Local Rolling Path Planning Method for Industrial UAVs in Dynamic Low-Altitude Environments Chaoze Lu, Ruyue Shen, Jing Wang IECON26-000608 Obstacle Masking: Learning Zero-Collision Policies in Decentralised Reinforcement Learning for Multi-AGV Scenarios Yutong Du, Polina Ovsianikova, Antti Oulasvirta, Valeriy Vyatkin IECON26-000610 An Optimal Task Planning Integrated with Allocation Algorithm for Smart Factories Qiguang Chen, Ya-Jun Pan IECON26-000649 Controlled Evaluation of YOLO-Based Monocular Bounding-Box Distance Estimation for Autonomous Obstacle Avoidance Minsoo Kim, Min Young Chung, Jae Jeon
16:00–17:30 Online Room-2 ONLINE	Online-TT-87: Power Electronics Converters Chairs: _____ IECON26-000515 PSK-PWM Carrier-Based AC-DC Talkative Power Conversion for Airborne Wind Energy System Yanqi Hou, Yang Leng, Rongwu Zhu, Weihao Hu, Yuan Feng, Xiqiang Chang, Tianrui Dun, Degeng Zhou IECON26-000561 A Novel Integrated Phase Shift Modulation for CLLC Resonant Converter for Onboard Chargers Tae-Seok Kang, Yoo-Seop Kim, Hyunjin Jin, Yeong-Jun Choi IECON26-000600 Modeling and Power-Based Voltage Control of a Stacked Interleaved DC-DC Boost Converter Sodessa Soma Shonkora, Alessandro Serpi IECON26-000604 A Current Balancing Control Method With Fewer Sensors Under Parameter Mismatch for Three-Phase LLC Resonant Converter Hyunjin Jin, Tae-Seok Kang, Yeong-Jun Choi IECON26-000726 Solid-State Transformers for Data Center and Electrolyzer Applications: A Comparative Review Tayebeh Faghihisenejani, Hani Vahedi, Pavol Bauer, Zian Qin IECON26-000039 Optimal Voltage Balancing Control of Five-Level Neutral-point Clamped Converters with One-phase Redundant Level Modulation Wei Xu, Jun Wang, Wenzhi Zhou, Xibo Yuan, Yonglei Zhang, Shushu Zhu, Zhaobo Zhang, Kun Wang

16:00–17:30 Online Room-3 ONLINE	Online-TT-88: Electric Machines and Industrial Drives Chairs: _____ IECON26-000353 Electromagnetic Tradeoff Analysis of Stator-Slotted Flux Switching Wound Field Machines Chiweta Abunike, Qingsong Wang, Lyne Woodward, Kamal Al-Haddad IECON26-000354 Multi-Objective Harmonic Analysis of Trapezoidal-Slotted Flux Switching Wound Field Machines Chiweta Abunike, Qingsong Wang, Lyne Woodward, Kamal Al-Haddad IECON26-000593 Globally Stable Hall Position Fault Tolerant Topology using MLE-Based Detection and Orthogonalization Compensation for PMSM Guan-Ren Chen, Jyun-You Chen IECON26-000654 Fault-Tolerance Analysis and Enhancement of a Single-Sided Axial Flux Permanent Magnet Motor Using a Proposed Y Split-Phase Winding Topology Sunny Nazir, Ahmad Almomani, Yazan Al-Jizawi, Faisal Khan, Mohammad Sedigh Toulabi IECON26-000668 Energy Current Quality Trade-Offs Between CCS-MPC and FCS-MPC in Retrofit BEV PMSM Drives Khaoula Soula, Seifeddine Benelghali IECON26-000324 Privacy-Preserving Consensus-Based ADMM for Multi-Period Market Clearing in Network-Constrained Microgrids with Battery Storage Emmanuel Emeruom, Abdullah Umar, Vijayakumar Gali, Prashant K Jamwal, Shady Khalil, Mostafa Farrag
16:00–17:30 Online Room-4 ONLINE	Online-TT-89: Renewable Energy and Energy Storage Systems Chairs: _____ IECON26-000691 PET-3C: A Transferable Physics-Informed ECM-Residual Framework for Lithium-Ion Battery Voltage Prediction Min Xie, Chajin Chen, Jufei Wang, Dong Zhang, Hanpeng Liao IECON26-000739 State-of-Charge Estimation and Capacity Fade-Based State-of-Health Assessment of Lithium-Ion Batteries Using Kalman Filters Himalay Baidya, Mohammad Taufiqul Arif, Ashika Savinda Mendis, Ameen Gargoom, Md. Enamul Haque IECON26-000766 Policy-Driven Optimal Sizing of Grid-Connected PV/Wind Systems in GCC Buildings Using Metaheuristic Algorithms: Doha and Yanbu Case Studies Abdulrahman S. Sait IECON26-000874 A Random Forest-Based Method for Multi-Fault Diagnosis of Batteries Zhang Hengrui, Zhu Lingyun, Guo Changhui, Zheng Hairui, Zhan Licheng, Zhang Xuliang IECON26-000799 Robust Multi-Criteria Framework for Resilient and Sustainable Supplier Selection Rabab Alasbool, Mohammed Qadar, Fatema Al Balooshi IECON26-001493 Spatiotemporally Decoupled Perception via Prior-Map-Guided Inverse Projection for Real-Time Landmark Anchoring Ruoyu Liu, Zhaohong Wang, Hong Lei
16:00–17:30 Online Room-5 ONLINE	Online-TT-90: Transportation Electrification and Automotive Technologies Chairs: _____ IECON26-000883 Sensor-Burst Congestion Mitigation in TSN-Based Zonal Software-Defined Vehicle Architecture Sung Bhin Oh, Beom Gi Suh, Youngsoo Do, Young Min Kim, Jae Jeon <i>continues on next page ►</i>

16:00–17:30 Online Room-5 ONLINE <i>cont'd</i>	<i>Online-TT-90: Transportation Electrification and Automotive Technologies · continued</i> IECON26-001318 A Systematic Design Methodology for Tuning ANFIS Parameters in Dual-Motor EV Energy Management Chi Nguyen, Bao-Huy Nguyen, Joao Trovao, Minh C. Ta, Loic Boulon IECON26-001108 Fault Signatures and Dynamic Partial Shading Effects in Vehicle-Integrated Photovoltaic Systems Mohammad Qais, I Safak Bayram, Rafael Pena-Alzola, Stuart Galloway IECON26-001231 Credibility-Supervised Nash Arbitration for Redundant MPC-Based Fault-Tolerant Vehicle Trajectory Tracking Yuhao Bao, Henglai Wei, Jicheng Chen, Kai Jiang IECON26-001427 Symmetry-Hard-Constrained Physics-Informed Neural Network for Efficient Electromagnetic Modeling of Superconducting Electrodynamics Suspension Trains Linfeng Liu, Yijie Zhao, Wei Dong, Hao Ye IECON26-000618 Rust-Based RTIC and FreeRTOS for In-Vehicle CAN Response Determinism Seok Dong Min, Youngsoo Do, Sung Bhin Oh, Jae Jeon
16:00–17:30 Online Room-6 ONLINE	Online-TT-91: Control Systems and Applications Chairs: _____ IECON26-000442 Integrated Fault Estimation and Fault-tolerant Tracking Control for Polynomial Fuzzy Systems Jingyu Ding, Jinyong Yu, Qin Zhao, Michael Basin IECON26-000449 Nonlinear Anti-Sway Control for Double-Pendulum Overhead Crane with Composite-Output Constraint Shengzeng Zhang, Xinggao Liu, Michael Basin, Haoxiang Zhang, Chentao Han, Xiongxiang He IECON26-000452 Data-Driven Smart Control of Chiller Systems: An Integrated Modeling and Optimization Approach Gina Yang, Ching-Yi Hsueh, Jen-Chung Liao IECON26-000474 Sensorless EKF Control of PMSMs Under Thermal Variations: A Comparative Study of LUT and ANN Compensation Raissa Raimundo da Silva, Lucas Rossato Rocha, Mozer Schunck Lorenzo, Eduarda Fumaco Freitas, Gabriel Capitão Freo, Luis Felipe Pessoa Teixeira, Marco Rivera, Rodrigo Padilha Vieira IECON26-000475 Robust Distributed Control for Flexible DC Microgrids Under Dynamic Operating Conditions Lejla Ahmethodic, Senad Huseinbegovic IECON26-000485 Finite-Time Mean-Square Boundedness and H-Infinity Property of a Fading Memory Reduced Order Extended Kalman Filter Andrew Strandt, Alia Strandt, Edwin Yaz
16:00–17:30 Online Room-7 ONLINE	Online-TT-92: Mechatronics and Robotics Chairs: _____ IECON26-000573 Open Omnibot: A Low-Cost ESP32 Mecanum Platform with Per-Wheel Self-Calibration for Reproducible Indoor Experiments Samiul Hoque, Manash Kumar Mandal, Md. Ataur Rahman, Md. Shirazim Munir, Md. Tarek Habib IECON26-000591 An AO-Synchronized CPG-Guided Variable-Admittance Framework for Smooth Multi-Mode Switching in Lower-Limb Exoskeletons Zhenlei Chen, Tianyi Sun, Yao Yan, Tieshan Li IECON26-000631 Passive Acoustic Detection and Localization of Drones for Airspace Security Abdelrazzak Merheb, Elie Zaarour, Steven Bassil, Charbel Raffoul <i>continues on next page ►</i>

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16:00–17:30 Online Room-7 ONLINE <i>cont'd</i>	<i>Online-TT-92: Mechatronics and Robotics · continued</i> IECON26-000636 Design and Implementation of a 5-DOF Vision-Guided Robotic Arm for Sorting and Classification of Mixed Objects Osama Nagee, Momen Abayazid, Mohammed Almismari IECON26-000648 SLAM-Guided Nonlinear Model Predictive Control for Autonomous Flight of a Custom Drone Minh-Nhat Nguyen, Yuzhu Sun, Mien Van IECON26-000716 Development of 2-DOF Electromagnetic Soft Actuator Sota Shimizu, Hokuto Kurihara
16:00–17:30 Online Room-8 ONLINE	Online-TT-93: AI Applications in Control, Mechatronics, and Robotics Chairs: _____ IECON26-001194 Onboard Image Compression with Hardware-Accelerated Autoencoders for Mobile Machines Marius Krüger, Birgit Vogel-Heuser, Alexander Vieres, Jonas Woll, Markus Echtler, Max-David Falkner, Claus Lechner, Hans Regler IECON26-001349 Evaluating Large Language Models for Field-Level Data Preprocessing in Industrial Automation: A Feasibility Study Marius Krüger, Birgit Vogel-Heuser, Stefanie Müller IECON26-000121 Hybrid Data-Driven and Physics-Based Pre-Flight Battery SOC Prediction for Drone Logistics Sofiene Lassoued, Roman Juhls, Stefan Lier, Dorothea Schwung, Andreas Schwung IECON26-000555 Adaptive Confidence-Based Self-Correction for Few-Shot Learning with Meta-Learning Kyuseung Kim, Dongho Shin, Jeongwon Kim IECON26-000557 Hierarchical Semantic Dynamic Attention Modulation for Vision Transformers Seonyul Shin, Dongho Shin, Jeongwon Kim IECON26-000054 AI-Powered Predictive Maintenance System for an Induction Motor Using Edge Machine Learning Mousa Alhashem, Ali AlGhazwy, Hassan Z. Al Garni, Abdullahi Abubakar Mas'ud
16:00–17:30 Online Room-9 ONLINE	Online-TT-94: Instrumentation, Sensors, Actuators, and Micro-Nano Technology Chairs: _____ IECON26-000567 Broadband MoS₂/Ga₂O₃ Heterojunction Photodetector for Enhanced UV to NIR Detection Maha Alaqeel, Areej Aljarb, Arwa Kutbee IECON26-000715 Design and Optimization of an RF Power Amplifier for Mid-Power Microwave Wireless Power Transfer Elham Norouzzadeh, Javad Ebrahimi, Alireza Bakhshai IECON26-000761 A Precision Capacitive Displacement Sensing Scheme Based on Transimpedance Amplifier and Lyapunov Estimator Lixin Zhang, Jianying Zheng, Xinyu Wang, Lihang Xu, Liang Xu, Qinglei Hu IECON26-000767 A Robust Nonreciprocal Large-Mode-Area Microwave Waveguide Enabled by Asymmetric Metamaterial Claddings Zhuoyuan Wang, Qian Shen, Yuhong Zhou, Ping Yu IECON26-000789 Enhanced Performance of MnO₂ Memristors Using an Oxygen-Rich/Oxygen-Deficient Homo Junction Architecture Raihan Amin Rana, Manoj Kumar Rajbhar, Dayanand Kumar, Nazek El-Atab <i>continues on next page ►</i>

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16:00–17:30 Online Room-9 ONLINE <i>cont'd</i>	<i>Online-TT-94: Instrumentation, Sensors, Actuators, and Micro-Nano Technology · continued</i> IECON26-001018 Cost-Effective 3D Borehole Reconstruction Using an Infrared Time-of-Flight Downhole Probe for Rock Mass Discontinuity Characterization Brian Azzopardi, Gabriella Muscat, Evan Dimech, Christian Schembri, Adrian Mifsud, Andrew Sammut
16:00–17:30 PR1 Office ONLINE	Online-TT-95: Power Systems and Smart Grid Chairs: _____ IECON26-001071 Integrated Post-Disaster Restoration With Coordinated Crew and Game-Theoretic V2G Dispatch for Resilient Networked Microgrids Osman Saleem, Keith Corzine, Leila Parsa, Ricardo De Castro IECON26-001126 Leveraging Vehicle-to-Grid (V2G) Technologies for Post-Disaster Power System Restoration and Resilience: A Comprehensive Multi-Modal Analysis and Policy Review Osman Saleem, Keith Corzine, Leila Parsa, Ricardo De Castro IECON26-001897 Comparative Probabilistic Assessment of Power Loss and Voltage Quality Under Load and Wind Uncertainty Mohammed Alzubaidi IECON26-001284 RE-INTEGRATE EMT Simulation Platform: A Multiphase Use Case Phuong (Peter) H. Hoang, Shamim Hasan, Qianxue Xia, Suman Debnath IECON26-000541 CC-CV Charging of EV Batteries by Means of a Soft-Switched Interleaved Buck Converter Ahmed Alfouly, Hugo Valderrama-Blavi, Oswaldo López-Santos, Abdelali El Aroudi IECON26-000598 Identification and Analysis of Frequency-Inertia and Amplitude-Elasticity of Current-Controlled Grid-Connected Converters Zhenjiang Xu, Han Peng, Yue Cui, Sicheng Wang, Xiaoming Yuan, Xin He
18:30	
18:30–21:30 Dafna - Banquet	Gala Dinner

08:00		28 parallel sessions
08:00–09:30 Basir	Onsite-TT-96: Power Electronics Converters	
	Chairs: _____	
	IECON26-001120	Robust H Voltage Control of Grid-Forming Inverter across Leading, Lagging, and Nonlinear Loads Mikołaj Kadzielawski, Tomasz Swiechowicz, Mariusz Malinowski
	IECON26-001745	Model Predictive Control for Fast Grid-Forming and Grid-Following Mode Transition Jianwei Zhang, Huilai Lv
	IECON26-000326	SOS-Based Dynamic Event-Triggered Voltage Regulation for Polynomial DC Microgrid Zaineb Smida, Hamdi Gassara, Ahmed El Hajjaji
	IECON26-001031	A Single-Phase Non-Isolated AC-AC Converter Based on Switched-Inductor Cell With Inherent Commutation Deniz Zargariafshar, Ebrahim Babaei, Vida Ranjbarizad
	IECON26-000366	Transfer Learning-Based ITSC Severity Diagnosis Between Different PMSMs Using CWT and CNN Danya Al-Hindawi, Maher Al-Greer, Imran Bashir
08:00–09:30 Nakhil	IECON26-000377	A Quasi-Single-Stage Isolated Three-Phase DC/AC Converter Based on Minimal-Transition DPWM Enabling Wide-Range ZVS and Reduced Common-Mode Voltage in Renewable Energy Applications Mohamed Atef Tawfik Abdelkader, Ramkrishan Maheshwari, Thomas Ebel
	Onsite-TT-97: Power Electronics Converters	
	Chairs: _____	
	IECON26-000228	Frequency Division Multiplexing Modulation-Based Multichannel Talkative Power Conversion Zhao Zhang, Dehong Zhou, Xin Liu, Jianxiao Zou
	IECON26-000981	A Clamp Circuit Based Wireless Battery Charging System With Inherent CC-CV Output for Shared E-Micromobility Zihan Tian, Shihao Cheng, Shuren Liu, Chenbo Wang, Nikhil Bejrajh, Sampath Jayalath, Udaya Madawala, Jinping Kang, Haisen Zhao
	IECON26-001407	Impedance Based Precise Characterization of a High-Voltage High-Frequency Transformer Muhammad Saqib Ali, Syed Majid Nizami
	IECON26-000994	An Isolated Two-Stage DC-DC Power Module With Differential Power Processing for Modular Stacked Data Center Servers Niwton Gabriel Feliciani Dos Santos, Kristjan Uus, Edivan Laercio Carvalho, Andrii Chub
08:00–09:30 Room - PR4	IECON26-000949	Quality Prediction in Complex Industrial Process via Local-Global Relational Fusion Jiadong Lou, Jiaxin Li, Wenfeng Deng, Nan Zhou, Guangfu Ma, Xiaojun Liang
	IECON26-001743	Designing Batteries for the AI Era: A Specific-Resistance Design Framework for AI Datacenter DC-Bus Surge-Buffer Hamza Al-Hallaj, Stoyan Stoyanov, Dj Gilmore, Mohammad Shadmand, Said Al-Hallaj
	Onsite-SS-35: Single-Stage Buck/Boost Inverters——Topologies, Control Strategies, and Applications	
	Chairs: _____	
	IECON26-001465	Reliability-Oriented Phase-Count Selection and Preliminary Validation of an Interleaved Boost Converter for Harsh-Climate Portable Power Stations Mubarak Alboainain, Laial Harfouch, Morcos Metry

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08:00–09:30 Room - PR4 <i>cont'd</i>	<i>Onsite-SS-35: Single-Stage Buck/Boost Inverters——Topologies, Control Strategies, and Applications · continued</i> IECON26-001490 Systematic Workload Partitioning for Low-Cost Rapid Control Prototyping of FCS-MPC: A Grid-Connected Inverter Case Study Mostafa Mohamed, Morcos Metry IECON26-000062 Carrier Phase-Shift Modulation Based Zero-Voltage Switching for Parallel Interleaved Differential Boost Inverters Yushan Liu, Longtao Zhou, Xiao Li, Marco Rivera, Patrick Wheeler IECON26-000091 A Conditional Transformer-Based Model for Switching Transient Prediction of GaN HEMTs from Static Operating Conditions Qiang Zhou, Yuxuan Yang, Xiao Li, Marco Rivera, Patrick Wheeler IECON26-000092 Electromagnetic Interference Prediction of Synchronous Buck Circuits Based on Hierarchical Attention Deep Neural Networks Qiang Zhou, Ruitong Yan, Yuhang Shang, Xiao Li, Marco Rivera, Patrick Wheeler IECON26-000999 RHP-Zero-Constrained PIR Control Design for Three-Phase Differential Boost Inverters Xiao Li, Yang Zhang, Yushan Liu, Marco Rivera, Patrick Wheeler
08:00–09:30 Room - PR5	Onsite-SS-36: Integrated Motor Drive Systems for Robotics: From Component Design to Motion Control Chairs: _____ IECON26-000327 Enhanced Overload Capability Design of an Integrated AFPM Drive for Compact Robotic Joint Applications Tong Xu, Le Sun, Minghao Tong, Yizhou Cong IECON26-001373 Soft Actor-Critic Assisted Model Predictive Current Control of Permanent-Magnet Synchronous Motors Yukun Wang, Dong Xu, Guanda Yang, Hongxing Wei, Zeyu Li, Yupeng Liu, Marco Rivera, Patrick Wheeler IECON26-001443 A Joint Constrained Numerical Inverse Kinematics Method for 7 DOF Redundant Manipulators Wenqi Zhao, Dong Xu, Yupeng Liu, Marco Rivera, Patrick Wheeler IECON26-001446 The Impact of Numerical Energy Consistency on Friction Identification Heyang Feng, Xiaoguang Hu, Dong Xu, Yupeng Liu, Marco Rivera, Patrick Wheeler IECON26-001598 Offline-Optimized and Online-Interpolated B-Spline Trajectories for Variable-Distance Transfer With a Terminal Low-Speed Stage Jiahui Wen, Dong Xu, Yupeng Liu, Marco Rivera, Patrick Wheeler IECON26-001601 Sliding Mode Current Controller for Permanent Magnet Synchronous Motor Emulator Ma Runlin, Yupeng Liu, Dong Xu, Marco Rivera, Patrick Wheeler
08:00–09:30 Room - PR6	Onsite-TT-98: Signal & Image Processing Methodologies Chairs: _____ IECON26-001887 A Frequency-Domain Cascaded ML Surrogate Model for Stability Assessment of Grid-Following Inverters Sara Hamed, Alamera Nouran Alquennah, Ahmed Lakhdar Kouzou, Sertac Bayhan, Haitham Abu-Rub IECON26-001888 Investigation of Combined ADRC and MPC for Robust Speed Control of PM-Assisted SynRM Mahmoud Elmorshedy, Sagar Bhaskar Mahajan, Seshagiri Vemparrala, Dhafer Almakhlis IECON26-001256 Robust EMG-Driven Upper-Limb Joint Angle Estimation for Exoskeleton-Supported Motion by an Optimized LSTM Kalman Framework Md Ferdous Wahid, Jubaer Luthfullah, Mohammad Wahir, Hamza Seddek, Reza Tafreshi <i>continues on next page ►</i>

08:00–09:30 Room - PR6 <i>cont'd</i>	<i>Onsite-TT-98: Signal & Image Processing Methodologies · continued</i> IECON26-001418 Enhanced Inpainting Diffusion for Few-Shot Weld Defect Detection in X-ray Images Junzi Xia, Yingying Guo, Yuan Gao, Bin Han IECON26-001300 GenTwin: A Generative Industrial Immunosystem for Autonomous Resilience in Smart Manufacturing Anirudh Pratap Singh Yadav, Harshit Divekar, Parth Shrivastava, Rajanikanth Aluvalu, Sai Prashanth Mallellu, Sathwik Narkedimilli IECON26-001442 A General Method for Traceable and Verifiable Extraction from Engineering Documents Benedikt Schmetz, Bowen Chen, Torben Miny, Tobias Kleinert, Birgit Vogel-Heuser
08:00–09:30 Room - PR7	Onsite-SS-37: Power Quality and Grid Support for Converter-Dominated Power Systems Chairs: _____ IECON26-001530 Mind Before Motion: Bounded Verification and Counterexample-Guided Repair for Constrained Industrial Robotic Manipulation Teng Yan, Yu Yue, Teng Wang, Yihan Liu, Shuai Liu, Bingzhao Zhong IECON26-000277 Robust Distributed Cooperative Control of Multi-Aerial System for Unknown Target Fencing Umair Javaid, Muhammad Imran Baig, Michael Basin IECON26-000295 Physics-Informed Open-Set Fault Diagnosis of Inverter Output LC Filters and IGBT Modules Under Source-Free Domain Adaptation Chunxiao Wang, Jilun Tian, Zijian He, Gen Qiu, Kai Chen, Yuhua Cheng, Jiusi Zhang IECON26-000133 Enhancing Network Frequency Stability via Modular Self-Tuning MRAC Control of Grid-Forming Converters Alaa Altawallbeh, Abdulrahman Alassi, Nader Meskin, Mohammed Al-Hitmi, Ahmed Massoud IECON26-000192 Impact of Charger Capacity and State of Charge on Harmonic Emissions from Electric Vehicles Under AC Charging Scenario Aiman Ul Haque, Mustafa Eltayeb, Hazem Kasem, Aishwaryaa Kannan, Selma Khalid Elhaj Awadallah IECON26-000261 Novel Design of a Discrete-Time PIMR Controller for Three-Phase Shunt Active Power Filters Based on H Optimization and D-Stability Constraints Rachid Errouissi
08:00–09:30 Room - PR8	Onsite-SS-38: Advanced Signal and Image Processing Technologies for Condition Monitoring of Electric Machines and Drives Chairs: _____ IECON26-000746 Explainable Hybrid CNN-BiLSTM Framework for Non-Invasive Biofouling Detection in Tidal Stream Turbines Using Multi-Channel Electrical Signatures Haroon Rashid, Seyed Mostafa Owji, Youcef Belkhier, Yassine Amirat, Abdeslam Mamoune, Mohamed Benbouzid IECON26-001205 Eccentricity fault detection in induction motors using thermographic analysis and the DOST method Jonathan Cureno Osornio, Geovanni Díaz Saldaña, Emmanuel Resendiz-Ochoa, Israel Zamudio, Jose Antonino Daviu, Luis Morales Velazquez IECON26-000187 Impact of Time Series Forecasting Models on Rule-Based Energy Management in Grid-Connected PV-Battery Microgrid Mayra Ramirez-Chavez, Miguel Delgado-Prieto, Mario Mallea-Ruz, Gisela Pujol-Vazquez, Joan Valls Pérez, Alvaro Luna-Alloza <i>continues on next page ►</i>

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08:00–09:30 Room - PR8 <i>cont'd</i>	<i>Onsite-SS-38: Advanced Signal and Image Processing Technologies for Condition Monitoring of Electric Machines and Drives · continued</i> IECON26-000433 GNN-Assisted Power Packet Routing with Multi-Agent Reservation for Energy Internet Networks Lynn El Moussaoui, Amani Fawaz, Hadi Kanaan IECON26-001688 TFMNN: Transient Fourier Mapping Neural Network for Full-Waveform Prediction of Dual-Active-Bridge Converters Xiyun Wang, Tanjing Xie, Yinxiao Zhu, Yongheng Yang IECON26-000709 Self-Inductance-Aware Switched-Capacitor Adaptive Compensation for AGV Wireless Charging Under Air-Gap Variation Mahmoud Howaidi, Yousef Mahmoud
08:00–09:30 Room - PR9	Onsite-SS-39: Advanced Modeling, Control and Emerging Applications of Multiphase Electric Drives Chairs: _____ IECON26-000180 Optimization of Current Lookup Tables for Minimum Stator Copper Loss and Torque Ripple in the Full Torque-Speed Range for a Six-Phase PMSM With Nonsinusoidal Back-EMF Alejandro Yepes, Shirin Rahmanpour, Oscar Lopez, Wessam Abdel-Azim, Petros Karamanakos, Ayman Abdel-Khalik, Jesús Doval-Gandoy IECON26-000288 Interturn-Fault Mitigation With Magnetic-Flux Nulling in Faulty Turns for Six-Phase Single-Layer FSCW PMSMs With Any Back-EMF Wessam Abdel-Azim, Alejandro Yepes, Ahmed Hemeida, Ayman Abdel-Khalik, Shehab Ahmed, Jesús Doval-Gandoy IECON26-000605 Model Predictive Flux Control With Direct Switching-State Synthesis for Symmetrical Six-Phase Induction Motor Drives Hamdihun Dawed, Khaled Al Jaafari, Balanthe Beig, Kaif Ahmed Lodi IECON26-000633 Current References for Minimum Copper Loss and Torque Ripple in the Full Torque-Speed Range for Symmetrical Six-Phase PMSMs With Nonsinusoidal Back-EMF Under an Open-Phase Fault Alejandro Yepes, Wessam Abdel-Azim, Oscar Lopez, Petros Karamanakos, Ayman Abdel-Khalik, Jesús Doval-Gandoy IECON26-001499 Design of a 4-Phase Switched Reluctance Motor with Low Torque Ripple Lam Pham, Hao Chen, Timophe Maslennikov, Ksenia Fedorova, Anton Dianov, Galina Demidova, Dmitry Aliamkin, Alecksey Anuchin IECON26-001564 Electrothermal and Demagnetization Analysis of Fault-Tolerant Control Under Interturn Faults in a Single-Layer FSCW Six-Phase PMSM Wessam Abdel-Azim, Alejandro Yepes, Ahmed Hemeida, Ayman Abdel-Khalik, Shehab Ahmed, Jesús Doval-Gandoy
08:00–09:00 Salwa 2	Onsite-TT-99: Signal & Image Processing Methodologies Chairs: _____ IECON26-000551 Comprehensive Benchmarking of Deep Convolutional Neural Networks for Automated Multi-Class Fault Classification in Solar Photovoltaic Modules Rahmouni Djemaa, Mohamed Benbouzid, Mohamed Djamel Mouss, Leïla-Hayet Mouss IECON26-000127 Complexity-Aware Lightweight Cloud Segmentation for Optical Remote-Sensing Imagery Using EfficientNet-B0 U-Net Ayman Abdallah, Hatem Keshk IECON26-001086 Physics-Informed Transformer Encoder for Single-Window Fault Classification and Location in Distribution Feeders Eduardo Salazar, Veronica Rosero, Sebastián Salazar-Pérez, Francisco Gonzalez-Longatt <i>continues on next page ►</i>

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08:00–09:00 Salwa 2 <i>cont'd</i>	<i>Onsite-TT-99: Signal & Image Processing Methodologies · continued</i> IECON26-001328 Enhanced Virtual Synchronous Machine (eVSM) versus WECC REGFM_B1 models: System Frequency Response Comparison Francisco Gonzalez-Longatt, Amos Boah, Valdo Ayuk Ngang IECON26-001097 Quantum Random Access Codes for Quantum Machine Learning Junaid Ur Rehman IECON26-001002 Transfer Learning-Based Photovoltaic Fault Classification Using Outdoor Infrared Thermography Images Muhammad Hanzla Tahir, Yusuf Bicer, Dhanup Somasekharan Pillai
08:00–09:00 Salwa 3	Onsite-TT-100: Power Electronics Converters Chairs: _____ IECON26-000411 Modeling and Control of VTOL Mode of a Fixed-Wing Hybrid UAV: Offline RL-Based PID Mahieddine Ayad, Nadia Ait-Ahmed, Mouhanned Brahim, Mourad Ait-Ahmed, Nicolas Bernard IECON26-001333 A GaN-Based Seven-Level Current-Fed Cascaded H-Bridge Inverter with Open-Circuit Protection for Grid-Connected PV Systems Switch Amirhossein Ramezankhani, Mostafa Marvasti, Amir Masoud Nouki, Mohammad Ali Mirshafiee, Sobhan Mohamadian, Carlo Cecati IECON26-000825 A Structural Modeling Framework for Modular Multi-Active Bridge Converters with Application to Renewable-Powered Hydrogen Production Amir Ghasemian, Alfonso Damiano, Carlo Cecati, Sobhan Mohamadian IECON26-000251 Hydro-Barrier Performance and Mechanical Integrity of SiR-based Insulation: Multifactor Aging under DC Excitation Israr Ullah, Antonis Theofanous, Hadi Naderiallaf, Chris Gerada, Michele Degano, Michael Galea IECON26-000476 Physics-Informed Control-Coupled Structural Decomposition and Residual-Aware MPC for Inverter-Dominated Microgrids Fatemeh Nasr Esfahani, Javad Ebrahimi, Alireza Bakhshai, Neeraj Suri, Xiandong Ma IECON26-001840 Integral Synergetic Control for Grid-Connected F-Type Inverters Badderdine Kanouni, Ahmed Elsanabary, Mokhtar Aly, Abdelbaset Laib, Mohamed Abido, José Rodríguez
08:00–09:30 Ginan ONLINE	Online-TT-101: Post Journal Session Chairs: _____ IECON26-PJ029 A Generalized Analytical Approach to Evaluate the Input Current Ripple of a VSI With Space-Vector-Based PWM Techniques Uppuluri Suryavalli, Vss Pavan Kumar Hari IECON26-PJ012 Series Voltage Injection Based Dual-Port Triple Active Bridge Converter With Reduced Link Current Stress and Enhanced Performances for Wide Operating Ranges Silpashree Sahu, Dipankar De, Alberto Castellazzi IECON26-PJ038 The Dynamic Model of the UR10 Robot and Its ROS2 Integration Vincenzo Petrone, Enrico Ferrentino, Pasquale Chiacchio
08:00–09:30 Online Room-1 ONLINE	Online-TT-102: Power Systems and Smart Grid Chairs: _____ IECON26-001198 A Transfer Learning Approach to Dictionary Learning-Based Attack Detection and Classification in Power Systems Moustapha El Haj, Rachad Atat, Muhammad Ismail, Erchin Serpedin, Hamza Noureddine, Md Rakibul Ahasan, Abdulrahman Takiddin

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08:00–09:30 Online Room-1 ONLINE cont'd	<i>Online-TT-102: Power Systems and Smart Grid · continued</i> IECON26-001362 Quantifying the Unintentional Islanding Risk: A Comparative Study on Active Distribution Network Harshit Nayak, Edoardo Daccò, Jose Luis Rueda, Davide Falabretti IECON26-000603 Multi-Higher-Order Simplicial Neural Networks for Cyber Attack Detection in Power Systems Salma Aboelmagd, Rachad Atat, Muhammad Ismail, Shady Khalil, Abdulrahman Takiddin IECON26-001433 Feasibility Investigation of a Supercapacitor-Assisted Grounding Scheme for DC Microgrids Sahan Gunathilaka, Dulsha Kularatna-Abeywardana IECON26-001435 Fault-Injection-Driven Validation of Software Applications for Digital Energy Systems Denis Vettoretti, Filip Pröbstl Andrén, Catalin Gavriluta IECON26-001473 Modulus Based Augmentation of Distribution Networks for Enhanced Reliability Niranjana Unnithan, Balasubramaniam Natarajan, George Amariuca
08:00–09:30 Online Room-10 ONLINE	Online-TT-103: Cyber-Physical Systems and Internet of Things in Industry Chairs: _____ IECON26-000969 Time Series Data Integration for the Web of Things Max Thoma, Tobias Schwarzing, Leonhard Esterbauer, Valentin Just IECON26-000973 PTERO: A Collaborative Browser-Native Engineering Environment for IEC 61499 Distributed Automation Pedro Beirão, Rui Pinto, Gil Gonçalves IECON26-000074 Blockchain-based Cross-platform Service Trust Evaluation Using Probabilistic Linguistic Term Sets and Platform Heterogeneity Parameter Yan Wang, Senfeng Cen, Yuhang Zheng IECON26-001035 Graph Neural Digital Shadows for AI-Assisted Vertical Direct Chill Casting Anahid Wachsenegger, Michela Vignoli, Rodrigo Gómez Vázquez, Siamak Rafiezadeh, Leo Schwarzmeier, Sofija Milicic, Juan Vanerio, Laura Bernado, Pedro Casas IECON26-000479 MCGuard: Memory-Controller-Assisted Detection of Memory Safety Violations in IoT Systems Chaochao Zhang, Chaoze Lu IECON26-000582 Hardware-Independent Temporal Synchronization of Distributed Camera Sensors Using the Lingua Franca Coordination Framework Mateus Oliveira, Lorenzo Oliveira, Angelo Perkusich
08:00–09:30 Online Room-11 ONLINE	Online-TT-104: Signal & Image Processing Methodologies Chairs: _____ IECON26-000692 Learning from Sparse Longitudinal EEG Recordings for Neurological Outcome Prediction in Post-Cardiac Arrest Comatose Patients Dhaladhuli Jahnavi, Nirmalya Ghosh, Amit Patra IECON26-000708 Real-Time Industrial Safety Violation Detection in Smart Construction Sites via Multi-Stage Feature Refinement and Pose-Semantic Association Wenkang Zhang, Wenba Li, Liang Wang, Xiaohai Li, Yuqin Yang, Zhanpeng Jin IECON26-000753 Two-Stage Cascaded Inspection Framework for Battery Defect Detection: From Known to Unknown Anomalies Hangbeom Kim, Toni Ly, Niklas Kesten, Andreas Frommknecht, Marco Huber <i>continues on next page ►</i>

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08:00–09:30 Online Room-11 ONLINE <i>cont'd</i>	<i>Online-TT-104: Signal & Image Processing Methodologies · continued</i> IECON26-000838 Resource-Constrained Edge-Cloud Triage for Biomedical Images Through Validation-Locked Governance Shrey Shah, Nishi Miteshkumar Doshi, Meet Raval, Mridul Shah, Neil Doshi, Dhvani Upadhyay IECON26-000840 Prediction of the Effects of Electrical Defibrillation Based on Wavelet Transforms and Natural Observation Methods Yuki Ichiba, Hiroki Matsumoto, Kodai Yasuda, Takayuki Okai, Hidetoshi Oya, Rahman Md. Masudur, Minoru Yoshida IECON26-000859 Advances in Optimization Techniques for Spatio-Temporal Backpropagation-based Training of Spiking Neural Networks Qu Wei
08:00–09:30 Online Room-12 ONLINE	Online-TT-105: Industrial Informatics, Cloud Computing, Big Data Chairs: _____ IECON26-000915 Enhancing Random Feature Subspace Selection in Varying Feature Space Scenarios Fabrício Enembreck, Jean-Paul Barddal, André Kusariba IECON26-001199 When Alarm Metrics Disagree: Fixed-Score Decoder Sensitivity in Industrial Time-Series OOD Detection Li-Ming Zhan, Xiaotao Pan, Kaiying Wang IECON26-001000 Section-Level Inconsistency Detection in Safety Data Sheets Using Structured LLM Prompting Josias Borba, Thiago Paixao, Filipe Mutz, Alberto De Souza, Claudine Badue, Thiago Oliveira-Santos IECON26-001048 SmartAirFusion: Agentic AI-Driven Compressed Air Optimisation for Energy-Efficient SME Manufacturing Risul Islam Jim, Sreehari Soman, Anwar Latheef, Abed Ahmed, Md Mahmudul Hasan IECON26-001081 Assay-Anchored Latent Ordinary Differential Equation for Between-Assay Grade Soft Sensing in Industrial Flotation Zhiqiang Qian, Yongfang Xie, Shiwen Xie IECON26-001088 A Real-Time Unsupervised Anomaly Detection Framework for Industrial IoT Streaming Data Hussain Nizam, Xiaopeng Hu, Fan Wang, Samra Zafar
08:00–09:30 Online Room-13 ONLINE	Online-TT-106: Power Electronics Converters Chairs: _____ IECON26-000950 Nonlinear Control of MMC-Based Shunt Active Power Filter: A Review Osama Ejhan, Mo Sleiman, Kamal Al-Haddad IECON26-001451 Coordinated LLC Resonant and Dual Active Bridge Converters for Hybrid PEMFC BESS Integration into a Vessel LVDC Bus Afonso Oliveira, Agostinho Rocha, José Vicente IECON26-001700 A Park Transformation Equations for AC Single-Phase Systems Arsene Missanda Mavoungou, Kamal Al-Haddad IECON26-001860 Control Penalty Design for Reinforcement Learning Based Control of Single-Phase Full-Bridge Inverter Yu Lei, Shadi Khodakaramzadeh, Azadeh Kermansaravi, Wenjuan Song, Mohammad Yazdani-Asrami, Hani Vahedi IECON26-001863 Physics-Informed Neural Networks for Magnetic Components in Power Electronic Converters Abdelrahman Abdelmagid, Sajjad Mohammadi <i>continues on next page ►</i>

08:00–09:30 Online Room-13 ONLINE <i>cont'd</i>	<i>Online-TT-106: Power Electronics Converters · continued</i> IECON26-001514 3D FEM Simulation of Partial Discharge in Stator Bar Insulation Under Multilevel PWM Excitation: Effect of Inverter Level Count Dennis Giancarlo Laura Portugal, Mateus Giesbrecht
08:00–09:30 Online Room-14 ONLINE	Online-TT-107: Control Systems and Applications Chairs: _____ IECON26-001206 Symmetry-Mapped Neural-HJB Optimal Fault-Tolerant Control for Actuator-Faulted UUVs Yefan Shi, Zixuan Wang, Zimo Zhang, Jiongming Wang, Yibing Wang, Wei Zhang IECON26-001244 An Input State Load Plant for a Balloon-Mounted Steerable Paraglider Under Frozen-Base Constraints Weixin Cheng, Wenbo Chen, Xuedong Jing, Zhen Hua IECON26-001272 Safe Fast Charging Robust to Battery Aging: A Solver-Free Safety Filter Without a Health Oracle Keshav Krishnan IECON26-001283 Self-Tuning of Extremum Seeking Control Transient Response in PMSM Drive PSOE Self-Healing Gayan Vimukthi Dissanayake Dissanayake Mudiyansele, Sandun Kuruppu IECON26-001292 Robust Passivity-Based Sliding Mode Control for Speed Regulation of Coreless Motors Wensheng Luo, Li Haofei, Jose I. Leon, Sergio Vazquez, Leopoldo García Franquelo, Dianguo Xu IECON26-001345 Online Effective Delay-Time Estimation for State-Predictive Adaptive Bandwidth Hysteresis Current Control Noritaka Kinjo, Shin Kawai, Triet Nguyen-Van
08:00–09:30 Online Room-15 ONLINE	Online-TT-108: Mechatronics and Robotics Chairs: _____ IECON26-001541 Design and Control of a Soft Pneumatic Finger Anusree Mandali, Liangyu Pang IECON26-001631 Deep Learning-Based Robot Operating Condition Recognition Using Multi-Joint Motor-Current Time-Frequency Representations Kiwon Kim, Minseok Kim, Youngman Park, Seongsin Kim IECON26-001645 Kinematics-Aware Encoder--Gyro Preintegration for State Estimation of Spherical Rolling Robots Song Jin, Fengqi Zhang, Xiaoqing Guan, Bixuan Zhang, Wei Ren, You Wang IECON26-001664 Acoustic-Attention UAV Inspection for ROI-Oriented 3D Reconstruction: A Preliminary Field Study Taise Batista, Marlon M. López-Flores, Hebert Azevedo, Paulo Fernando Ferreira Rosa IECON26-001687 Inverse Kinematics for Robot Arm Control with Learned Warm Starts: A Comparison of Classical, Neural and Hybrid Solvers Md Ebrahim Hossain, Saikat Das, Arif Sarwat IECON26-001709 Data-Driven Control for Omnidirectional Platform Vitor Anello, Vinicius Oliveira
08:00–09:30 Online Room-16 ONLINE	Online-TT-109: Cyber-Physical Systems and Internet of Things in Industry Chairs: _____ IECON26-001557 Trusted Repository and Verification Registry Architectures for Authenticity of Digital Twins Haitham Al-Shami, Zijad Sivic, Riku Ala-Laurinaho, Juuso Autiosalo, Raine Viitala <i>continues on next page ►</i>

08:00–09:30 Online Room-16 ONLINE cont'd	<i>Online-TT-109: Cyber-Physical Systems and Internet of Things in Industry · continued</i> IECON26-001571 Belief Propagation-based Clock Synchronization for Large-Scale Multi-Hop TSN Jiahao Xu, Haoze Xue, Qimin Xu, Cailian Chen, Xinping Guan IECON26-001599 Towards Cyber-Physical Cognition: A Unified Ontology-Driven Knowledge Graph for Real-Time Autonomous Grid Operations Eman Hammad, Michael Mandulak, Ibrahim Shahbaz, Sathvik Sankaranarayanan IECON26-001650 A Protocol-Agnostic Edge Tool for OT/IT Integration: A Brownfield OPC UA Deployment Caio Oliveira, Flávia Pires, Jose Barbosa IECON26-001653 Data Partitioning Effects in Quantum Industrial Fault Detection Kauã Dalla Riva Cucco Barbosa, Everson Da Silva Flores, Bruna Guterres, Silvia Silva Da Costa Botelho, Marcelo Pias IECON26-001654 SpectraRAG: Dynamic Percentile-Threshold Routing for Low-Latency, Cross-Domain Hybrid Information Retrieval Shahid Rafique, Naveed Anwar, Muhammad Idrees, Naveed Akhtar, Sawera Arshad, Aziza I. Hussein
08:00–09:30 Online Room-2 ONLINE	Online-TT-110: Power Electronics Converters Chairs: _____ IECON26-001051 Electro-Thermal Comparison of Airgap Techniques in High-Frequency Planar Inductors Considering Series and Parallel Windings Bishwas Basnet, Nishan Withana, Prasad Jayathurathnage, Tero Halkosaari, Tomi Roinila, Paavo Rasilo IECON26-001106 Dual Update Loop Model Predictive Control for Active Power Decoupling and Reactive Power Optimization in Triple-Active-Bridge Converters Wei Jiang, Quanxue Guan, Yun Mou, Yuqian Fan, Xiaojun Tan, Likai Zheng IECON26-001143 A Low-CMV Switching-Sequence Design Framework for Fixed-Switching-Frequency Model Predictive Control of Vienna Rectifiers Abdul Nazer P, Harish Sudhakaran Nair IECON26-001196 Real-Time Hardware-in-the-Loop Simulation of an 18-Pulse Thyristor Rectifier for Renewable Energy Applications Manal Jaleel Poovathingal, Shriram Subramanian, Anirudh Guha IECON26-001197 Transferable Open-Circuit Fault Diagnosis for Matrix-type Single-stage Charging Power Modules Xin Jin, Yuxin Zheng, Wangzhang Cao, Wei Jiang, Chenyun Yu, Quanxue Guan IECON26-001214 A Unified Open-Circuit Fault Diagnosis Method for Dual Inverters with Isolated Supplies Using Line-Voltage Values Jie He, Haoyu Wan, Jian Yang, Daoliang You, Wanqiang Feng, Zhen Huang
08:00–09:30 Online Room-3 ONLINE	Online-TT-111: Electric Machines and Industrial Drives Chairs: _____ IECON26-001764 Active Disturbance Rejection Control of Induction Motor Drives Using a Higher-Order Extended State Observer Austin Allan, Uddhav Surve, Srirama Srinivas IECON26-000861 Performance and Design of Induction Excited and Induction Assisted Synchronous Generator(IISyG) Lokenath Chakraborty, Chandan Chakraborty, Debranjana Mukherjee IECON26-000884 Residual Based Data Driven Modelling for Early Inter Turn Short Circuit Detection in Inverter-Fed PMSM Drives Mehdi Jafari Javadi, Antonio Griffo, Rashid Ahmed Khan <i>continues on next page ►</i>

08:00–09:30 Online Room-3 ONLINE cont'd	<i>Online-TT-111: Electric Machines and Industrial Drives · continued</i> IECON26-001095 Data-Driven Dynamics Surrogate for an 8/6 Switched Reluctance Motor Trained on Closed-Loop FCS-MPC Trajectories Franklin Sánchez, Maria Isabel Milanes, Enrique Romero-Cadaval IECON26-001324 Autoregressive Kriging-based Variable-dimensional Space Mapping Surrogate Model for Small-Sample Multi-Objective Optimization of IPMSM Junzheng Zhang, Xin Ba, Qingyang Wei IECON26-001359 Predictive Current Control for Five-Phase Permanent Magnet Synchronous Motor Under High-Speed and Low-Carrier-Ratio Conditions Xinyue Zhang, Fufeng Yang, Yiqiao Zhou
08:00–09:30 Online Room-4 ONLINE	Online-TT-112: Renewable Energy and Energy Storage Systems Chairs: _____ IECON26-000836 State of Health Estimation for Lithium-ion Batteries based on Adaptive Feature Weighting and Hybrid Deep Learning Renchong Yang, Ruoyu Wang, Hangkai Zhang, Jinhai Jiang, Shenyihang Tan, Jinlei Sun IECON26-000792 Distributed Deep Reinforcement Learning for Energy-Aware Control of Multi-Agent Vertical Farm Vahid Ehteshami Bojnurdi, Mohammadreza Kaheni, Udayanto Dwi Atmojo, Valeriy Vyatkin IECON26-001074 Reinforcement Learning inspired to build an adaptive per-cell SOC estimator for Second-life batteries Joelton Gotz, Nathan Mendes, Alceu De Souza Brito Junior, Alceu André Badin IECON26-001003 Effects of Temperature on Sodium-Ion Battery Electrical Circuit Model Cesare Sandri, Roberto Di Rienzo, Niccolò Nicodemo, Federico Baronti, Roberto Roncella, Roberto Saletti IECON26-001017 Techno-Economic Analysis of an Autonomous System for a University Building Using Grey Wolf and Whale Optimization Majdi Amin IECON26-001057 Characterization and Modeling of Self-Discharge in Second-Life Lithium-Ion Batteries for Photovoltaic Self-Consumption Systems Ane Pérez, Idoia San Martín, Alfredo Ursúa, Pablo Sanchis
08:00–09:30 Online Room-5 ONLINE	Online-TT-113: Transportation Electrification and Automotive Technologies Chairs: _____ IECON26-001049 Distributed Optimal String Stability Control for Vehicular Platoon with Privacy Security Yejie He, Yong Chen IECON26-001503 Data-Driven Spatial Multi-Criteria Decision Analysis for Equitable Electric Vehicle Charging Station Deployment in Hyderabad, India Kurapati Abhijeeth, Prakhar Sharma, Pratyush Chakraborty IECON26-001545 A MABAC-Based Multi-Criteria Decision-Making FCS-PTC for Induction Motor Drives Ahmed Abouzeid, Ahmed Elsanabary, Mahmoud Saeed, Mokhtar Aly, Mohamed Abido, José Rodríguez IECON26-001710 Enhanced Interleaved Boost-Based Converter with Coupled Inductor and Quasi-Resonant Operation for Fuel-Cell Electric Vehicles Erfan Azimi, Qiang Wei IECON26-000041 Compact Low-Cost Single-Switch Multi-functional SiC Flyback EV Charger for G2V, S2V, and V2V Dhawal Dwivedi, Akshay Kumar Rathore <i>continues on next page ►</i>

08:00–09:30 Online Room-5 ONLINE <i>cont'd</i>	<i>Online-TT-113: Transportation Electrification and Automotive Technologies · continued</i> IECON26-001249 Post-Collision Phased Self-Stabilization Control for 6WID-EV Tao Jiang, Yong Chen, Yejie He
08:00–09:30 Online Room-6 ONLINE	Online-TT-114: Control Systems and Applications Chairs: _____ IECON26-000630 An EKF Radar-Camera Tracking Framework with Fog-Aware Adaptive Camera Covariance Scaling Shayma Alteneiji, Mohamed Alkhatib, Aleksej Makarov, Omar Alzaabi, Ahmed Altunaiji, Engy Farouk, Maryam Alhmoudi, Hind Albastaki IECON26-000656 Sparse Subsystem Identification for Reduced ESO Bandwidth in ADRC of a Maglev System Jeremy Scerri, Kevin Theuma IECON26-000663 Uncertainty-Triggered Active Sensing for UAV Maritime Rescue Prioritization under Wave Occlusion Nguyen Trinh Quy, Tran Thanh Vu, Pham Nguyen Khanh Nguyen, Thu Le IECON26-000737 LSTM-Based System Identification of a Quadcopter Osama Nagee, Mohammed Al-Ghaili, Sami Elferik IECON26-000740 Agent-Based Task Allocation and Deconfliction for Track-Bound Robots Operating in Shared Workspaces Shubhada Patil, Omar Ismail, Geritt Kampmann, Felix Gehlhoff IECON26-000099 Observer-Based Adaptive Finite-Time Fuzzy Control for Nonlinear Cyber-Physical Systems under Multiple Sensor Faults and Deception Attacks Xiangning Deng, Ning Zhao, Hao Sun, Zhaonan Chen
08:00–09:30 Online Room-7 ONLINE	Online-TT-115: Mechatronics and Robotics Chairs: _____ IECON26-000806 Congestion-Aware Coupled Task Allocation and Reservation-Based Path Planning for Warehouse AMR Fleets in a Simulation-Based Digital Twin Environment Jingze Zhang IECON26-000865 Programming and execution of skill-based human-robot-crane collaborative tasks Taneli Lohi, Markku Suomalainen, Roope Mellanen, Tapio Heikkilä IECON26-000869 ILMPC for a Pneumatic Muscle Actuated Ankle Rehabilitation Robot Using DE-Optimized Fuzzy NARX Shenglong Xie, Rui Wang, Jintao Chen, Xiuwen Hao, Hongxing Yuan, Shiyuan Bian IECON26-000905 Does Visual Perception Improve Pedestrian Trajectory Prediction for Autonomous Driving Dmytro Zabolotnii, Naveed Muhammad, Yar Muhammad IECON26-000912 Clutter-Resistant Vector Mapping for Industrial Environments using Kalman-Managed Features Caio Felipe Trindade Zehnder, Marco Teixeira, Marcelo Eduardo Pellenz IECON26-000046 Adaptive Quaternion Filter for Attitude Estimation Using IMU and MARG Abd Alati Ahmed, Gerry Geyer, Steven Liu

08:00–09:30 Online Room-8 ONLINE	Online-TT-116: AI Applications in Control, Mechatronics, and Robotics Chairs: _____ IECON26-000676 A Physics-Informed Explainable Vision Framework for Bow Wave Disturbance Modeling and Drogue Motion Prediction in Probe-and-Drogue Aerial Refueling Linhan Qiao, Zehua Zhang, Su Yang, Zicheng Fan, Zimeng Wu, Yaohong Qu IECON26-000720 GuardedLC: A Rule-LLM Interface for Lane-Change Command Interpretation Sun Hong Jung, Young Hoon Suh, Hyo Jin Park, Hye Hyeon Park, Hyejun Hong, Jae Jeon IECON26-000536 Residual-Aware Ellipsoidal Set-Membership Filtering for Ackermann-Steered UGVs with Unknown-but-Bounded Uncertainties Xinyu Qiu, Yilian Zhang, Xianwen Zhou, Dan Zhang IECON26-000370 A Saturation-aware Model for Adaptive Gain Control in Seismic Signal-based Elephant Detection Jaliya Wijayaraja, Malitha Wijesundara, Rasanga Edirisinghe, Janaka Wijekoon IECON26-000812 Delay-Bypassing Safe GNE Seeking for ICV Platooning via a Three-Tier Control Barrier Mechanism Dongjie Yang, Mingxin Kang, Yang Liu, Xinkai Chen IECON26-000936 End-to-End Driving Stabilization Using World-Model-Based Action Disagreement Detection Hyo Jin Park, Young Hoon Suh, Hye Hyeon Park, Hyejun Hong, Seung Yun Noh, Jae Jeon
08:00–09:30 Online Room-9 ONLINE	Online-TT-117: Instrumentation, Sensors, Actuators, and Micro-Nano Technology Chairs: _____ IECON26-000235 Polarization-Tuned Inverse Faraday Effect in Gold Nanorod Dimers Ye Mou, Qianyin Zheng, Peihong Cheng, Wenli Huang, Xingyu Yang, Yana Cui IECON26-001454 A Slot-Fed Rectangular Dielectric Resonator Antenna With Flat-Top Radiation Pattern for Indoor Microwave Wireless Power Transfer at 2.45 GHz Elham Norouzzadeh, Javad Ebrahimi, Alireza Bakhshai IECON26-001489 Thin Film Heat Flux Sensor for Ceramic Matrix Composite Engine Components Kevin Rivera, Otto Gregory IECON26-001646 Design and Experimental Validation of a Modular AS7265x-Based Testbed for Optical Water-Quality Sensing Abdellah Touhafi, Souhail Fatimi, Mimoun Lamrini IECON26-000243 Reliability-Aware TinyML Soft Sensing of Dissolved Oxygen on STM32 under Temporal Distribution Shift Kaiwen He, Anqi Huang, Xiaoping Yang IECON26-000007 Robust Secure Localization for WSNs Against Malicious Node Attacks Shengming Chang, Haojun Lin, Dongdong Lv
08:00–09:30 PR1 Office ONLINE	Online-TT-118: Transportation Electrification and Automotive Technologies Chairs: _____ IECON26-000446 Inband Communication for 1 kW Wireless Charging System for Electric Bikes Muhammad Hashir Waqass, Syed Muhammad Ahmed Mujeeb, Irteza Sanaullah Chaudhry, Abdullah Baig, Asif Ali, Tauseef Tauqeer IECON26-001026 Configuration-Aware Motion Control of a Reconfigurable Wheeled Robot Xiangyu Sun, An Zhao, Yuhui Guo, Boyi Wang, Yang Deng, Zhang Chen <i>continues on next page ►</i>

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08:00–09:30 PR1 Office ONLINE <i>cont'd</i>	<i>Online-TT-118: Transportation Electrification and Automotive Technologies · continued</i> IECON26-001657 Active Disturbance Rejection Control Based on Virtual Synchronous Generator for Grid-Forming Inverters in Weak Grids Chiagozie Emmanuel Anekwe, Uchenna Chibuzor Ngwu, Chisom Benedicta Nwabuisi, Hendel Huanca Choque, José Luis Azcue IECON26-000165 Optimal Sizing and Day-ahead Energy Management of a Renewable Hydrogen-based Microgrid Ayoub Chrif, Elhoussin Elbouchikhi, Abdelmajid Abouloifa, Mojtaba Hadi, Mohamed Machmoum, Lahoucine Id-Khajine IECON26-000602 Robust Power Flow Control of Quad-Active Bridge Converters Using Deep Reinforcement Learning Alamera Nouran Alquennah, Abdullah Berkay Bayindir, Sertac Bayhan, Ali Ghrayeb
09:30 2 parallel sessions	
09:30–10:30 Dafna - Banquet	Panel 3 Chairs: _____
09:30–10:30 Salwa 1	Panel 4 Chairs: _____
10:30	
10:30–11:00 Venue TBA	Coffee Break
11:00	
11:00–12:00 Dafna - Banquet	Keynote Prof. Samir Kouro <i>Partial Power Conversion: Enabling More Efficient Energy Transition Technologies</i>
12:30	
12:30–14:00 Venue TBA	Lunch Break
14:00 28 parallel sessions	
14:00–15:30 Basir	Onsite-TT-119: Power Systems and Smart Grid Chairs: _____ IECON26-001428 Prioritizing Capital Replacement Across Mixed Power System Assets: Multi-Criteria Decision-Making Tools Hesham Badahdah IECON26-001813 Impact of VSC Harmonic Modeling Representation on Harmonic Distortion and Resonance Prediction in Power Distribution Networks Tareq Foqha, Arash Beiranvand, Malabika Basu IECON26-001824 PLL Tuning and Grid Strength Govern Slow-Interaction Converter-Driven Stability of Grid-Following Inverters in Medium-Voltage Distribution Networks Samuel Ngotho, Malabika Basu, Michael Conlon IECON26-000867 Cost-Compliance Regimes for Voltage-and-Harmonic Power Quality Constraints in Unbalanced Multi-Microgrid EMS Jonathan Ntiaka Muzakwene, Bouzid Allal El Moubarek, Estibals Bruno, Tsafack Pierre, Alonso Corinne <i>continues on next page ►</i>

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14:00–15:30 Basir <i>cont'd</i>	<i>Onsite-TT-119: Power Systems and Smart Grid - continued</i> IECON26-001868 Sub-Synchronous Oscillation Assessment of a VSC-HVDC Link Using dq Frequency Scanning Raghad Aljindi, S M Mueen, Sertac Bayhan, Haitham Abu-Rub, Ahmed Massoud IECON26-000086 Spatial Propagation of Subsynchronous Oscillations in Multi-PMSG Wind Farm Systems under Weak Grid Conditions Tassneem Zamzam, Yazan Qiblawey, Abdulrahman Alassi, Haitham Abu-Rub, Miroslav Begovic, Ali Ghayeb
14:00–15:30 Dafna - Banquet	Workshop -2 (Siemens) Chairs: _____
14:00–15:30 Nakhil	Onsite-TT-120: Power Electronics Converters Chairs: _____ IECON26-000577 Priority Fitted Network-Based Optimization of Ferrite Structure in DD Coil WPT System Hafiz Adnan, Zihan Tian, Ali Muqtadir, Haisen Zhao IECON26-000710 Self-Inductance Aware Machine Learning Based Mutual Inductance Estimation for Series Series Inductive Power Transfer Systems Mahmoud Howaidi, Yousef Mahmoud IECON26-000289 Data-Driven Efficiency Mapping for Rapid LLC Resonant Converter Design Luiz Fernando M. Arruda, Skylar Coelho, Mohammad Farsijani, Mohammad Shadmand, Sudip Mazumder IECON26-000293 A Novel High-Efficiency 48V to 1V Converter for GPU Applications Using Resonant Topology Mohammad Farsijani, Luiz Fernando M. Arruda, Mohammad Shadmand, Sudip Mazumder IECON26-000406 A Hierarchical Reinforcement-Learning-Enhanced ECMS for Energy Management of Hybrid-Electric Tiltrotor Aircraft Ruixiang Wang, Yong Wang, Ziyang Chai, Xiangyang Wang, Shubo Yang, Wenjie Liu IECON26-001067 Dynamic Reconfigurable Multilevel Modulation Strategy for ANPC-H Converters in Wide-Speed-Range Motor Drives Yiming Sun, Chengming Zhang, Yang Wu
14:00–15:30 Room - PR4	Onsite-TT-121: Power Electronics Converters Chairs: _____ IECON26-001793 A Dual-Channel WPT System for Multi-Load Charging Based on PT Symmetric Concept Xukun Hou, Liang Huang, Giampaolo Buticchi, Salman Ijaz IECON26-001807 Harmonic Analysis of Phase Shift Modulation Schemes for Single Phase Dual Active Bridge DC/DC Converter: Generalization and Challenges Yasen Harrye IECON26-000697 Novel Modelling Analysis for Resonant Converters using Advanced Mathematical Functions Piyush Singh IECON26-001889 Adaptive Virtual Impedance for Fault Ride-Through of VSG-Based Grid-Forming Inverters Ahmed Lakhdar Kouzou, Muhammad F. Umar, Ali Sharida, Hussein Alnuweiri IECON26-001893 Multi-Objective Optimal Control of PV-Storage Systems by Combining MPC with Variable Prediction Horizon Yanmin Wang, Yangqing Li, Yuxiao Li, Fengling Han

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14:00–15:30 Room - PR4 <i>cont'd</i>	<i>Onsite-TT-121: Power Electronics Converters · continued</i> IECON26-001588 Torque-Balancing Method Based on Steady-State Equations for Independent Sensorless Control of Dual Three-Phase IPMSMs John Jairo Gelpud, Sami Ouazine, Ramkrishan Maheshwari
14:00–15:30 Room - PR5	Onsite-SS-40: Advanced Modeling, Control and Emerging Applications of Multiphase Electric Drives Chairs: _____ IECON26-001555 Application of gate-based quantum computing for site energy dispatch optimization Karen Wintersperger, Hila Safi, David Almagro-Cabrera, Jeremy Ralph Wiles, Brian Schmidly IECON26-001516 A Reliability-Enhanced PWM Strategy for Symmetrical Six-Phase Drives With Zero Common-Mode Voltage and Reduced Zero-Sequence Current Kotb Tawfiq, Ehab El-Saadany IECON26-000237 Fault-Tolerant Operation of a Six-Phase Symmetrical Open-End Winding Induction Motor Drive Yousef Alkayyali, Balanthi Beig, Khaled Al Jaafari IECON26-000568 A Temperature-Feedback-Based Dynamic DPWM Active Thermal Control Strategy for SiC MOSFET Inverters Wu Wei, Zehua Fu, Junliang Chen, Hao Xu IECON26-000803 Analytical Modeling of Common-Mode Voltages for PWM Inverter-Fed 3-Phase and Multiphase Machines Monika Jain, Prathap Reddy B IECON26-000835 Unified Model Predictive Control of LCL-Filtered Compact Multilevel Inverters with Seamless Islanding/Grid Transitions Mohammad Babaie, Majid Mehrasa, Amirhossein Hosseini, Kamal Al-Haddad
14:00–15:30 Room - PR6	Onsite-SS-41: Advanced data-driven performance assessment and fault-tolerant control for industrial automation systems Chairs: _____ IECON26-000380 Physics-Informed Instruction-Guided LLM Reasoning for Chiller Fault Diagnosis Under Uncertainty in smart buildings Maissa Boukaf, Fodil Fadli, Nader Meskin IECON26-001183 Lookback-Window Sensitivity in Multi-Step Household Energy Forecasting: LSTM, GRU, and SimpleRNN on the UCI Dataset Ali Jassim Lari IECON26-000164 Breaking the black-box bottleneck:interpretability analysis of sparse filtering for fault diagnosis based on inner product transformation and time-frequency plots Zhenhuan Sun, Zhiqiang Zhang, Wei Sun, Tao Yang, Zhi Li, Jiaming Li IECON26-001686 Vehicle-to-Grid Emulation and Interface Study Based on the ISO 15118-20 Paponson Indrachai-Ea, Anna Larsson, Xiaoliang Huang IECON26-000375 Ship Motion Displacement Prediction Based on VMD and Improved AOA-GRU for Wave Compensation Systems Hao Chen, Zijun Zhang, Qin Zhang, Xiong Hu, Youcef Belkhier, Mohamed Benbouzid IECON26-000185 Spatial-Harmonic-Based Variable Excitation for Global Loss Minimization in a Multiphase FSCW Self-Excited WRSM Ayman Abdel-Khalik, Hassan Ali, Taha Al Saadi

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14:00–15:30 Room - PR7	Onsite-SS-42: AI-2.0–Driven Strategies for Condition Monitoring and Prognosis in Power and Energy Systems: From Digital Twins and Cybersecure Predictive Maintenance to Emerging Foundation and LLM-based Models Chairs: _____ IECON26-000024 Foundation and Large Language Models in Digital Twin-Centric Condition Monitoring and Prognosis for Power and Energy Systems Mohamed Benbouzid IECON26-000256 A Three-Stage Unsupervised GRU-Autoencoder and Pseudo-Labeling Architecture for Intrusion Detection in Smart Microgrids Safa Safsafi, Safia Ines Benguiar, Mariem Bouslimani, Mohamed Benbouzid, Yassine Amirat IECON26-000266 Probabilistic Intra-Hour GHI Forecasting with TimesFM and Sky-Image Covariates Lu Zhang, Demba Diallo, Junjie Yang, Claude Delpha, Mohamed Benbouzid IECON26-000454 Bearing Fault Diagnosis using Convolutional Neural Networks and Decision Fusion Iman Makrouf, Mourad Zegrari, Demba Diallo, Weiqing Lu, Yujie Xu, Khalid Dahi IECON26-000553 Transformer-Based Biofouling Detection on Tidal Stream Turbines Under Severe Data Scarcity Ehsaan Ali, Youcef Belkhier, Haroon Rashid, Mohamed Benbouzid IECON26-001329 AI-Driven Oil and DGA Forecasting for HV Transformers Mohamed Shahawy, Janet Francis, Ateeq Ur Rehman
14:00–15:30 Room - PR8	Onsite-TT-122: Cyber-Physical Systems and Internet of Things in Industry Chairs: _____ IECON26-000135 Performance Optimization of Underwater Vehicles Power Architecture with Direct DC-Bus Supercapacitor and Predictive Energy Management Youcef Belkhier, Adel Oubelaid, Abdeslam Mamoune, Mohamed Benbouzid IECON26-000229 GTLeak: Graph Isomorphism Networks with Transformers for Water Leakage Detection Md Rakibul Ahasan, Mehna Lakshminarayanan, Rachad Atat, Erchin Serpedin, Abdulrahman Takiddin IECON26-001216 Design and Implementation of a TinyML-Based Predictive Maintenance System fo Ball Mill Condition Monitoring Takudzwa Haparimwe, Sibongile Natasha Malindi, M Takawira IECON26-000821 Edge-Conditioned Contrastive Graph Learning for False Data Injection Detection in Transmission Power Systems Mariam Elnour, Rachad Atat, Hasan Kurban, Abdulrahman Takiddin, Muhammad Ismail, Katherine R. Davis, Erchin Serpedin, Mariam Elnour IECON26-000460 Leveraging Asset Administration Shells to Achieve an Interoperable Manufacturing App Ecosystem Mohammed Ismael Ahmed, Basem Elshafei, David Sanderson, Jack Chaplin, Svetan Ratchev IECON26-000003 Black Flag Breach: ROP Attacks on Software PLCs Wael Alsabbagh, Kai Lehniger, Peter Langendörfer, Sam Tareque
14:00–15:30 Room - PR9	Onsite-TT-123: Power Electronics Converters Chairs: _____ IECON26-001276 Time-Series Planning of Localized Voltage Support in DER-Intensive Compact Urban Feeders Ahmed Ismail, Ziad Zaatar, Yazan Nakad, Ahmed Awad, Maged Baoumy, Morcos Metry <i>continues on next page ►</i>

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14:00–15:30 Room - PR9 <i>cont'd</i>	<i>Onsite-TT-123: Power Electronics Converters · continued</i> IECON26-001251 GPT-assisted physics-informed electric motor sizing Victor Goman, Jamal Alsawalhi IECON26-001158 Analysis of a Postregulated system based on a DCX Converter and Partial Power Converter for more efficient Data Centers Diego Rojas, Freddy Flores-Bahamonde, Hugues Renaudineau, Edivan Laercio Carvalho, Andrii Chub IECON26-001708 Thermal Performance Evaluation of Unbalanced-Flux Magnetics Rayen Selmi, Sobhi Barg, Manel Jebali-Ben Ghorba, Kent Bertilsson, Wissem Naouar IECON26-001101 Reconfigurable Full- to Partial-Power Converter for Flexible Residential Battery Energy Storage Application Edivan Laercio Carvalho, Newton Gabriel Feliciani Dos Santos, Neelesh Yadav, Vitor Pires, Freddy Flores-Bahamonde IECON26-001789 Mitigating Power Sources Degradation in Hybrid PV-FC-Battery USVs via Deep Reinforcement Learning Malek Nedjar, Mohamed Nadir Boukoberine, Bekheira Tabbache, Youcef Belkhier, Mohamed Benbouzid
14:00–15:00 Salwa 2	IES Journals Training Chairs: _____ <i>IES Journals Associate Editors and Reviewers Training</i>
14:00–15:30 Ginan ONLINE	Online-TT-124: Power Electronics Converters Chairs: _____ IECON26-000975 Impact of Fixed-Frequency Grid-Forming Control on Frequency Stability and PLL-based Dynamics of Grid-Following Converters Lasse Peltonen, Nida Riaz, Pertti Järventausta, Sami Repo IECON26-001758 Airgap Magnetic Field-Based Investigation of Cogging Torque Mechanism in Permanent Magnet Vernier Machines Saleh Edhah IECON26-000011 Minimal-Loss-Informed Neural Network for Permanent Magnet Synchronous Motors Zhenxiao Yin, Xueyan Wang, Yang Shen, Fobao Zhou, Yujia Zhang, Yonghang Zang, Hang Zhao IECON26-000514 Adaptive Integral Sliding Mode Predictive Control for PMSM Speed Regulation based on Back Propagation Neural Network Xueping Li, Tian Liu, Yongxi Yang, Shulin Wang, Jianzhen Qu, Xin Yuan IECON26-000223 A Novel Wireless Motor Position Transmission Method for Wireless Motors Drives Junjie Hao, Longfei Liu, Wen Ding, Yang Xiao IECON26-000019 A Novel Distributed Secondary Controller for Cable Impedance Compensation and Voltage Recovery in a Droop-Controlled Telecom DC Microgrid Mohd Khursheed, Shirazul Islam, Mohd. Arif Khan
14:00–15:30 Online Room-1 ONLINE	Online-TT-125: Power Systems and Smart Grid Chairs: _____ IECON26-001504 Analytical Sensitivities of a Voltage Collapse Proximity Indicator for Remedial-Action Ranking Abdelrahman Abdelkader, Sobhy Abdelkader, Mohammed Ben-Idris

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14:00–15:30 Online Room-1 ONLINE cont'd	<i>Online-TT-125: Power Systems and Smart Grid · continued</i> IECON26-001274 Reserve-Aware Stochastic Dispatch for Energy Security Coordination in Converter-Dominated Islanded Microgrids: The San Cristobal Case Study Sebastián Salazar Pérez, Jaime Cepeda, Gabriel Salazar Yépez, Edison Novoa, Eduardo Salazar, Sebastián Vaca IECON26-001678 Optimal Operating Point of TMR Sensor for Wide Range of Current Measurement in Metering and Protection Applications Siva Alagappa Kulathuran, Sukumar Brahma IECON26-000052 Adaptive Frequency-Selective Privacy Protection for Smart Meter Data Lincan Li, Shengming Chang IECON26-001786 Monetizing Data-Centre Flexibility Across French Day-Ahead and Intraday Continuous Markets Saif Ahmad, Seifeddine Ben Elghali, Hafiz Ahmed IECON26-001801 Physics-Constrained Human-in-the-Loop LLM Framework for Voltage-Violation Mitigation in Distribution Feeders Alaa Selim, Junbo Zhao, Wai Yan Win Aung
14:00–15:30 Online Room-10 ONLINE	Online-SS-43: Intelligent Defect Analysis, Quality Prediction, and Optimal Control for Precision Electronics Assembly Chairs: _____ IECON26-000184 Adaptive Coordinate Compensation for Surface Mount Technology Using Post-Reflow AOI Feedback Lei Gao, Zhengkai Li, Jinyong Yu, Hao Sun, Xinghu Yu, Zhihong Zhao, Tong Wang IECON26-000332 Component-Guided Paired Segmentation of SPI-Pre-AOI Images for Pre-Reflow SMT Process Monitoring Yang Cheng, Qin Zhao, Ruohong Xu, Jingyu Ding IECON26-000519 A Hierarchical Imitation Learning Framework for Microscopy Autofocus and Brightness Adjustment Aohan Li, Zhihui Lu, Gang Huang, Mingsi Tong IECON26-000530 CLRA-TTT: Cross-Layer Residual Attention with Mild Test-Time Training for Few-Shot Remote Sensing Scene Classification Qiansong Cheng, Zhiming Zheng, Nannan Liu, Pinhe Wang IECON26-000774 Process-Parameter-Decomposed Bayesian Optimization for Reflow Soldering Conveyor Speed Control Wenhao Su, Qin Zhao, Ruohong Xu, Jingyu Ding, Zhitai Liu IECON26-000844 A Gradient Boosting Regression Approach for Solder Joint Strength Prediction Under Varying SMT Conditions Yuqing Ran, Wan Tai, Jiayun Feng, Hanwen Feng, Taohan Wang
14:00–15:30 Online Room-11 ONLINE	Online-TT-126: Industrial Informatics, Cloud Computing, Big Data Chairs: _____ IECON26-000998 Edge-Fog IoT Architecture for Real-Time Electrical Monitoring of a Pyrolysis Furnace Mauro Leme, Gregor Umbelino, Ana Júlia Bezerra, Pedro Zanini, Ana Paula Ferreira, Silvana Costa, Bernardo Garcia, João Paulo Coelho, Helder T. Gomes, Flávia Pires, Jose Barbosa IECON26-001277 Reinforcement Learning-Based Process Knowledge Reuse and Sequence Revision Bo Fu, Jiahui Zheng, Kaiwen Zheng, Yuhan Zheng, Weiwei Qian <i>continues on next page ►</i>

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14:00–15:30 Online Room-11 ONLINE <i>cont'd</i>	<i>Online-TT-126: Industrial Informatics, Cloud Computing, Big Data · continued</i> IECON26-001310 A Lightweight Approach to Software Defined 5G Campus Networks With DevOps Maximilian Dietrich, Konrad Junkes, Markus Ammon, Sebastian Treib, Manuel Utsch, Eike Lyczkowski, Nour Ben Kebaier, Wolfgang Kiess IECON26-001369 LLM-Guided Three-Stage Conditional Evolution for Automatic Cache Policy Design Zitao Zhang, Yingnian Wu, Siyuan Jin, Jing Zhang, Lechen Zhang IECON26-001464 Downstream Evaluation of Missing-Data Handling for Reliable Sensor Time-Series Forecasting Lucas Ricce Correa, Alessandro Bicho, Rafael Berri, Giancarlo Lucca, Vagner Rosa IECON26-001652 WindowLog for Measuring the Action Window in Proactive Log Anomaly Detection Felipe Messias Duarte Dos Santos, Erico Leão, Ricardo Rabelo, Francisco Vasques, Paulo Portugal
14:00–15:30 Online Room-12 ONLINE	Online-TT-127: Power Electronics Converters Chairs: _____ IECON26-000078 Broadband SPICE Modeling of Common-Mode Chokes Including Core Saturation and Dispersion Christoph Brillinger, Christian Manfred Riener, Herbert Hackl, Mehtab Hussain, Martin Stoiber, Jose Romero Lopera, Bernhard Auinger IECON26-001221 Chattering-Free Super-Twisting Sliding Mode Control of Cascaded DC-DC Converters for Fuel Cell Integration in Shipboard Power Systems Liang Guo, Mohamed Trabelsi IECON26-001444 Generalized Current Ripple Analysis and Sizing Criteria for Interleaved Buck Converter Applied to Electrolyzer Systems for Hydrogen Production Alessandro Mazzola, Muhammad Muzammil Farooqi, Rosalinda Inguanta, Gioacchino Scaglione, Teresa Vitturi, Filippo Pellitteri, Rosario Miceli IECON26-001582 Current and Voltage Control of an Electrolyser through a Stacked-Interleaved Buck Converter Francesco Cherchi, Mario Porru, Alessandro Serpi IECON26-000823 ORION: Operational Reasoning and Intelligent Orchestration Network for LLM/SLM-Based Operational Intelligence Luiza Lopes, Vinicius Oliveira IECON26-000972 Enhancing the Fault Diagnosis Process in the Oil and Gas Industry via LLM-based Agent Nilo Monteiro, Theo de Sá, Alexandre Rodrigues, Flávio Varejão, Gabriel Baldon, Philippe Grippa, Thiago Oliveira-Santos
14:00–15:30 Online Room-13 ONLINE	Online-TT-128: Control Systems and Applications Chairs: _____ IECON26-001293 Observer-Based Robust Safety-Critical Control of Nonlinear Affine Systems with Input Saturation Haoyu Chai, Yong Chen IECON26-001351 Multi-Source Meteorological Time-Series Fusion with CNN-LSTM for Forest Surface Dead Fine Fuel Moisture Content Bo Peng, Kaichao Chen, Mingxin Kang, Xinkai Chen IECON26-001380 Asymptotical Output Feedback Stabilization of Probabilistic Logical Networks Chaoqun Dai, Yuqian Guo, Mingxin Kang, Xinkai Chen <i>continues on next page ►</i>

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14:00–15:30 Online Room-13 ONLINE <i>cont'd</i>	<i>Online-TT-128: Control Systems and Applications · continued</i> IECON26-001401 Feasible at Every Update: Time-Distributed Spiking-Driven MPC for Voltage-Constrained AC Drives on FPGA Ameer Hamza Khan IECON26-001406 Concurrent Learning-Based Resource-Constrained MPC for Multiple Nonlinear Systems under Limited Parallel Computing Resources Changyang Deng, Jicheng Chen, Dan Zhang, Marek Jasinski IECON26-001410 Cooperative Formation Path Following of USV Cluster Based on LOS-Backstepping Strategy Siying Wang, Yong Chen, Yejie He
14:00–15:30 Online Room-14 ONLINE	Online-TT-129: Cyber-Physical Systems and Internet of Things in Industry Chairs: _____ IECON26-001685 Calibrated Evidence-to-Risk Learning for Cyber-Physical Attack Triage in Power Systems Mohamed Massaoudi, Khandaker Akramul Haque, Maymouna Ez Eddin, Katherine Davis, Mahmoud Kabalan, Hassan Salamy IECON26-001733 Ontology-assisted LLM prompting framework for skill-based automation and robotic task planning Jingyun Zhao, Birgit Vogel-Heuser, Xinlong Wang, Haori Zhang, Yansong Wu, Dominik Hujo, Fan Wu, Andre Kraft, Gabriel Wiedon, Alois Knoll IECON26-001750 Joint Task Offloading and Uplink-Downlink Resource Allocation via 3C Co-Design for Industrial Multi-AGV Systems Qiaoni Han, Zimeng Qin, Qimin Xu, Xinping Guan IECON26-001711 Layer-Wise Attribute Sensitivity and Adaptive Fusion with Mixture of Experts in Deep Models for Color and Texture Classification Arlene Beuren, Leonardo Pinto, Jonathan Mastos, Jean Barddal, Alceu de Souza Britto Jr IECON26-001693 Physics-Grounded FMEA Knowledge Graphs for Label-Scarce Fault Detection at the Industrial Edge Diogo Rocha, Rui Pinto, Gil Gonçalves IECON26-001721 Improving Embeddings Using the Distributional Hypothesis in Evolving Textual Data Streams Cristiano Garcia, Alessandro Koerich, Alceu De Souza Britto Jr, Jean Paul Barddal
14:00–15:30 Online Room-15 ONLINE	Online-TT-130: Signal & Image Processing Methodologies Chairs: _____ IECON26-001522 Mining Parametric Signal Temporal Logic for Interpretable Fault Detection in HVAC Systems Thomas Ederer, Gernot Steindl, Jürgen Pannosch, Philipp Zech, Michael Houzar, Tobias Schwarzingger IECON26-001525 AeroFST: Few-Shot Source-to-Target Airfoil Flow Reconstruction from Sparse Measurements Yunfei Zhu, Haiteng Wang, Lei Ren IECON26-001533 Modality Reliability Estimation and Adaptive Fusion for Low-Altitude Aerial Target Classification Leiyu Chen, Xiao Dai, Shifan Chen, Songyin Mo, Ruiqi Shu, Xinggao Liu IECON26-001535 Calibration-First Detector-VLM Routing for Fixed-View Roadside Traffic-State Assessment Tong Zhang, Zhengzheng Fang, Tianqi Sun, Guiping Wang, Weiping Pan, Xiaotao Li, Yawen Niu <i>continues on next page ►</i>

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14:00–15:30 Online Room-15 ONLINE <i>cont'd</i>	<i>Online-TT-130: Signal & Image Processing Methodologies · continued</i> IECON26-001613 CT-P2-YOLO: Dual-Similarity Foreign-Matter Detection for Transparent PPR Pellets Hibo Lin, Xuedong Jing IECON26-001625 Frequency-Domain Filtering Fails on Simulated Multipath Ghosting in Aerial Imagery Naaga Kartheek Eadara, Ishidevesh Behera
14:00–15:30 Online Room-16 ONLINE	Online-TT-131: Cyber-Physical Systems and Internet of Things in Industry Chairs: _____ IECON26-000484 S²-IRLS: Dropout-Resilient Privacy-Preserving Localization via CRT Secret Sharing and Dual Masking Haojun Lin, Dongdong Lv, Shengming Chang IECON26-000488 DRIPL: Distributed Robust Iterative Privacy-Preserving Localization for Industrial IoT Haojun Lin, Dongdong Lv, Shengming Chang IECON26-000550 A Multimodal Sensing System for Real-Time Bolt Preload Monitoring Based on Strain Sensing and Ultrasonic Guided Waves Zhuowen Liu, Zicong Zhang, Hailing Fu, Deng Fang IECON26-001395 When Does Value-of-Information Targeting Pay Off for Photovoltaic Fleet Inspection Hasan Iqbal, Arif Sarwat IECON26-000179 Two-Stage Conditional Value-at-Risk Optimization for Risk-Aware Energy Management in Multi-Energy Microgrids Hadi Mojtaba, Elhoussin Elbouchikhi, Josep M. Guerrero, Maher Jridi, Daniel Morinigo-Sotelo, Abdelhakim Saim IECON26-000524 Resilient Secondary Control of Islanded Microgrids Against Heterogeneous False Data Injection Attacks via Channel-Wise Link Reputation Xiaofeng Li, Rongwu Zhu
14:00–15:30 Online Room-2 ONLINE	Online-TT-132: Power Electronics Converters Chairs: _____ IECON26-001223 An Open-Circuit Fault Diagnosis Method for Five-Level Active Neutral-Point-Clamped Converters Based on Multi-Hypothesis Current Residuals Yujie Chang, Bo Guan, Hailong Zhao, Shujie Gu IECON26-001242 Loss-Share-Adaptive Fixed-Budget Screening of Paired MOSFET Libraries for Synchronous Buck Converters Jiaxuan Hu, Weiqi Luo IECON26-001253 Mission-Profile and Uncertainty-Aware Coefficient Boundaries for Asymmetric MOSFET Sizing in Synchronous Buck Converters Jiaxuan Hu, Weiqi Luo IECON26-001287 Bidirectional Power Packet Transmission Using an Inductive Energy Buffer Yoshito Imanishi, Shiu Mochiyama IECON26-001305 Digital Zero-Crossing Distortion in CCM Totem-Pole PFC: A Mechanism-Oriented Analysis Amirali Mostaghis, Amirhosein Akbari, Sheldon Williamson IECON26-001367 Hybrid Control of LLC Resonant Converters via a Reduced-Order DPWA Model Amirreza Marandi, Farzad Tahami, Reza Heydaridizji, Ali Chahkandinezhad

14:00–15:30 Online Room-3 ONLINE	Online-TT-133: Electric Machines and Industrial Drives Chairs: _____ IECON26-001752 An Enhanced Four-Phase Y-Type Converter and Fault-Tolerant VF-FCS-MPC for SRM Drives Under IGBT Open- and Short-Circuit Faults Raul Intriago, Gabriel Andres Intriago Velasquez, Joao P. Carvalho Silveira, Tarcio Andre Dos Santos Barros, Marcelo Vinícius De Paula IECON26-000750 Adaptive Observer-Based Detection of Inter-Turn Short-Circuit and Demagnetization Faults in Permanent Magnet Synchronous Motors Ge Yang, Yebin Wang, Dehong Liu, Chungwei Lin, Bingnan Wang IECON26-001841 High-Performance Induction Motor Drive Topologies for Different Operation Modes Based on SAPF Makaruos Tallat, Mahmoud Saeed, Essam Ebeed, Abdelraheem Yosef, Mokhtar Aly, José Rodríguez IECON26-001717 Halbach Magnet Array Coreless Generator for Savonius Wind Turbines Noritaka Ishiyama, Shunichi Sakurai, Daiki Sodenaga, Seiichiro Katsura IECON26-001823 Which Renewable Technology Carries the Most Materials-Price Risk A Mineral Transmission Network Projected onto Bills of Materials Abdulla Al-Haddad IECON26-001829 Multi-Sampled PWM Enabled Passivity Enhancement and Voltage-Feedforward Simplification for Grid-Following Doubly-Fed Induction Generator Systems Zixiang Qin, Shan He, Xin Sui, Shuang Zhao, Wei Wu, Lijian Ding
14:00–15:30 Online Room-4 ONLINE	Online-TT-134: Renewable Energy and Energy Storage Systems Chairs: _____ IECON26-000921 A Reduced-Switch Dual-Source Inverter with Voltage-Summation Capability for PV Battery Integrated Systems Javad Ebrahimi, Hosein Ghojavand, Suzan Eren IECON26-001131 Analysis and Mitigation of Induction Motor Starting Transients in Islanded PV-ESS Microgrids Li Sun, Bingwen Dang, Tiancheng Zhou, Ye Cao, Yanan Wang IECON26-000824 Homomorphically Encrypted Unsupervised Federated Learning for Condition Monitoring in Wind Turbines Chibuike Azubuine, Raj Mani Shukla, Bernardi Pranggono IECON26-001188 Electrochemical Impedance Spectroscopy Controller Based on a CLLC Resonant Converter For Battery Energy Storage System Shivam Saini, Kaushik Rajashekara, Krishna Raj Ramachandran Potti IECON26-001211 Dynamic Modeling and Nonlinear Predictive Control of a Parachute-Based Airborne Wind Energy System Xinhao Li, Wenbo Chen, Jianning Lu, Zhen Hua IECON26-001259 Intelligent battery management system composed of hardware and random forest model to identify and interrupt the failures for lithium-ion battery Joelton Gotz, Nathan Mendes, Alceu De Souza Brito Junior, Alceu André Badin
14:00–15:30 Online Room-5 ONLINE	Online-TT-135: Transportation Electrification and Automotive Technologies Chairs: _____ IECON26-001572 Converter-Wide DFMEA and System-Level Fault Propagation Analysis of an Isolated EV Charging System Chinmaya Joshi, Gaurang Vakil, Saul Lopez Arevalo

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14:00–15:30 Online Room-5 ONLINE cont'd	<i>Online-TT-135: Transportation Electrification and Automotive Technologies · continued</i> IECON26-001669 Endpoint Conditional QoS Enforcement for Zenoh over Automotive Time-Sensitive Networking Beomgi Suh, Sung Bhin Oh, Young Soo Do, Jae Jeon IECON26-001556 Middleware Deployment Trade-offs in Zonal E/E Architectures: The Cost of Composing Zenoh Routing with DDS Interoperability Seung Min Ma, Seung Uk Son, Beomgi Suh, Young Soo Do, Sung Bhin Oh, Min Young Chung, Jae Jeon IECON26-000596 Pitch Suppression and Regenerative Energy Evaluation of a Rear-Wheel-Drive Electric Vehicle Kunpeng Wu, Kan Akatsu IECON26-001768 Coordinated Backstepping Control of an EV Charger Based on a Three-Phase LCL-Filtered Rectifier and an Interleaved DC-DC Converter Abdelmajid Abouloifa, Chaouqi Aouadi, Oumaima Joraiche, Abdelali El Aroudi IECON26-001237 Safety-Critical Cooperative Pursuit-Evasion Game for UAV-UGV Systems with Self-Triggered Intermittent Communication Hongye Zhang, Yong Chen
14:00–15:30 Online Room-6 ONLINE	Online-SS-44: Stability Control, Analysis and Implementation of Grid-following/Grid-forming Renewable Energy Systems Chairs: _____ IECON26-000141 Virtual Inertia and Damping Feedback Control for Enhanced Grid-Forming Inverter Performance Under Disturbances Xia Zhengbang, Zhilei Yao IECON26-000208 Concept of Asymmetric and Symmetric Grid-Forming Control From a Power-Regulation Perspective Zheran Zeng, Shimiao Chen, Dongsheng Yang IECON26-000501 Forced Low Frequency Oscillation of A GFM-GFL Mixed MG: A Duffing Oscillator-Based Evaluation Xinyue Wu, Shu Gao, Changyue Li, Yuhua Du, Yigeng Huangfu, Aili Fan, Yongcan Zhu, Meng Cheng, Qinqian Li IECON26-000664 Impedance Analysis of an Islanded Microgrid Considering the Fundamental Frequency Dynamics Pablo Rodríguez-Ortega, Dionysios Moutevelis, Milan Prodanovic, Javier Roldan-Perez IECON26-000707 Predictive Impedance-Shaped Synchronization for Island-to-Grid Reconnection of Grid-Forming DER Inverters Xinrui Li IECON26-001212 Cyber-Resilient Practical Predefined-Time Power and SoC Coordination of Converter-Interfaced BESS Clusters in Industrial DC Microgrids Peiyu Guo, Yang Cao, Dezhi Xu, Wangli He
14:00–15:30 Online Room-7 ONLINE	Online-TT-136: Mechatronics and Robotics Chairs: _____ IECON26-000313 Study on a Universal Pick-and-Place Method for Multiple Grippers Based on Alternating Odd and Even Rows Yana Cui, Peihong Chen, Jianyu Bao, Ye Mou, Ka Zhang IECON26-001066 Place Recognition for UAVs by Sparse Visual Inertial Mapping and 3D Point Cloud Descriptor Sayan Pal, Alok Kanti Deb IECON26-001068 BEAST: Design and Development of a Bio-Engineered Octopod Mechanism for Heavy Payload Transportation Narasimha Ganta, Umanand L, Gopakumar K <i>continues on next page ►</i>

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14:00–15:30 Online Room-7 ONLINE <i>cont'd</i>	<i>Online-TT-136: Mechatronics and Robotics · continued</i> IECON26-001102 Actuator-Space Modeling and Control of a Dual-Axis Thrust-Vectoring Platform Lundon Salley, Connor Calme, Luis Zapata-Rivera, Aldo Munoz-Vazquez IECON26-001260 Trajectory Optimization of Lumbar Massage Robot with Minimum Joint Impact as Optimization Objective Juntao Wang, Shenglong Xie, Hongxing Yuan IECON26-001308 A ROS2-Based Omni-Directional AGV for Indoor Industrial Mobility with LiDAR-Guided Obstacle Response and Vision-Based Command Recognition Mahdi Yazdanpour, Nick Delaet, Seth Burghard, Mason Powers
14:00–15:30 Online Room-8 ONLINE	Online-TT-137: AI Applications in Control, Mechatronics, and Robotics Chairs: _____ IECON26-000886 Deep Reinforcement Learning for Dynamic Interception of Quadruped Robots in Sparse Reward Environments Chao Guan, Pinyan He, Qiubo Zhong IECON26-000974 Topological Mapping via Visual Place Recognition Using Circular Shifts of 360-degree Panoramic Images and Spatial Consistency Check Hiroki Tsukoshi, Yoshitaka Hara, Yoji Kuroda IECON26-000988 Game-Guided Disturbance Utilization for Spacecraft Attitude Tracking Control Boqun Wang, Runkun Lin, Chenxu Qiu, Jianbin Qiu IECON26-001020 UltraLight Luma: A Novel Edge-Deployable Perception Network for Crop-Row Segmentation in Agricultural Robotics Dhanushka Balasingham, Shamod Ginigaddarage, Hanojhan Rajahrajasingh, Nuwan Kodagoda, Rajitha De Silva IECON26-000808 Explainable Deep Learning for Photovoltaic Thermal Anomaly Classification Using Infrared Images Naveed Anwar, Aziza I. Hussein, Ervina Efan Mhd Noor IECON26-001217 An RD-RRT Method for Safe Obstacle-Avoidance Path Planning of Industrial-Grade UAVs Integrating Reinforcement Learning and Rhombus Sampling Zongqi Du, Chaoze Lu, Qifeng Zou, Haixuan Wang, Zhiyong Yang
14:00–15:30 Online Room-9 ONLINE	Online-TT-138: Cyber-Physical Systems and Internet of Things in Industry Chairs: _____ IECON26-001061 Experimental Evaluation of Stereo Vision Reconstruction Error in Crane Digital Twins Juliana Dos Santos, Murilo Bicho, Tony Froes, Gabriel Dorneles, Richard Assis, Pedro Edom, Silvia Botelho, Eder Mateus Gonçalves, Marcelo Pias IECON26-001157 AWS Integrated Smart Irrigation System Using Internet of Things and Machine Learning Khadijah Umair, Zakria Qadir, Zawar Shah, Mukter Zaman, Javad Rezazadeh IECON26-001170 Distributed Optimization of Modular Production Systems using Model-based Reinforcement Learning with Inverse Models Andreas Schwung, Steve Yuwono, Sofiene Lassoued, Dorothea Schwung IECON26-001171 A Privacy-Preserving Crowdsourced Localization Scheme with Fitness-Based Anchor Selection Sunkang Lin, Shengming Chang, Davy Tsz Kit Ng, Tuozhong Yao, Na Yang, Artur Madal IECON26-000360 Model-based Solution Towards an Adaptable Function Implementation for Industrial CyberPhysical Systems Michael Zeise, Martin Wollschlaeger <i>continues on next page ►</i>

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14:00–15:30 Online Room-9 ONLINE <i>cont'd</i>	<i>Online-TT-138: Cyber-Physical Systems and Internet of Things in Industry · continued</i> IECON26-000168 PriVerLoc: A Privacy-Preserving and Verifiable Localization Algorithm for Resource-Constrained WSNs Yifan Pang, Shengming Chang, Tuo Zhong Yao
14:00–15:30 PR1 Office ONLINE	Online-TT-139: Power-Electronic-Enabled Control and Market-Oriented Operation of Smart Microgrids: Optimization, Demand Response, and Peer-to-Peer Energy Trading Chairs: _____ IECON26-001584 Grid-Forming Strategies for Single-Stage PV Inverters Considering PV dynamics Andoni Urtasun, Javier Puy, Luis Marroyo, Octavian Curea, Gerardo Becerra IECON26-000552 Single Image Super-Resolution with Adaptive Blocked Multi-axis Attention Transformer Bin-Cheng Yang, Gangshan Wu IECON26-001325 Cognitive Effects of Textual, Graphical, and Interactive Explanations in Explainable Artificial Intelligence Muhammad Umair Danish, Memoona Aziz, Umair Rehman, Katarina Grolinger IECON26-001327 Human-Centered Explainable Artificial Intelligence and the Effects of Explanation Modalities on Trust, Understanding, and Decision Making Muhammad Umair Danish, Memoona Aziz, Umair Rehman, Aleksandra Zecevic, Katarina Grolinger IECON26-001058 Physics-Informed Neural Ordinary Differential Equations for Condition Monitoring of a DC-DC Converter Camilo Garcia Tenorio, Bashir Bakhshideh Zad, Olivier Deblecker IECON26-000390 Hybrid Control Converter: Improving IBR Grid Support Capabilities and Flexibility Francisco Kleber Lima, Luiz Andre Lima, Edson Watanabe, Camila Fernandes, Gleydson Neves, Marcelo Soares, Behrouz Zoghdar, Moataz El Sied
15:30	
15:30–16:00 Venue TBA	Coffee Break
16:00	
27 parallel sessions	
16:00–17:30 Basir	TC Meeting - 2 Chairs: _____ <i>TC Meeting</i>
16:00–17:30 Dafna - Banquet	Workshop - 3 (Typhoon) Chairs: _____
16:00–17:30 Nakhil	TC Meeting - 3 Chairs: _____ <i>TC Meeting</i>
16:00–17:30 Room - PR4	TC Meeting - 4 Chairs: _____ <i>TC Meeting</i>

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16:00–17:30 Room - PR5	TC Meeting - 5 Chairs: _____ <i>TC Meeting</i>
16:00–17:30 Room - PR6	TC Meeting - 6 Chairs: _____ <i>TC Meeting</i>
16:00–17:30 Room - PR7	TC Meeting - 7 Chairs: _____ <i>TC Meeting</i>
16:00–17:30 Room - PR8	TC Meeting - 8 Chairs: _____ <i>TC Meeting</i>
16:00–17:30 Room - PR9	TC Meeting - 9 Chairs: _____ <i>TC Meeting</i>
16:00–17:30 Ginan ONLINE	Online-TT-140: Cyber-Physical Systems and Internet of Things in Industry Chairs: _____ IECON26-000795 A Real-Time Adaptive Framework for Coordinated Multi-Link Replay Attack in DC Microgrids Saqib Ali, Andrii Chub, Hayretin Bahsi IECON26-000971 A Credit-Based Framework for Fair Access to Shared Battery Energy Storage in Local Energy Communities Izviye Fatimanur Tepe, Erdal Irmak IECON26-000769 UAV-based Smart Terrain Following Xiaobo Wu, Youmin Zhang, Amin Taherzadeh, Huajun Dong IECON26-000770 ITB-PP Planner for Aerial Firefighting Xiaobo Wu, Youmin Zhang, Linhan Qiao IECON26-000957 CLIPTrack-SAM: Fast-Adapting Semantic Tracking for Industrial Assembly via CLIP and SAM Sheng Liu, Shijun Yan, Haiyue Zhu, Jingbing Zhang IECON26-000096 Hybrid Fourier-Neural-Expert Model for Early Rubbing Detection in Steam Turbine Flow Path Fedor Mitin, Artem Popov
16:00–17:30 Online Room-1 ONLINE	Online-TT-141: Power Systems and Smart Grid Chairs: _____ IECON26-000525 Synchronization Stability Mechanism of Hybrid Grid-Forming and Grid-Following Control With Current Constraint Haoran Wang, Rongwu Zhu, Ji Qi, Yong Yi IECON26-001510 Distributed Multi Objective Scheduling of ESS and V2G in Microgrids Yunlun He, Zehua Ye, Fanghong Guo, Dan Zhang, Marek Jasinski IECON26-001356 Multi-Agent Battery Digital Twin for Robust State of Charge Estimation via Spatial Temporal Graph Attention Networks Muhammad Usman Shoukat, Wang Wenshuo, Awais Khan, Muhammad Usman Shams, Muhammad Imtiaz, Muhammad Yousuf

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16:00–17:30 Online Room-1 ONLINE <i>cont'd</i>	<i>Online-TT-141: Power Systems and Smart Grid - continued</i> IECON26-000471 Enhanced Impedance Scanning Method for Assessment of Multi-Converter Power System Stability in Real-Time Simulator Muassar Hameed, Maria Camila Castrillon-Franco, Peter Palensky, Jose Luis Rueda IECON26-001623 Protection-Constrained Allocation of BESS Converter Ratings for Data-Center Ride-Through and Frequency Support Yansong Pei, Chandan Chaudhary, Abanish Tiwari, Mohammed Ben-Idris, Joydeep Mitra IECON26-000363 An Integrated Active Sensing System for On-Board Bolt Preload Monitoring Zicong Zhang, Hailing Fu, Zhuowen Liu, Deng Fang
16:00–17:30 Online Room-10 ONLINE	Online-TT-142: Industrial Informatics, Cloud Computing, Big Data Chairs: _____ IECON26-001821 Zero-Shot Fault Diagnosis of an Aircraft Fuel System via Model Context Protocol-Based Knowledge Graph Querying and LLMs Franz Christopher Kunze, Felix Janzen, Manjinder Singh, Tom Westermann, Alexander Diedrich, Gianluca Manca, Felix Gehlhoff, Oliver Niggemann, Alexander Fay IECON26-001827 Behavior-Model-Informed Reinforcement Learning for Operator Prompt Timing in Human-Centric Industrial Systems: A Simulation Ablation Study Gabriel Viana, Giuliano Caporrino, Bruno Machado Lobato, Vagner Da Rosa, Alessandro Bicho IECON26-001467 Horizon-Time Limits in Real-Time Iteration MPC for Agile Quadrotor Flight, and When FPGA Offload of the Condensed Hessian Pays Jie Sheng, Souleymane Dembele IECON26-001606 Zephyr for the Industrial Internet of Things: A Case Study Using Ethernet-APL and MQTT Nicolas Coppik, Tobias Dörr, Roland Braun, Philipp Bauer IECON26-000755 Capacitor Health Status Assessment in Boost Converters: A Data-Driven Approach Acacio Amaral IECON26-001538 An EV Fast Charger Utilizing a Six-Switch Rectifier and Three-Phase Interleaved Buck Converter with Soft Switching and CP CV Charging Protocol Ahmed Alfouly, Hugo Valderrama-Blavi, Rachid Errouissi, Abdelali El Aroudi
16:00–17:30 Online Room-11 ONLINE	Online-TT-143: Power Electronics Converters Chairs: _____ IECON26-001699 Moving Target Defense via D-FACTS Reactance Perturbation Against False Data Injection Attacks: Effectiveness and Hiddenness Analysis Md Abu Taher, Anwer Shees, Mohammad Ashiqur Rahman, Arif Sarwat IECON26-001741 Optimized Event-Driven Resilient Control for FDI Attacks on DER Reactive Power Coordination Mengzhi Wang, Raja Ayyanar, Vijay Vittal IECON26-001594 A Seven-level Switched-Capacitor Inverter With Equal-Voltage Flying Capacitors and Expanded Switching-State Redundancy Arshia Esmail Tehrani, Javad Ebrahimi, Alireza Bakhshai IECON26-000922 Five-Degree-of-Freedom Modulation with ZVS for Neutral-Point-Balanced Three-Level NPC Dual-Active-Bridge Converters Seyed Hamidreza Mousavi Tabar, Javad Ebrahimi, Alireza Bakhshai IECON26-000929 A Deep Reinforcement Learning-Based Control Approach for a DC-DC Bidirectional DISO Power Converter in a DC Microgrid Amirhossein Hosseini, Saeed Hosseinnataj, Majid Mehrasa, Mohammad Babaie, Kamal Al-Haddad <i>continues on next page ►</i>

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16:00–17:30 Online Room-11 ONLINE cont'd	Online-TT-143: Power Electronics Converters · continued IECON26-000931 Secure Sensing Framework of a Multiport DC-DC Converter Using a Deep Learning-based Nonlinear Controller Amirhossein Hosseini, Saeed Hosseinnataj, Majid Mehrasa, Mohammad Babaie, Kamal Al-Haddad
16:00–17:30 Online Room-12 ONLINE	Online-TT-144: Power Electronics Converters Chairs: _____ IECON26-001641 Output Stage Design Options for the High-Frequency Isolated Full-Bridge DC-DC Converter Ersin Aksu, Ahmet Masum Hava, Can Gurtunca IECON26-000459 Experimental Data-Based Static and Dynamic Modeling of a Proton Exchange Membrane Electrolyzer Interleaved Buck Converter System Hoda El Assal, Mamadou Bailo Camara, Damien Guilbert IECON26-000559 Active Damping Gain Impact on Inverter Loss and Junction Temperature in Multi-Mass Drive Systems Jingru Zhou, Xiong Liu, Zhifeng Huang, Jishnu Kavi Kambrath IECON26-001130 Radial Bias Function Neural Network Based Hall Sensor Fault Diagnosis and Reconstruction of Signal for Speed Control of BLDC Motor Drive Amit Kumar, Ganesh Chandramouleeswaran, Saravanan G, Roland Ryndzionek, Raja Krishnamoorthi, Gianluca Gatto IECON26-000652 Constraint-Aware Bayesian Optimization for PID Tuning: Discovering Plant-Specific Control Strategies Prince Baah-Mensah, Stephen Armah IECON26-001463 Exogenous Feature Value Under Chronological Validation of Data Center PUE Forecasting Models Mouna Nassim, Mohamed Bezza
16:00–17:30 Online Room-13 ONLINE	Online-TT-145: Cyber-Physical Systems and Internet of Things in Industry Chairs: _____ IECON26-000500 Using Zero-shot Large Language Models for Smart-Meter Energy-Theft Identification Emran Altamimi, Moaz Jemmeh, Abdulaziz Al-Ali, Qutaibah Malluhi IECON26-001139 Deterministic Execution of Containerized Virtual PLCs on IT-Based Hardware: An Experimental Evaluation for Motion-Control Workloads Nour Ben Kebaier, Svenja Strauss, Eike Lyczkowski, Riccardo Venanzi, Luca Foschini, Mike Barth IECON26-000384 Experimental Evaluation of an Edge-Enabled IoT Smart Meter for Real-Time Energy Monitoring Anibal Calle-Zuniga, Washington Velásquez Vargas, Fabio Garcia-Gomez IECON26-000937 Evaluating AEAD Cryptography for IoT Smart Metering under Variable Wireless Conditions Anibal Calle-Zuniga, Washington Velásquez Vargas IECON26-000983 Towards Protection of Privacy-Related Information in Telexistence Robot Operations Katsuki Hosokawa, Naoki Hirakura, Kohei Tokoi, Sousuke Nakamura, Hiroyuki Okada, Arvin Agah, Eimei Oyama IECON26-000686 Adaptive Super-Twisting Integral Nonsingular Terminal Sliding Mode Control for Precision Motion Systems Liang Xia, Hu Li, Xiaoqing Li, Yifeng Shao, Yixin Xu, Zhenlong Cao

16:00–17:30 Online Room-14 ONLINE	Online-TT-146: Power Systems and Smart Grid Chairs: _____ IECON26-001370 Magnetic Signature Reconstruction of Closely Spaced Hall-Effect Sensor Arrays for Reliable Ammunition Bin Identification in Armoured Fighting Vehicle Autoloaders Sushanthika Jambukesan, Selvathai T, Rajaseeli Reginald IECON26-000440 Integral Design of Observer for Ultra-Local Model-Free Controller in Electric Motors Zhenxiao Yin, Chencheng Dong, Shi-Wei Ricky Lee IECON26-001408 Model-Free Predictive Control for Grid-Forming Inverters Using Coupling-Based Regressor Vectors Min Huang, Liuting Wang, Kangan Wang, Lixun Zhu, Zhilei Yao, Weimin Wu IECON26-001830 Transition between Grid-connected and Islanded Operation of AI Data Centers Using Grid-Forming Inverters Amirhosein Gohari Nazari, Uzair Asif, Harsha Vardhan Reddy Modugu, Mohammad Shadmand IECON26-001319 Soiling Detection and Its Discrimination from Confounders in an Off-Grid Single-String PV System Using a Digital Shadow Halil Ertas, Ugur Fesli, Sevki Demirbas, Kemal Çelik, Mustafa Bahadır Ozdemir IECON26-000477 Dynamic droop specifications for Grid-Forming Inverter-Based Resources Jennifer Bui, Dominic Gross, Deepak Ramasubramanian
16:00–17:30 Online Room-15 ONLINE	Online-TT-147: Renewable Energy and Energy Storage Systems Chairs: _____ IECON26-001617 A Modular Edge IoT-based Architecture for Smart Public Lighting Infrastructure: Intra-Pole Communication Tests Luís Lopes, Carlos Alcantara, Flávia Pires, Jose Barbosa, Beatriz Cristina De Faria, Tiago Pedrosa, Tiago Silva, João Paulo Coelho IECON26-001774 Quantifying Zenoh-Based OTA for Zonal SDVs: Integration Depths and Completion Semantics Jeong Ho Ahn, Young Soo Do, Sung Bhin Oh, Young Min Kim, Seung Uk Son, Beomgi Suh, Min Young Chung, Jae Jeon IECON26-001145 A Sparse Polynomial Degradation Model with Bayesian Online Updating for Lithium-Ion Battery Remaining Useful Life Prediction Bac Viet Nguyen, Hieu Le Van, Jae Jeon IECON26-000294 Adaptive Obstacle Avoidance Control for Mecanum-Wheeled Robot System with Input Delay Zhihong Zhao, Zhengkai Li, Mariusz Malinowski, Juan J. Rodriguez-Andina IECON26-000960 Modulation Strategy Assessment for Optimized Dual Active Bridge DC-DC Conversion Erdal Bekiroglu, Mücahit Hakan Mun IECON26-001784 Kramers-Kronig-Consistent Gaussian Process Prediction of Lithium-Ion Battery Impedance Spectra Across States of Charge Fahrettin Ay, Ahmet Kutay Aydogan, Anas Karaki, Sertac Bayhan, Haitham Abu-Rub, Erchin Serpedin
16:00–17:30 Online Room-16 ONLINE	Online-TT-148: Transportation Electrification and Automotive Technologies Chairs: _____ IECON26-001567 Energy Fusion: High Gain DC-DC Converter Integrating Fuel Cell and Battery in Multi-Operational Modes Shahbaz Ahmad Khan, Jamal Alsawalhi, Balanthei Beig, Vinod Khadkikar <i>continues on next page ►</i>

16:00–17:30 Online Room-16 ONLINE cont'd	<i>Online-TT-148: Transportation Electrification and Automotive Technologies · continued</i> IECON26-001587 Public-only EV Charging Sufficiency for Monthly Driving Routines in Qatar Irfan Alp Gurkaynak, I Safak Bayram, Usman Zafar, Sertac Bayhan IECON26-001596 A Continuous Robust Observer for Rotor Flux and Speed Reconstruction in Five Phase Induction Motor Drive Sesadri Bhusan Sahoo, Ranjan Behera, Balanthi Beig IECON26-000465 Multi-Agent Multi-Objective Actor Critic Energy Management for Battery Supercapacitor Hybrid Storage in Electric Vehicles Islam Sayed, Yousef Mahmoud IECON26-001243 Temporally Validated User-Level Clustering of Public AC Charging Behaviour: Multi-Year Evidence from a UK Network I Safak Bayram, Ali Saad, Sertac Bayhan IECON26-000842 High-Power Powertrain DC Architectures for Non-Road Mobile Machinery Md Nasim Sarkar, Pasi Peltoniemi
16:00–17:30 Online Room-2 ONLINE	Online-TT-149: Power Electronics Converters Chairs: _____ IECON26-001695 Optimal Fractional-Order PID Controller-Based Voltage Regulation in Buck Converter Feeding Constant Power Loads: A Hardware-in-the-Loop Validations Diego Obando Beltrán, Alvaro Hoffer, Moslem Dehghani, Daniel Pensantez, Patricio Burgos, Freddy Flores-Bahamonde, José Rodríguez, Alvaro Prado IECON26-001457 Nested Soft-Switching Criteria and a Closed-Form Optimal Dead Time for SiC Dual-Active-Bridge Modules in Medium-Voltage ISOP Solid-State Transformers Motasem Talafha IECON26-001547 Switching Loss Distribution for Dual Inverter With Isolated Supplies Using Fixed Clamping Regions Yuhang Hu, Fangzhe Li, Shihua Xu, Daoliang You, Zhen Huang IECON26-001589 A Time-Division Carrier-Based Modulation Strategy for Multi-Port Three-Phase DC-AC Converters Xinyi Yan, Yi Wang, Hao Qin, Celine -, Yan Deng, Abhishek Kumar IECON26-001675 RE-INTEGRATE: Electromagnetic Transient Modeling and Benchmarking of Single-Phase Front-End Converters for Data-Center Applications Kazi Ishrak Ahmed, Shamim Hasan, Suman Debnath IECON26-001684 Interval Type-2 Fuzzy Fractional-Order PID Controller Based on a Partial Power Converter for Fast Charging of Lithium-Ion Batteries in Electric Vehicles Daniel Pensantez, Moslem Dehghani, Kevin Marlon Soza Mamani, Alvaro Hoffer, Freddy Flores-Bahamonde, José Rodríguez, Alvaro Prado
16:00–17:30 Online Room-3 ONLINE	Online-TT-150: Renewable Energy and Energy Storage Systems Chairs: _____ IECON26-001294 Multi-Temperature Adaptive Extended Kalman Filtering for Robust Lithium-Ion Battery SOC Estimation Under Dynamic Operating Conditions Tofik Seid Ali, Yong Chen, Haoyu Chai IECON26-001331 Optimal Fixed and Tracking PV System Configurations under Time-of-Use Scheduling: A Comparative Techno-Economic Analysis Md. Zobair Kabir, Md. Nafizul Islam Neion, A S M Jahid Hasan IECON26-001831 Adaptive Source-Based Normalization for Improved RNN Energy Prediction in Digital Twins Adel Mounir Said, Hossam Afifi, Michel Marot, Hassine Mounle, Heba Allah Sayed <i>continues on next page ►</i>

16:00–17:30 Online Room-3 ONLINE cont'd	<i>Online-TT-150: Renewable Energy and Energy Storage Systems · continued</i> IECON26-001566 Mission-Profile-Oriented Design of a High-Current Dual Active Bridge Converter for Low-Voltage Wave Energy Converters Victor Bailesteanu, Anand Krishnamurthy Iyer, Luc Hogervorst, Thiago Batista Soeiro IECON26-001574 Comparative Analysis of Unscented Kalman Filter-based State of Charge Estimation in Aged Sodium-Ion Batteries Cesare Sandri, Niccolò Nicodemo, Roberto Di Rienzo, Federico Baronti, Roberto Roncella, Roberto Saletti IECON26-001576 MVDC-Tied Modular Battery Energy Storage System with Partial Power Processing Mohammadjavad Hassani, Milad Rasoulkhathir, Qiang Wei
16:00–17:30 Online Room-4 ONLINE	Online-TT-151: Transportation Electrification and Automotive Technologies Chairs: _____ IECON26-001363 Multi-Library Feature Engineering and Statistically Validated Classification for Power Swing Detection and Stability Assessment Samita Rani Pani, Pallav Kumar Bera, Ranjeeta Patel IECON26-000764 Common-Mode MATD3-Assisted Distributed PI Secondary Control for CPL-Dominated DC Microgrids Wei Wang, Imen Bahri, Demba Diallo IECON26-001167 Graph Reconstruction and Generation of DC-DC Converters Using Heterogeneous Graph VAE Sima Azizi Aghdam, Xin Zhang, Mohammed Agamy IECON26-001347 A Neural Network-Based Surrogate Modeling Framework for Multi-Objective Optimization of Inductive Power Transfer Systems Chi Fong Ieong, Io-Wa Iam, Yuying Luo, Muxing Wu, Chi-Seng Lam IECON26-001478 DC-Link Stabilisation of Wireless Power Transfer Systems Using Supercapacitor-Battery Hybrid Energy Storage Zhixing Liu, Sadeeshvara Silva Thotabaddadurage, Tek Tjing Lie IECON26-000221 A Comparative Study of Optimal PMU Placement in IEEE MATPOWER Test Cases Zubair Khan Mohammed, Shady Khalil, Mostafa Farrag, Amira Mohammed, Ziyad Shafik, Mohamed Trabelsi
16:00–17:30 Online Room-5 ONLINE	Online-TT-152: Control Systems and Applications Chairs: _____ IECON26-000756 Large-Scale Electric Vehicle Charging Scheduling Using Genetic Algorithm Discrete Projection Neural Network Shizhen Li, Fengqiu Liu, Xinkai Chen IECON26-001030 Control-Oriented Physico-Chemical pH Modeling in Bubble Column Photobioreactors Ylanna Bandeira, Manoela Almeida, Fernando Piva Mendes, Luis Henrique Guerra Dytz, Sthevan Oliveira, Marcos Villela Rodrigues, Fabricio Ferrari, Letieri Avila, Vinicius Oliveira IECON26-000757 Dynamic Trust and Incentive-Based Consensus Model for Group Decision-Making With Application to Photovoltaic Plant Siting Meng Zhao, Fengqiu Liu, Xinkai Chen IECON26-001063 LAC-HOCBF: Lag-Aware Certified High-Order Control Barrier Functions with Feasibility Guarantees for Cascaded Systems Zixi Peng, Li Jin IECON26-000090 Stackelberg Game-Based Event-Driven Control for Trajectory Tracking of Nonlinear Systems Jianmin Wang, Hongxu Zhang <i>continues on next page ►</i>

16:00–17:30 Online Room-5 ONLINE <i>cont'd</i>	<i>Online-TT-152: Control Systems and Applications · continued</i> IECON26-001191 A Liquid Actor Critic Based Fault-Tolerant Control Scheme for a UAV Octarotor Zainab Akhtar, Salman Ijaz, Qadeer Ahmed, Sidra Ghayour Bhatti
16:00–17:30 Online Room-6 ONLINE	Online-TT-153: Mechatronics and Robotics Chairs: _____ IECON26-000236 Autonomous Drone-to-Drone Interception via Real-Time Visual Tracking and Servoing with a Gimbal Camera Hao Liu, Yu Hu, Kangnan Wang, Sergii Baidachnyi, Rakiba Rayhana, Zheng Liu IECON26-001453 An EMR model of a Power-HIL Mobile Platform for Full-Scale AGV Emulation Fernando Gaspar Lopes, Joao Trovao, Nuno Miguel F. Ferreira IECON26-001456 Collision-Oriented Knee Control for Stability Enhancement of a Passive Dynamic Walker Vahid Ehteshami Bojnurdi, Fateme Ranjbaran, Mahyar Naraghi, Valeriy Vyatkin IECON26-001472 Design and Vision-Guided Control of a Compact Wheel-Legged Stair-Climbing Transport Robot Jingze Zhang IECON26-001492 Mimoso: Small-Scale Platform for Biped Sim-to-Real Locomotion Research Murilo Bicho, Vinicius Oliveira IECON26-001531 A Multi-UUV Cooperative Planning Method for Post-Detection Revisit of Non-Cooperative Underwater Targets Jiajia Zhou, Yang Wu, Shuxin Yang
16:00–17:30 Online Room-7 ONLINE	Online-TT-154: AI Applications in Control, Mechatronics, and Robotics Chairs: _____ IECON26-001279 AI-based Trust Recommendation Model: A Hybrid Approach Combining Cloud Model and Probabilistic Linguistic Term Set Yan Wang, Michael Basin, Yuhang Zheng IECON26-001323 Design of a Multi-sensor Data Fusion Pipeline for depth-of-cut Estimation Vianney Papot, Atal Anil Kumar, Inès Chihi IECON26-000533 A Robust Privacy-Preserving Indoor Localization System via Bayesian Grid Intersection and Threshold Secret Sharing Haojun Lin, Shengming Chang, Tuozhong Yao IECON26-001399 Enhancing Performance and Reducing Conservatism of LPV Systems: A Reinforcement Learning Approach with Stability Guarantees Yongkang Zhang, Qian Shi, Hui Zhang IECON26-001466 Classification of physical activity intensity using PPG and acceleration signals from wearable devices Simão Soares, Vasco Fonseca, Ramiro Barbosa, Luis Conceição IECON26-001526 An Embodied Agent Framework for Flexible Industrial Robotic Sorting Across Diverse Objects Lingyuan Yang, Jiabao Dong, Jingheng Yan, Lei Ren
16:00–17:30 Online Room-8 ONLINE	Online-TT-155: Cyber-Physical Systems and Internet of Things in Industry Chairs: _____ IECON26-001187 Digital Assistance System for Knowledge Management in Production Akashkumar Chovatiya, Andreas Schwung, Gerrit Pohlmann <i>continues on next page ►</i>

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16:00–17:30 Online Room-8 ONLINE <i>cont'd</i>	<i>Online-TT-155: Cyber-Physical Systems and Internet of Things in Industry · continued</i> IECON26-001089 Asset Administration Shell Enabled Real-Time Digital Twin for Automated Production Systems Jiayang Li, Jingyun Zhao, Dominik Hujo, Birgit Vogel-Heuser IECON26-001264 CALNet: Convolutional Autoencoder for Time and Energy-Based Attack Localization in EVCS Md Rakibul Ahasan, Alex Burnside, Rachad Atat, Shahriar Rahman Fahim, Abdulrahman Takiddin IECON26-001307 GridShield-IoT: An Explainable AI Framework for Cyberattack Detection in Smart Grid Networks Prabhjot Kaur, Richa Sharma, Tarun Kashyap, Gautam Srivastava IECON26-000227 A Digital Twin-Based Dynamic Scheduling Method for Discrete Manufacturing Workshop Yupeng Fu, Weili Wang, Fan Xu, Weiwei Qian IECON26-000481 Cross-Sensor Chained Diamond Model for Enhancing GRC Practices in ICS Kousei Sakata, Junya Fujita, Shota Fujii, Nobutaka Kawaguchi, Hideaki Ishii, Satoshi Takemoto
16:00–17:30 Online Room-9 ONLINE	Online-TT-156: Signal & Image Processing Methodologies Chairs: _____ IECON26-001421 FGS-MoE: Frequency-Guided Spatial MoE for Oriented SAR Object Detection Zheng Chen, Senxian Zhang, Wenli Huang, Ye Deng, Yizhe Huang, Shuichao Zhang IECON26-001440 Automated Region-of-Interest Detection for Targeted Geotechnical Borehole Scanning Gabriella Muscat, Brian Azzopardi, Evan Dimech, Christian Schembri, Adrian Mifsud, Andrew Sammut IECON26-001462 Dual-View RGB-T Semantic Segmentation for Maritime Scene Perception Shiyao Wei IECON26-001471 Silhouette-based Groove Profile Tracking for Automotive Rotor Inspection Gabriel Rocha De Souza, Juliana Dos Santos, Rafaella Quaresma Lourenço, Mateus Pinto, Victor Coch, Eder Mateus Gonçalves, Nelson Duarte Filho, Eduardo Borges, Vinicius Oliveira, Marcelo Pias, Marcelo Malheiros IECON26-001506 How Many Measurements Are Needed Data Efficient LTE Sector Orientation Inference from Spatial RSRP Measurements Srivathsan Chakaravarthi Narasimman, Jackson Juliet Roy, Gnanaprakash Sebastian IECON26-001509 Automated Extraction of Quantitative Data from Biomedical Figures Using Vision-Language Models Shrish Goel, Chetan Anand P, Jeuti Talukdar, Binil Benny
16:00–17:30 PR1 Office ONLINE	Online-TT-157: Cyber-Physical Systems and Internet of Things in Industry Chairs: _____ IECON26-000864 Robust Jacobian Estimation in Continuum Robots: A Sliding-Window Least-Squares Approach Xinyi Xiao, Wang Xiang, Bo Xiao, Tiangliang Li, Ziwei Wang IECON26-001315 Hard-Safe Runtime Scheduling of Hard and Soft Typed DAGs for Reconfigurable Heterogeneous Satellite Platforms Yulu Mao, Jinglong Zhang, Kaixuan Fang, Qingwei Sun, Xiaolin Wang, Cailian Chen, Xinping Guan IECON26-000574 Physics-Informed Neural Network for Broken Rotor Bar Fault Severity Estimation in Squirrel Cage Induction Motors via MCSA Haraprasad Badajena, Ayushman Behera, Debranjana Mukherjee, Mamata Jenamani, Aurobinda Routray, T P Yuvaraj <i>continues on next page ►</i>

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16:00–17:30 PR1 Office ONLINE <i>cont'd</i>	<i>Online-TT-157: Cyber-Physical Systems and Internet of Things in Industry · continued</i> IECON26-001691 Multi-Scale Fruit Capsules: Dilated Convolutions and Dynamic Routing for In-the-Wild Explainable Fruit Recognition Subhankar Chattoraj, Sawon Pratiher, Samiran Das, Hubert Konik IECON26-000101 A Dynamic Simulation Model of Heterogeneous Cyber-Physical Microgrids Driven by Prior Knowledge Cellular Automata Leijiao Ge, Yuning Wang, Rubo Lu, Zhouyue Meng, Luyang Hou, Yue Zhuo IECON26-000299 Feedforward and PI-Based Output Current Control for a Secondary Resonant Single Active Bridge Converter Mohamed Abdelrazek, Wataru Kitagawa, Takaharu Takeshita
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Keynote Speaker: Prof. Maryam Saeedifard



Georgia Institute of Technology, USA

Maryam Saeedifard received the Ph.D. degree in electrical engineering from the University of Toronto, in 2008. Since January 2014, she has been with the School of Electrical and Computer Engineering at Georgia Institute of Technology, where she is currently a Ken Byers Professor.

She is a recipient of the IEEE Modeling and Control Technical Achievement Award (2024), the IEEE Bimal Bose Award for Industrial Electronics Applications in Energy Systems (2024),

Roger Webb's Excellence in Mentorship Award from the School of Electrical and Computer Engineering at Georgia Tech (2023), the 8th Nagamori Award from the Nagamori Foundation (2022), Roger Webb's Outstanding Mid-Career Faculty Award (2021), the U.S. Clean Energy Education and Empowerment (C3E) Technology Research & Innovation Award from the Department of Energy (2021), the First Place Prize Paper Award from IEEE Transactions on Power Electronics (2023, 2022, 2021), the Best Transactions Paper Award of IEEE Transactions on Industrial Electronics (2018, 2016), the IEEE J. David Irwin Early Career Award (2018), the U.S. National Academy of Engineering Frontiers in Engineering in Education (2012), the U.S. National Academy of Engineering Frontiers in Engineering (2011), and the IEEE Richard M. Bass Outstanding Young Power Electronic Engineer Award (2010).

She is an IEEE Fellow and currently serves as the Editor-in-Chief of IEEE Transactions on Power Electronics Letters. Her research interests include power electronics and its applications in terrestrial and mobile power systems.

Next-Generation Grid Architectures in the Era of Power Electronics & AI

Power systems are undergoing a fundamental architectural transformation driven by high renewable penetration, declining system inertia, and the rapid emergence of large, dynamic AI-driven load centers. In this context, power electronics are evolving from peripheral interfaces into the primary enablers of stability, flexibility, and resilience in modern power networks.

This keynote explores next-generation grid architectures in which power-electronic interfaces play a central and coordinated role across transmission systems, distribution networks, and large-scale load integration. Recent advances in converter design, control, protection, and interoperability are examined.

By highlighting international initiatives and emerging research directions, the presentation outlines a unified architectural vision for a resilient, flexible, and sustainable power grid suited to the era of power electronics and AI.

Keynote Speaker: Prof. Xiaohong Guan



Xian Jiaotong University, China

Professor Xiaohong Guan received his B.S. and M.S. degrees in Control Engineering from Tsinghua University, Beijing, China, in 1982 and 1985, respectively, and his Ph.D. degree in Electrical and Systems Engineering from the University of Connecticut in 1993.

He was a Senior Consulting Engineer with Pacific Gas and Electric, San Francisco, United States, from 1993 to 1995. He visited the Division of Engineering and Applied Science, Harvard University, from 1999 to 2000.

Since 1995, he has been with Xian Jiaotong University, Xian, China, where he has served as the Cheung Kong Professor of Systems Engineering since 1999, and as the Dean of the Faculty of Electronic and Information Engineering from 2008 to 2025.

Since 2001, he has also been affiliated with the Center for Intelligent and Networked Systems at Tsinghua University, Beijing, China, and served as the Head of the Department of Automation at Tsinghua University from 2003 to 2008.

Professor Guan is a Member of the Chinese Academy of Sciences and an IEEE Fellow. His research interests include economics and security of networked systems, optimization-based planning and scheduling of electrical power and energy systems, manufacturing systems, and cyber-physical systems.

Cyber-Physical Systems in the Age of Intelligence and Networking

Networking, intelligence, and integration of cyber and physical systems represent a major trend in the development of information science and technology. Cyber-physical systems form the foundation of the industrial, energy, and technological revolutions, presenting tremendous challenges in cyber-physical modeling, intelligent design, system optimization, and control.

Hydrogen-enabled zero-carbon energy systems provide an ideal infrastructure and offer cost-efficient solutions for energy supply and consumption without carbon emissions or pollution. Within such systems, it is crucial to synergize the design and operation of renewable, hydrogen, electrical, and thermal energy production, storage, and utilization systems in order to minimize overall energy supply costs.

Production results demonstrate that hydrogen-enabled zero-carbon energy systems significantly outperform current power grids, city heating utilities, and HVAC cooling systems in terms of total energy costs. Cyber-physical integration, hydrogen-enabled zero-carbon energy storage and conversion, and advanced system optimization are key drivers of the energy revolution toward addressing the global warming crisis.

Keynote Speaker: Prof. Huijun Gao



Harbin Institute of Technology, China

Huijun Gao is a Chair Professor and Director of the Research Institute of Intelligent Control and Systems at Harbin Institute of Technology. His research focuses on intelligent control, intelligent instruments and equipment, and intelligent robotic systems.

Prof. Gao is a Foreign Member of the Academia Europaea and an IEEE Fellow, and serves as President-Elect of the IEEE Industrial Electronics Society. He served as Editor-in-Chief of the IEEE/ASME Transactions on Mechatronics from 2023 to 2025, and currently serves as Editor-in-Chief of the IEEE Transactions on Systems, Man,

and Cybernetics: Systems.

He has been awarded two National Natural Science Awards and one National Technological Invention Award. He is the recipient of the IEEE Norbert Wiener Award and the IEEE Dr.-Ing. Eugene Mittelmann Achievement Award. He has been an ESI Highly Cited Researcher since 2014.

Intelligent Robotic System for Organoid Regeneration

Organoids are in vitro biological models that can recapitulate the structural and functional features of native tissues and organs. They represent a leading biomedical research frontier with broad application prospects. This report introduces the technologies, systems, and translational applications of intelligent robotic systems for organoid regeneration.

To address the challenge of controllable, batch-scale organoid regeneration, this report covers core theories and enabling technologies. These include robotic multimodal sensing of organoid growth, robotic micromanipulation of organoid cells, as well as modeling and intelligent control of organoid developmental dynamics based on robotic micromanipulation framework.

We have established an intelligent robotic system for organoid regeneration, enabling scientific exploration of organoids in pathological studies, drug screening and personalized precision medicine. This report concludes by introducing organoid intelligence as an emerging frontier, and discusses the future directions of carbon-based intelligence empowered by intelligent robotic systems.

Keynote Speaker: Prof. Biplab Sikdar



National University of Singapore (NUS), Singapore

Biplab Sikdar is the Provost's Chair Professor and Head of Department in the Department of Electrical and Computer Engineering at the National University of Singapore (NUS). At NUS, he also leads the \$54 million Cisco–NUS Corporate Research Laboratory.

He received the B.Tech. degree in Electronics and Communication Engineering from North Eastern Hill University, Shillong, India, in 1996; the M.Tech. degree in Electrical Engineering from the Indian Institute of Technology, Kanpur, India, in 1998; and the Ph.D. degree in Electrical Engineering from Rensselaer Polytechnic Institute, Troy, NY, USA, in 2001.

His research interests include IoT and cyber-physical system security, network security, and network performance evaluation. Dr. Sikdar is an IEEE Fellow, IEEE Distinguished Lecturer, ACM Distinguished Speaker, and a member of Eta Kappa Nu and Tau Beta Pi.

He has served on the editorial boards of IEEE Transactions on Communications, IEEE Transactions on Mobile Computing, IEEE Internet of Things Journal, and IEEE Transactions on Network and Services Engineering, and as the Technical Program Committee (TPC) Co-Chair of symposia in IEEE SmartGridComm and IEEE Globecom.

AI-Driven Cyber Defense for Next-Generation Power Grids

The rapid digitalization of power systems—driven by distributed energy resources, advanced sensing, and wide-area communication—has significantly expanded the cyber-attack surface of modern grids. Traditional security mechanisms, built around static rules and manual response, are no longer sufficient against adaptive, stealthy, and fast-moving threats.

This talk explores how Artificial Intelligence (AI) can serve as a foundational layer of cyber defense for next-generation power grids. It examines recent advances in machine-learning-based intrusion detection, real-time anomaly detection using multimodal grid data, and AI-enabled threat prediction that anticipates adversarial behavior before it impacts operations.

The presentation also addresses the challenges of deploying AI at scale in safety-critical environments, including data scarcity, model robustness, explainability, and the risk of adversarial manipulation.

By highlighting emerging research directions and practical deployment insights, this keynote outlines a pathway toward an autonomous, resilient, and intelligent cybersecurity architecture capable of defending tomorrow's power grids at machine speed.

Keynote Speaker: Prof. Francisco Gonzalez-Longatt



University of South Eastern Norway & Loughborough University, UK

Francisco M . G onzalez-Longatt is the Chief Scientist and Co-Founder of fglongatt LTD, a consultancy specialising in Digital Energy Systems, and he is currently a professor of electrical power engineering at Institutt for elektro, IT og kybernetikk, Universitetet i Sørøst-Norge, Norway. Also, he is with the Wolfson School of Mechanical, Electrical and Manufacturing Engineering and a member of the Centre for Renewable

Energy Systems Technology (CREST) at Loughborough University, UK.

He is the author or editor of several books (Spanish and English), including: “Power Factory Applications for Power System Analysis”, Springer; “Advanced Smart Grid Functionalities Based on PowerFactory”, Springer, and “Dynamic Vulnerability Assessment and Intelligent Control for Sustainable Power Systems”, Wiley.

He has written 30+ book chapters, 100+ journal and magazine papers and 200+ conference papers. His work has over 8.0k+ citations, and his h-index is 40 (January 2025), according to Google Scholar. He is ranked in the top 2% of the scientific list by Elsevier and Stanford University (ranked 2138 in the energy subfield).

His research interests include innovative (operation/control) schemes to optimise the performance of future energy systems. His research is or has been supported by the Royal Society, the British Council, and the UK-India Education Research Initiative (UKIERI). He has been collaborating in European research projects, including “Integration of Offshore wind power into the Spanish Power System using HVDC”, Universidad Carlos III and Universitat Politècnica de Catalunya, Spain.

Protection in the Era of Power Converter-Dominated Systems

In an increasingly electrified world, electrical power systems are undergoing a profound transformation as power converter-dominated networks become the new backbone of generation, transmission, and distribution.

This keynote explores how the shift from synchronous machines to fast-acting, digitally controlled converters is redefining the foundations of protection philosophy, challenging long-held assumptions about fault signatures, system inertia, coordination, and stability.

As traditional protection methods confront reduced fault currents, fluctuating impedances, and complex control interactions, a new mindset is required—one that blends advanced signal analytics, real-time intelligence, adaptive protection strategies, and converter-aware system models.

Protection in the era of power-converter-dominated systems is not merely a technical imperative; it is a call to innovate boldly, rethink engineering heritage, and lead the industry toward a resilient, flexible, and secure future powered by next-generation electrical systems.

Keynote Speaker: Prof. Sudip K. Mazumder



University of Illinois Chicago, USA

Dr. Sudip K. Mazumder received his Ph.D. degree from Virginia Tech. He is a Distinguished Professor, the Robert Uyetani Professor of Engineering, and the Director of the Laboratory for Energy and Switching-Electronic Systems (LESES) at the University of Illinois Chicago.

He also holds a joint appointment with the U.S. Argonne National Laboratory and has served as the President of NextWatt LLC since 2008. He has more than 30 years of

professional experience.

He is a Fellow of the IEEE and a Fellow of the American Association for the Advancement of Science (AAAS). He is the recipient of the 2023 IEEE Power & Energy Society Ramakumar Family Renewable Energy Excellence Award. He has served as a Distinguished Lecturer for the IEEE Power Electronics Society and as the Editor-at-Large for IEEE Transactions on Power Electronics.

Starting in 2025, he serves as the Deputy Editor-in-Chief of the IEEE Journal of Emerging and Selected Topics in Power Electronics (JESTPE).

Actuation by Light: A New Era in Power Electronics

Photonically controlled power semiconductor devices and electronics represent a game-changing technology in power electronics. With the advent of new wide and ultra-wide bandgap materials, semiconductor devices are beginning to switch at progressively higher speeds and voltages.

The impact of such near-impulse actuation and its effects on reliability can potentially be better managed through photonics. Moreover, emerging threats such as intentional adversarial intrusion can be mitigated through optical control technologies.

Optical power semiconductor devices enable ultrafast, high-voltage, high dv/dt and di/dt resilient, EMI-immune, and cyber-secure power electronics solutions with wide industrial applications including aerospace, high-performance computing (e.g., AI hyperscalers), pulsed power, HVDC, EVs and AVs, radar-based systems, 5G/6G systems, multilevel converters, drives, electric ships and submarines, solid-state circuit breakers, and many more.

This keynote provides an engaging overview of photonically controlled device and electronics technologies, covering historical developments, current advancements, and emerging perspectives for the IECON 2026 audience.

Keynote Speaker: Prof. Samir Kouro



Luxembourg Institute of Science and Technology

Samir Kouro received the M.Sc. and Ph.D. degrees in electronics engineering from Universidad Técnica Federico Santa María (UTFSM), Valparaíso, Chile, in 2004 and 2008, respectively. In 2026, he joined the Luxembourg Institute of Science and Technology (LIST) as Head of the Intelligent Clean Energy Systems (ICES) Unit. He joined UTFSM in 2007, where he is currently an Affiliated Professor. From 2009 to 2011, he was a Postdoctoral Fellow at Toronto Metropolitan University, Canada, and from 2022 to 2023, he held a María Zambrano

Research Fellowship at Universidad de Sevilla, Spain.

His research interests include power electronics and advanced control for energy-transition applications, with emphasis on renewable energy systems, green hydrogen production, energy storage, and electromobility. He has led more than 45 R&D projects and was a co-founder and Principal Investigator of the Solar Energy Research Center (SERC Chile, 2012–2025) and the Advanced Center for Electrical and Electronic Engineering (AC3E, 2014–2026), two major Chilean centers of excellence. He has coauthored two books, 15 book chapters, and more than 250 refereed journal and conference papers.

Dr. Kouro served as Associate Editor of IEEE Industrial Electronics Magazine from 2022 to 2024 and currently serves as its Editor-in-Chief for the 2025–2027 term. He has also organized and chaired 30 special sessions at international conferences and served as Guest Editor for five Special Sections in IEEE journals.

He was elevated to IEEE Fellow in 2025 for contributions to power converter topologies and control for the energy transition. His distinctions include the 2025 Nagamori Award, the 2016 IEEE Industrial Electronics Society Bimal K. Bose Award, the 2015 IEEE Industrial Electronics Society J. David Irwin Early Career Award, and the 2012 IEEE Power Electronics Society Richard M. Bass Outstanding Young Power Electronics Engineer Award. He was also recognized as a Clarivate Highly Cited Researcher in 2018 and has received seven IEEE Best Paper Awards.

Partial Power Conversion: Enabling More Efficient Energy Transition Technologies

Power converters have become a critical technology for many energy transition applications, including renewable energy conversion, energy storage, electromobility, and green hydrogen production and utilization. The rapidly increasing penetration of power electronics in these systems, particularly in applications involving multiple power conversion stages, has made converter efficiency, reliability, cost, and power density more important than ever.

Partial power conversion offers an attractive approach to addressing these challenges. Rather than processing the full power transferred by the system, partial power converters process only a fraction of it, thereby reducing power conversion losses and potentially decreasing converter size, cost, and component stress. The underlying concept is already well established in applications such as doubly fed induction generator (DFIG)-based wind turbines, using indirect AC-DC-AC conversion.

This plenary presentation will review recent advances and developments in partial power conversion, with particular emphasis on DC–DC converter architectures. It will discuss how the concept can be adapted to different system requirements and how it has been implemented and experimentally validated across several energy transition applications. The presentation will also examine the main technical challenges and limitations that must be addressed to enable wider adoption, and will provide an outlook on the future role and opportunities of partial power conversion in next-generation power conversion systems.

Tutorial 1: How Model Predictive Control is Revolutionizing The High-Power Drives Industry

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ABSTRACT

This tutorial discusses what it takes for model predictive control (MPC) to make a break-through in industry. While the low-power drive industry has been slow in adopting the most widely investigated MPC methods, MPC has started to revolutionize high-power drives by increasing their rated power, lowering their cost and ensuring their safe operation in the presence of grid disturbances and faults. In particular model predictive pulse pattern control (MP3C) fully exploits the performance potential of high-power drives by combining the benefits of MPC with the optimal steady-state performance of optimized pulse patterns. The MP3C principle can be applied to a wide range of applications, including medium-voltage drives, low-voltage traction converters, and modular multilevel converters. For load commutated inverter drives, model predictive torque control (MPTC) increases the drive's efficiency and robustness to grid disturbances. Both methods have been commercialized and will be discussed in detail. To complete the tutorial, finite control set MPC, which is the predictive control method most academic researchers have been focusing on, will also be discussed. To maximize its performance potential, it will be shown how control problems with long prediction horizons can be formulated and solved efficiently using a specific branch and bound method. The tutorial provides an in-depth insight into industrial needs and requirements regarding new control methods, and provides a balanced mix of theory and application-related material. Special care is taken to ensure that the presented material is intuitively accessible to the drives practitioner.

Tutorial 2: Recent Advances, Challenges And Future Trends of Model Predictive Control Applied To Power Electronics

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ABSTRACT

Recently, the rapid advancement of modern microcontrollers has revolutionized power converter control, enabling the development and implementation of new intelligent control and modulation strategies. Among these, Model Predictive Control (MPC) has emerged as a powerful and versatile alternative, getting significant attention from both academia and industry. MPC offers numerous advantages over classical linear controllers, including its intuitive design, elimination of linear controllers and modulators, and seamless integration of nonlinearities and constraints into the control law. These features make MPC strategies a highly promising solution for tackling complex control challenges in various areas of power electronics. This tutorial will address the latest advancements and trends in MPC for power converters, highlighting its practical benefits and potential for widespread industrial adoption. Participants will gain insights into the fundamental principles of MPC, explore state-of-the-art applications, and learn about challenges and opportunities regarding MPC implementation. The tutorial will provide a comprehensive understanding of how MPC is reshaping power electronics and drives, bridging the gap between academic research and real-world implementation.

Tutorial 3: Partial Power Processing Converters, A Myth or the Reality

Prof. Dr Petar. J. Grbović

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ABSTRACT

Power electronics and power conversion in general is today part of every segment of our life. Any piece of electric equipment we have today is somehow based on power electronics and converters; home appliance, industrial equipment, renewable energy, automotive, avionic, etc., etc. Conversion efficiency, specific power, power density and converter cost are today the most critical requirements for new converters. One way to increase the efficiency and reduce cost/size/weight is to deploy multi-level and/or multi-cell converters and partial power processing power converters. A novel solution to ultra-high efficiency and specific power dc/dc converters has been proposed and theoretically investigated in this tutorial. The solution is based on the fact that in most of application we do not need to process entire dc bus voltage and output current. We can process a fraction of the dc bus voltage and/or the load current. In other words, we do not need to process the converter total rated power; we would process just a fraction of the rated power. This is so-called concept of Partial Power Rated Converters (PPRC). Typical target applications are PV boost converters, energy storage (batteries and ultra-capacitors) interface converters, isolated ac/dc power supplies, electric drives, etc., etc. Advantages of the PPRC concept, such as significant reduction of the input/output filter size & weight, voltage rating of power devices and conduction/switching losses are theoretically investigated and discussed in the tutorial. Various applications such as energy storage interface converters, isolated ac-dc converters and double feed electric machines are also discussed. Several case studies and design examples are given in concluding part of the tutorial. One particular design example presented in the tutorial is 25kW battery interface dc/dc converter. An extraordinary efficiency of 99.5%, specific power of 30kW/kg and power density of 50kW/dm³ have been achieved. This tutorial is aimed at power electronics engineers, professionals and graduate students who want to improve their knowledge and understanding of advanced concepts of power conversion, such as Partial Power Rated Converters and applications.

Tutorial 4: Industrial Intelligence for the Smart Grid: IEC 61850 Process Bus and Digital Substations in the Era of ICT and Artificial Intelligence

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ABSTRACT

The digitalisation of electric power systems is accelerating rapidly, driven by the global push toward sustainable energy, decentralised generation, and intelligent, data-centric operation of critical infrastructure. At the core of this transformation stands IEC 61850, the international standard for Protection, Automation, and Control Systems (PACS). Beyond its foundational role in substation automation, IEC 61850 has evolved into a key enabler for next-generation smart energy systems—providing advanced communication frameworks, data modelling, and interoperability capabilities essential for the modern grid. This tutorial presents a comprehensive, application-oriented exploration of IEC 61850's Process Bus concept and the emerging Digital Substation paradigm, highlighting how recent advances in Information and Communication Technologies (ICT) and Artificial Intelligence (AI) are reshaping the Industrial Electronics landscape. IEC 61850 introduces a unified, object-oriented architecture that ensures seamless data exchange between Intelligent Electronic Devices (IEDs), sensors, control systems, and supervisory platforms. Its standardised information models and service interfaces support multi-vendor interoperability—one of the principal challenges faced by utilities during grid modernisation. As power systems integrate more renewables, electric vehicles, flexibility services, and distributed energy resources, the scalability, responsiveness, and efficiency offered by IEC 61850 become indispensable. The Process Bus, in particular, represents a significant shift from traditional copper-based hardwiring to high-speed, Ethernet-based digital communication for Sampled Values (SV) and GOOSE messages. This transition reduces installation costs, increases system reliability, enhances maintainability, and enables new digital functionalities across the substation lifecycle. The tutorial will highlight how ICT innovations—including real-time Ethernet networking, edge computing, virtualisation, cybersecurity technologies, and time-sensitive networking (TSN)—strengthen the robustness and intelligence of IEC 61850-based architectures. Moreover, the emergence of AI-enabled analytics, distributed machine learning, and intelligent anomaly detection is opening new frontiers for adaptive protection, predictive maintenance, and operational optimisation in Digital Substations. These developments directly support the IEEE Industrial Electronics Society (IES) focus areas spanning industrial cyber-physical systems, embedded intelligence, advanced control, and smart energy conversion. By integrating ICT and AI capabilities with standardised digital communication, the Digital Substation becomes a cornerstone of the smart grid. Enhanced situational awareness, improved fault detection, flexible automation, and secure remote operability are among the most transformative outcomes. This tutorial will explore practical examples, implementation challenges, and recommended engineering practices to guide participants from foundational concepts to advanced applications. Emphasis will be placed on leveraging IEC 61850 within intelligent, data-driven industrial energy systems, aligning with IES themes such as energy efficiency, resilient control, computational intelligence, and industrial communications. By the end of this tutorial, participants will gain a clear and actionable understanding of how the Process Bus operates, how Digital Substations are architected, and how ICT and AI advancements unlock new capabilities for smart, cyber-secure, and sustainable power systems. The content is designed to benefit industry practitioners, researchers, and system integrators seeking to contribute to the next generation of intelligent energy infrastructures within the scope of IEEE IES.

Tutorial 5: Next-generation Intelligent and Cybersecure Modular EV Fast Charging Infrastructure with V2G/V2X Capabilities

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ABSTRACT

The rapid global adoption of electric vehicles (EVs) is driving unprecedented demand for ultra-fast, intelligent, efficient, and secure charging infrastructure. Emerging technologies such as solid-state transformers (SSTs), dual active bridge (DAB) converters, modular multilevel SiC-based power converters, autonomous portable DC fast charging systems, AI/ML-enabled cloud battery management systems (BMS), adaptive charging strategies, and vehicle-to-grid (V2G), vehicle-to-anything (V2X) integration are transforming the architecture and operation of next-generation EV charging ecosystems. At the same time, challenges associated with battery degradation, thermal runaway, charging safety, cybersecurity, and grid interoperability require multidisciplinary solutions spanning power electronics, electrochemistry, embedded intelligence, and communication systems. This tutorial presents a comprehensive overview of advanced DC fast charging technologies and intelligent battery management systems for future EV infrastructure. The tutorial begins with modern power conversion architectures, including solid-state transformers, dual active bridge converters, solid-state circuit breakers, portable DC fast chargers, and modular multilevel SiC-based converter applications for high-power charging and V2G operation. It then discusses advanced battery charging methodologies, including health-conscious fast charging, CC-CV-constant temperature charging, adaptive charging strategies, and online electrochemical impedance spectroscopy (EIS)-based diagnostics. Furthermore, the tutorial explores intelligent AI/ML-driven cloud-connected battery management systems with emphasis on state estimation, core temperature estimation, thermal management, predictive diagnostics, degradation-aware charging optimization, cybersecure battery data management, and real-time battery health monitoring. Finally, cybersecurity fundamentals for DC fast charging stations and EV battery management systems are introduced, including attack surfaces, communication vulnerabilities, secure authentication, and resilient charging architectures. The tutorial is intended for researchers, practicing engineers, graduate students, industry professionals, and policymakers working in EV charging systems, power electronics, smart grids, and intelligent energy management. Attendees will gain both theoretical understanding and practical insights into enabling technologies shaping future ultra-fast, reliable, intelligent, and cybersecure EV charging infrastructure.

Tutorial 6: Insulation and Bearing Reliability in Wide Bandgap Motor Drives

Challenges, Mechanisms, and Mitigation

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ABSTRACT

Wide-bandgap (WBG) power semiconductor devices, especially silicon carbide (SiC) MOSFETs and gallium nitride (GaN) HEMTs, are transforming the design of modern motor drives by enabling higher efficiency, faster switching, higher power density, and greater system integration than conventional silicon-based technologies. These advantages are particularly attractive in electric transportation, industrial automation, renewable energy systems, and aerospace applications, where compactness, efficiency, and dynamic performance are increasingly important. However, the very features that make WBG devices attractive also introduce serious machine-side reliability challenges. In particular, the high dv/dt and high switching frequency of WBG converters can significantly intensify motor overvoltage, insulation stress, bearing currents, and EMI, creating failure risks that are far less pronounced in traditional silicon IGBT motor drives. This tutorial will address these issues with a specific focus on motor insulation and bearing degradation in WBG-based drive systems. The tutorial will first establish the link between the fast-switching characteristics of SiC and GaN devices and the resulting voltage stress imposed on electrical machines. It will show how, under WBG excitation, motor terminals and stator winding neutral point can experience substantial overvoltage even with much shorter cables than those typically associated with silicon IGBT drives. It will further explain how the steep voltage wavefronts generated by WBG converters lead to highly non-uniform voltage distribution inside the machine winding, with a large portion of the electrical stress concentrated across the first few turns near the motor terminal or neutral point. This localized stress is of particular importance because it can accelerate insulation degradation and increase susceptibility to partial discharge. A major part of the tutorial will then focus on the mechanisms by which high dv/dt and high switching frequency affect both winding insulation and motor bearings. For insulation systems, the tutorial will explain how repetitive steep-fronted pulses contribute to overvoltage stress, partial discharge activity, and long-term aging. For bearings, it will discuss how common-mode voltage and parasitic capacitive couplings create bearing currents that may lead to electrical discharge machining, lubricant degradation, and premature bearing failure. The tutorial will emphasize the physical understanding of these phenomena and show how converter behaviour, machine construction, and cable-drive interactions combine to determine the severity of the problem. To provide a strong practical dimension, the tutorial will include experimental results obtained from SiC- and GaN-based motor drive platforms. These results will illustrate the influence of switching speed, switching frequency, and drive configuration on winding overvoltage, insulation stress, and bearing current behaviour. The observed effects will be interpreted using both time-domain and frequency-domain analysis so that attendees gain not only awareness of the challenges but also a clear understanding of the theory behind them. The tutorial will also present a set of mitigation techniques aimed at improving the reliability of high-frequency WBG motor drives. These will include passive and active filters, waveform shaping through optimized gate-drive design and soft-switching, alternative converter topologies, and quasi-multilevel modulation strategies. Practical SiC/GaN motor drive examples will be used throughout to demonstrate both the challenges and the effectiveness of the proposed countermeasures. By concentrating on the machine reliability implications of WBG adoption, this tutorial addresses a timely and important gap between device-level progress and system-level implementation. It will provide IECON attendees with both fundamental insight and application-oriented guidance, helping researchers and practicing engineers better understand, evaluate, and mitigate insulation and bearing issues in next-generation WBG motor dr

Tutorial 7: Industrial Medium-Voltage Converters and Drives: From Components to Systems and Applications

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ABSTRACT

This tutorial provides a comprehensive introduction, overview and assessment of medium-voltage converters and drives. Such converters and drives are vital to decarbonize the planet by generating renewable energy and electrifying transportation systems and heavy industry. A particular emphasis is laid on system aspects, i.e., the integration of the transformer, converter, electrical machine and load into a high-performance drive system. To increase the reliability, redundancy can be added on the converter level. To minimize the cost of such drive systems - or conversely - to maximize their hardware capability in terms of rated voltage and current, model predictive pulse pattern control (MP3C) offers a disruptive way of achieving this, as will be shown in this tutorial. The classic control methods, scalar control, field-oriented control and direct torque control will be introduced as well. Medium-voltage drives are highly tailored to their specific application. Therefore, the understanding of the key applications is vital, such as Marine propulsion, rolling mills in the Metals industry, crushers and mine hoists in the Mining industry, Wind power generation, and pumps and compressors used in the Oil and Gas industry. Besides the classic motoric applications, non-motoric applications are quickly growing in market size, among them static frequency converters (SFCs) and power electronics grid simulators. SFCs provide electrical power to berthed ships or remote locations, whereas grid simulators allow the testing and verification of renewable energy systems. Both applications are much more challenging to control and operate than classic variable speed drives, providing fruitful research problems. This tutorial will introduce the exciting world of medium-voltage converter and drive systems, it will showcase the opportunities they offer, and will point out challenging research problems for academics and researchers working in industry alike.

Tutorial 8: Optimization Design, Analysis and Control of High-Performance Special Permanent-Magnet Machine Systems

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ABSTRACT

This tutorial focuses on optimization design, analysis and control of high-performance special permanent-magnet machine systems. Three typical PM machines including the multi-phase fault-tolerant permanent-magnet synchronous machine (PMSM), variable-flux machine and compound structure PM machine are taken as the representatives. First, the multi-phase fault-tolerant PMSM with strong fault-tolerant capability will be introduced, focusing on the new topologies, hybrid single/double-layer winding design and less-harmonic winding design, fault-tolerant control methods for both the open-circuit and short-circuit faults, and fault detection methods. Next, a prospective drive system scheme for multiphase fault-tolerant PMSM based on current-source inverter (CSI) topology will be introduced, focusing on virtual-impedance active damping, disturbance modeling and suppression, multi-dimensional current vector modulation, reconstruction and tolerance control under typical inverter fault scenarios. Besides, the variable-flux machine which has wide operation region and high efficiency at high-speed condition will be introduced. Several series/parallel topologies, nonlinear hysteresis modelling method, high-precision magnetic circuit model, and on-line magnetization-regulation control method of the variable-flux machine will be presented. Finally, the compound structure PM machine, which can be used as the electronic continuously variable transmission (E-CVT) in hybrid electric vehicle (HEV) will be introduced. The novel topologies, precise two-dimensional analytical method, magnetic decoupling design method, and processing and manufacturing method of the compound-structure PM machine will be presented.

Tutorial 9: Resilient Power Grid of the Future with High Voltage DC Transmission

Developments, Challenges and Opportunities

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ABSTRACT

The global energy landscape is undergoing a profound transformation, driven by the imperative to integrate renewable sources and interconnect diverse grids. High-Voltage Direct Current (HVDC) technology has emerged as the critical enabler for this new era, moving beyond its traditional niche to become the backbone of the future power system. This tutorial explores the HVDC systems, outlining its transformative potential to unlock remote renewable energy resources, establish resilient transnational supergrids, and enhance grid stability through advanced control capabilities. The key technological advancements propelling this evolution, including the maturation of Voltage-Source Converter (VSC) technology, the development of hybrid and multi-terminal systems (MTDC), and innovations in power electronics and semiconductor devices will be discussed. Furthermore, the discussion extends to the symbiotic relationship between HVDC and digitalisation, highlighting how artificial intelligence and real-time data analytics are optimising operation, predictive maintenance, and fault management. Looking ahead, the application of HVDC is expanding into new and unprecedented domains. The technology is now seen as a cornerstone for massive offshore wind integration and the development of intercontinental 'supergrids' that can balance renewable generation across time zones. Furthermore, the concept of 'green hydrogen' production, coupled with HVDC links from remote solar and wind farms, presents a viable pathway for decarbonising industrial sectors. These applications underscore a shift in perception. HVDC is no longer just a point-to-point connection but the foundational architecture for a new, climate-positive energy ecosystem. However, realising this full potential requires navigating a complex web of multi-disciplinary challenges. Beyond the technical hurdles, significant barriers exist in regulatory harmonisation, financing models for multi-national projects, and public acceptance of new infrastructure. The future development of HVDC will therefore depend as much on geopolitical cooperation and innovative business cases as on pure engineering breakthroughs. Success will be measured by the ability to create a supportive policy environment that encourages investment and international collaboration. While the path forward is promising, it is not without its challenges. The tutorial also touches upon the hurdles that must be overcome, such as the need for standardised international frameworks, substantial upfront investment, and the development of a skilled workforce. Ultimately, this analysis concludes that HVDC is not merely an alternative but is fundamental to building a sustainable, secure, and interconnected global energy future. The HVDC technology is here, promising to power our future with unprecedented efficiency and scale.

Tutorial 10: Sub-Synchronous Oscillations in Modern Power Systems

Mechanisms, Detection, and Mitigation for Large-Scale Renewable Energy Integration

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ABSTRACT

The rapid and large-scale integration of inverter-based resources (IBRs) - including wind farms (DFIG/Type-3 and PMSG/Type-4), photovoltaic plants, battery energy storage systems (BESS), and VSC-HVDC transmission links - is fundamentally changing the dynamic characteristics of modern power networks. One of the most critical consequences is the emergence of Sub-Synchronous Oscillations (SSOs) at frequencies from approximately 5 Hz to 50 Hz. Unlike classical torsional Sub-Synchronous Resonance (SSR) triggered by series-capacitor compensation in conventional thermal plants, modern IBR-driven SSOs arise from complex interactions between converter control loops and network impedances—often manifesting without series compensation and in grids with no rotating machinery. Real-world SSO events have caused significant disruptions: the Hami (China) incident in PMSG/Type-4 wind farms in 2015; the Texas (ERCOT) Sub-Synchronous Control Interaction (SSCI) events in 2009; the Guyuan (China) DFIG-SSR case in series-compensated transmission; and IBR-driven oscillations (8-10 Hz and 17-20 Hz) documented by the Australian Energy Market Operator (AEMO). With Qatar's National Renewable Energy Ambition targeting 20% renewable generation by 2030 - and the GCC interconnection progressively integrating large solar and wind capacity - SSO risks in the Gulf grid are no longer hypothetical; they are an engineering imperative. This workshop unites world-class academic researchers from Qatar University (QU) and Hamad Bin Khalifa University (HBKU) with industrial expertise from Iberdrola QSTP to deliver a comprehensive, practice-oriented half-day tutorial. Attendees will gain a rigorous understanding of SSO physics, learn state-of-the-art analysis and screening tools (impedance-based analysis, open-loop modal analysis, frequency scanning, EMT modeling), and explore proven mitigation strategies, all grounded in real system data and GCC-relevant case studies.

Tutorial 11: Edge AI and Advanced Sensor Fusion (Radar, Camera, LiDAR, USS) for Next-Generation Autonomous Vehicles

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ABSTRACT

As the automotive industry accelerates toward higher levels of autonomous driving, the reliance on robust, high-fidelity environmental perception has never been more critical. This tutorial provides a comprehensive deep dive into the architecture, deployment, and integration of advanced automotive sensors specifically Radar, Camera, Ultrasonic Sensors (USS), and LiDAR. While individual sensor modalities have inherent strengths and limitations, the future of autonomous navigation relies on sophisticated sensor fusion and edge-computing AI to process this data in real-time. This tutorial will guide attendees through the complete lifecycle of modern automotive perception systems. We will begin with the fundamental operating principles and hardware architectures of each sensor type, moving into the complexities of data synchronization and calibration. The second half of the tutorial will focus on the software and AI layer, demonstrating how Large Language Models (LLMs) and advanced neural networks are being optimized for edge deployment (e.g., local processing) to handle complex sensor fusion tasks. Finally, we will address the critical regulatory and compliance frameworks (including FCC/ICES norms for sensors) that govern the deployment of these technologies in production vehicles.

Tutorial 12: Multiphase Electric Drives: Sustainable Rewinding, Inverter Topologies, and Control

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ABSTRACT

Multiphase electric drives are increasingly used in transportation, aerospace, marine propulsion, renewable-energy systems, and other high-reliability applications. Compared with conventional three-phase drives, they offer lower per-phase current, improved torque quality, additional control freedom, and continued operation under phase or converter faults. This tutorial presents a practical journey from multiphase-machine fundamentals to sustainable rewinding, inverter design, and advanced control. It first explains the physical meaning of multiphase windings, phase displacement, rotating magnetomotive force, and vector-space decomposition. Five-phase, symmetrical six-phase, and asymmetrical six-phase machines are then compared in terms of winding structure, harmonic behaviour, and fault-tolerant capability. The first half focuses on converting existing three-phase stators into five- or six-phase machines. It covers slot/pole feasibility, winding factors, spatial harmonics, conductor selection, voltage requirements, thermal limits, and practical rewinding arrangements. Rewound machines are compared with purpose-designed multiphase stators in terms of performance, cost, manufacturability, sustainability, and faulted operation. The second half addresses multiphase inverter topologies and control. Two-level and three-level converters are introduced, followed by detailed discussion of conventional and reduced-switch five-phase inverters, common-mode-voltage reduction, and control of symmetrical and asymmetrical six-phase drives. PWM, SVPWM, harmonic mitigation, loss reduction, and model predictive control are compared using simulation and experimental results. By the end of the tutorial, participants will be able to assess multiphase-drive architectures, evaluate stator-rewinding feasibility, select suitable inverter and control methods, and plan healthy- and fault-condition validation.

Tutorial 13: System Identification of Grid-Forming and Grid-Following Converter Control Modes in IBR-Dominated Networks

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ABSTRACT

The global energy landscape is undergoing a profound transformation driven by the large-scale integration of inverter-based resources (IBRs), including solar photovoltaics, wind generation, and battery energy storage systems. Unlike conventional synchronous generators, IBRs interface with the grid through power electronic converters, introducing fundamentally different dynamic characteristics and new stability challenges for transmission system operators (TSOs). A key determinant of system behavior is the control strategy implemented within these converters, which primarily falls into two categories: grid-following (GFL) and grid-forming (GFM) control. These control modes exhibit distinct dynamic responses under disturbances, significantly influencing frequency stability, voltage regulation, inertia emulation, and fault response. As power systems evolve toward lower inertia and higher converter penetration, understanding and distinguishing between these control modes becomes critical for secure and reliable grid operation. In practice, however, converter control implementations provided by vendors are often treated as “black boxes,” limiting the visibility available to TSOs for both planning and real-time operations. This lack of transparency introduces uncertainties in system studies and operational decision-making, particularly under extreme conditions. This tutorial addresses this challenge by introducing measurement-based system identification techniques for distinguishing between GFL and GFM control modes. Participants will learn how to leverage time-domain measurement data to understand control characteristics without requiring detailed knowledge of internal controller designs. The tutorial will cover both classical approaches and emerging methods such as AI for system identification. The session will bridge the gap between academic research and practical TSO applications by discussing implementation considerations, data requirements, and integration into operational workflows. Real-world challenges such as measurement noise, limited observability, and scalability will be addressed, along with future directions including real-time monitoring and adaptive modeling.

Tutorial 14: Condition Monitoring and Prognosis in Power and Energy Systems

From Advanced Signal Processing and Hybrid AI to Digital Twins and LLM-Enabled Decision Support

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ABSTRACT

Condition monitoring, fault diagnosis, and prognosis are essential for ensuring the reliability, availability, and safety of modern power and energy systems, including electric machines, power electronic converters, renewable energy systems, and energy storage technologies. Among the available monitoring techniques, electrical and signal-based approaches, such as current, voltage, vibration, and thermal analysis, offer non-invasive, cost-effective, and widely deployable solutions. These techniques have been extensively studied and standardized, as reflected in international standards such as ISO FDIS 20958 for electrical signature analysis. However, the operating conditions of contemporary power and energy systems are increasingly non-stationary, characterized by variable-speed operation, intermittent renewable sources, frequent transients, and cyber-physical interactions. Under such conditions, classical spectral analysis techniques often exhibit limited robustness, motivating the development of advanced signal processing methods and, more recently, machine learning and deep learning-based approaches. While data-driven methods have demonstrated strong performance in fault diagnosis and remaining useful life (RUL) estimation, their practical deployment is constrained by data scarcity, lack of labeled degradation histories, limited generalization across assets, and challenges in interpretability. This tutorial provides a structured and progressive overview of failure diagnosis and prognosis methodologies for power and energy systems, starting from advanced signal processing techniques and evolving toward hybrid AI, digital twin-based approaches, and AI-2.0 paradigms. Particular emphasis is placed on physics-guided and hybrid modeling, which combine physical insight with data-driven learning to improve robustness, interpretability, and industrial relevance. As a recent extension, the tutorial introduces large language models (LLMs) and related foundation models as system-level support tools for condition monitoring and prognosis. In line with current research perspectives, LLMs are not presented as replacements for signal processing or machine learning models, but rather as high-level cognitive layers capable of interpreting diagnosis and prognosis outputs, integrating heterogeneous information (e.g., maintenance records and operational context), and supporting human-in-the-loop decision-making within digital twin-centric architectures.

Tutorial 15: Multi-Scale Resilience Enhancement and Coordinated Orchestration of Next-Generation Networks for Energy and Coupled Traffic V2G Systems

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ABSTRACT

The large-scale integration of electric vehicles (EVs), renewable energy resources, intelligent transportation infrastructures, and vehicle-to-grid (V2G) technologies is transforming urban energy ecosystems into highly interconnected cyber-physical systems. While these developments offer unprecedented opportunities for decarbonization and operational flexibility, they also introduce significant challenges related to resilience, scalability, uncertainty, cybersecurity, and real-time coordination across power and transportation networks. This tutorial presents emerging methodologies for the modeling, control, resilience enhancement, and coordinated orchestration of coupled power-traffic-energy systems. Particular emphasis is placed on next-generation V2G-enabled microgrids operating under dynamic and uncertain urban conditions. The tutorial introduces multi-scale modeling frameworks that capture interactions among energy sources, converters, EV charging infrastructures, grid assets, users, and transportation networks. Participants will learn advanced techniques in source-load demand forecasting, distributed energy management, resilience assessment, fault detection, and digital twin-enabled system operation. Recent developments in artificial intelligence, machine learning, distributed optimization, and parallel intelligence systems will be discussed as enabling technologies for future urban energy and transportation ecosystems. The tutorial will further demonstrate how digital twins and parallel simulation environments can be utilized for real-time testing, validation, and decision support. Practical examples, case studies, and research challenges will be presented to bridge the gap between theoretical developments and real-world deployment of resilient V2G-enabled urban microgrids.

Workshop 1: PSCAD

Topic: To be announced

Instructor: Yousef Pipelzadeh

Email: ypipelzadeh@mhi.ca

Date and Time: Sunday, 18 October 2026 14:00-17:00

Workshop 2: SIEMENS

Topic: Grid Digital Twin via PSS[®]E V35 New Models for Dynamic Simulation and Gridscale X Platform

Instructor: Tewfik Timeridjine

Email: tewfik.timeridjine@siemens.com

Date and Time: Wednesday, 21 October 2026 14:00-15:30

Workshop 3: Typhoon HIL

Topic: To be announced

Instructor: Dragan Zuber

Email: zuber@typhoon-hil.com

Date and Time: Wednesday, 21 October 2026 16:00-17:00

Women in IES Luncheon

The Women-in-IES Luncheon is organized by the IEEE Industrial Electronics Society's Women-in-IES (WIE) committee as part of IECON 2026. The luncheon brings together women researchers, engineers, and students, alongside allies, to discuss the role of women in industrial electronics, share career experiences, and build professional networks across academia and industry. Past editions have featured invited talks from senior women engineers, a moderated panel on leadership and career development, and an informal networking lunch open to all delegates, not only Women-in-Engineering members. For IECON 2026 the session is organized by the Women in IES Chairs: Jing Zhou (Chair), Regina Roos, Mihoko Niitsuma, Muneera Al Qahtani, Selma K. Awadallah, Morgan Kiani, Leila Parsa, and Yushan Liu. The date, time, and confirmed speakers had not yet been published on the conference website when this content was prepared.

Newbies: First-Time Attendees Session

The Newbies session is a Collaboration and Engagement Committee event designed exclusively for first-time IECON attendees. It offers a welcoming, informal introduction to the IEEE Industrial Electronics Society community before the technical program gets underway. During the session, first-time delegates can learn how IEEE IES supports their careers, meet researchers and IES members from around the world, and take part in interactive engagement activities intended to build early connections. The session also includes a welcome reception with food and refreshments, along with planned surprises for newcomers. The session is scheduled for **Monday, 19 October 2026**, from 17:00 to 19:00; the room will be announced closer to the conference. It is hosted by Lucia Lo Bello, Chair of the IES Collaboration and Engagement Subcommittee, on behalf of the Society.

IES Students and Young Professionals Paper Assistance Program (IES-SYPA)

The IEEE IES Students and Young Professionals Paper Assistance Program (IES-SYPA) is a competitive travel-grant scheme run by the IES Student and Young Professionals Activity Committee. For IECON 2026, around 52 grants are available to IEEE IES student and young-professional members with an accepted, registered paper that they will present in person. Applicants submit a 3-minute video about their work, reviewed in two rounds on impact, creativity, and presentation quality; winners receive travel support and a diploma at the Gala Dinner. During the conference, the associated SYP Forum gives students and young professionals direct access to IEEE Fellows, the IES President, and AdCom members through keynote talks, the 3-minute video session, and open discussion. The program is chaired by Chathurika S. Wickramasinghe.