Special Session & Regular Oral

DAY1 June 29, 2026

16:00-17:40 **Session Chair:** **Jing Li** **Oral Room 1(DB-A06)**	**Special Session 1:** **Advanced Control for Grid-Connected Converters: From Power Grids to Vehicle-to-Grid and E-Mobility Application** **Integral-Augmented Sliding Mode Voltage Control for DAB Converters with Q-learning Gain Optimization** *[CPE- POWERENG26-000022]* Ruoning Liu, Yunfei Yin, Yun Wang, Gershome Abaho, Tao Zhou, Zejiao Dong **Data-Driven Control for LCC-S DWPT Systems: A Reinforcement Leaming Enhanced Model-Free Adaptive Control Approach** *[CPE- POWERENG26-000024]* Yun Wang, Yunfei Yin, Ruoning Liu, Yufei Zhai, Gershome Abaho, Zejiao Dong **Electric Bicycle Hybrid Energy Storage Wireless Charging System Based on LCC-S Compensation** *[CPE- POWERENG26-000043]* Qing Liu, Hailong Zhang, Yanbing Tian **Enhanced Model Predictive Control for ISOP Systems Utilizing a Multi Transformer Isolated Weinberg Converter with Integrated Decoupling** *[CPE- POWERENG26-000045]* Zhihang Cao, Zheng Dong, Li Yang **Multi-Layer Barrier Function-based Adaptive Super-Twisting Control for NPC Converters** *[CPE-POWERENG26-000052]* Shuhe Wei, Guangxin Liu, Zhuang Kang, Tailai Li, Xiaoning Shen
16:00-17:40 **Session Chair:** **CF Kwong** **Oral Room 2(DB-A04)**	**Special Session 2:** **Advanced Control Techniques for Power Electronics Converters** **Short Term Dynamic Power Allocation for Four-Port Solid State Transformers** *[CPE-POWERENG26-000003]* Ali Sharida, Sertac Bayhan, Haitham Abu-Rub, Uğur FESLİ

16:00-17:40 **Session Chair:** **CF Kwong** **Oral Room 2(DB-A04)**	**Single-Stage Control of Cascaded Interleaved Boost–LLC Converter for PV Battery Charging Using Super-Twisting Sliding Mode Control** *[CPE-POWERENG26-000011]* Naki Guler, RIDVAN CANBAZ, Uğur FESLİ, Hasan Komurcugil, Sertac Bayhan **Reactive Power Reduction in Three-Phase Dual-Active-Bridge Converters via Particle Swarm Optimization** *[CPE-POWERENG26-000013]* Mr. Jiacheng Wen, Prof. Giampaolo Buticchi, Dr. Yury Mikhaylov, Dr. Jiajun Yang, Dr. Shuo Wang, Prof. Nadia Tan **Model Predictive Control for Three-Phase NPC Converters with Reduced DC-link Capacitor** *[CPE-POWERENG26-000048]* Meiqi Wang, Lorenzo Carbone, Marco Rivera, Jacopo Riccio, Al Watson, Michele Degano **Impact of Random Pulse Width Modulation on Closed-Loop Current Control in Three-Phase Inverters** *[CPE-POWERENG26-000059]* Mr. Alessandro Silvestro, Prof. Giacomo Scelba, Dr. Shuo Wang, Prof. Giampaolo Buticchi, Dr. Abraham M. Alcaide

DAY2 June 30, 2026

16:00-17:40 **Session Chair:** **Jiaqin Sun** **Oral Room 1(DB-A06)**	**Special Session 3:** **Others** **Energy Optimization System of Electric Vehicles - A Case Study for Applications of Deep Reinforcement Learning in the Real World** *[CPE-POWERENG26-000037]* Binjian Xin **Enhancing DER-Rich Distribution Networks Through V2G-Enabled EV Flexibility and Smart Charging** *[CPE-POWERENG26-000014]* Abdullah Ajabbar, Usman Zafar, Muneera Al-Qahtani, Sertac Bayhan **Performance Analysis of Robust Grid-Tied Sustainable PV-Powered EV Charging Terminals** *[CPE-POWERENG26-000020]* Debabrata Mazumdar, Josep M. Guerrero, Angula Rajamallaiah **VSG-MPC-Based LVRT Control Method for Power Systems** *[CPE-POWERENG26-000044]* Rui An, Zhenghong Tu, Ying Xu, Zhongkai Yi **Fractional-order Terminal Sliding Mode Control of Induction Motor Control System with Unmatched Uncertainties** *[CPE-POWERENG26-000027]* Yuhang Zhang, Minghao Zhou, Xinglong Zheng, Zizhen Qiu, Feng Qiu, Zhe Wu

DAY3 July 1, 2026

09:00-10:40 **Session Chair: Yushan Liu** **Oral Room 1(DB-A06)**	**Regular Oral 1:** **Distributed DC-Link Architecture for Residential Energy Hubs** *[CPE-POWERENG26-000015]* Sobhan Mohamadian, Amir Ghasemian, Yonglei Zhang, Xibo Yuan, Concettina Buccella, Carlo Cecati **Three-Port Current-Fed DAB for EV Charging from Trolleybus Network with BESS Integration** *[CPE-POWERENG26-000009]* Gianluca Gentile, Riccardo Mandrioli, Rudolf Paternost, Filippo Pellitteri, Vincenzo Cirimele, Mattia Ricco **A Three-Phase Interleaved Boost Inverter with Carrier Phase-Shift Modulation** *[CPE-POWERENG26-000010]* Yushan Liu, Bangshuo Wu, Longtao Zhou, Xiao Li, Marco Rivera, Patrick Wheeler **Modified Extended-Phase-Shift for Mitigating Conduction Losses Unbalances in Current-Fed Dual-Active-Bridge Under DC Current Offset** *[CPE-POWERENG26-000012]* Diego Anchieri, Lohith Kumar Pittala, Riccardo Mandrioli, Georgios Orfanoudakis, Alon Kuperman, Mattia Ricco **A Comparative Study of Common Failures and Fault Ride-Through Techniques for Input-Series Output-Parallel (ISOP) Converters** *[CPE-POWERENG26-000004]* Guanchu Wang, Giampaolo Buticchi, Chunyang Gu, Jiajun Yang, Chengbin Ma
09:00-10:40 **Session Chair: Xiaochen Zhang** **Oral Room 2(DB-A04)**	**Regular Oral 2:** **Sensitivity Analysis for an Active Neutral Point Clamp Power Converter with GaN Devices** *[CPE-POWERENG26-000018]* Marianna Mancini, Filippo Savi, Stefano Nuzzo, Alessandro Chini, Davide Barater **Experimental Validation of a 1-kW Bidirectional Three-Phase Active-Front-End Converter for Electric Vehicle Charging Applications** *[CPE-POWERENG26-000023]* Alfonso Núñez **High-Speed Motor Test Bench Validation of Single-and Dual-Duty Modulated WBG Y-Inverter** *[CPE-POWERENG26-000030]* Ms. Vanesa Vera, Prof. Alberto Castellazzi, Dr. Shuo Wang

09:00-10:40 **Session Chair: Xiaochen Zhang** **Oral Room 2(DB-A04)**	**External Miller Clamp Architectures for GaN HEMT Half-Bridges** *[CPE-POWERENG26-000031]* Zhi Lam Ting, Jerome Yuen, Freddy Kheng Suan Tan, Xingqi Liu, Jiajun Yang **LLC Resonant Converter Scaling Law Design Method Considerations for High Gain Designs** *[CPE-POWERENG26-000032]* Jerome Yuen, Zhi Lam Ting, Freddy Kheng Suan Tan, Jiajun Yang
11:10-12:30 **Session Chair: Jianwei Zhang** **Oral Room 1(DB-A06)**	**Regular Oral 3:** **Harmonic State-Space Impedance Models of MMCs under Direct and Indirect Control** *[CPE-POWERENG26-000033]* Juhyeong Jeon, Jae-Jung Jung **Inner-Loop Broadband Passivity Boundary of Voltage Feedback Decoupling in Virtual-Admittance-Based Grid-Forming Converters** *[CPE-POWERENG26-000035]* Stephen Arinze Obi, Jae-Jung Jung **Small-Signal Model of Single-Stage Current Source Inverter with Discharge Path in Motor Drives Applications** *[CPE-POWERENG26-000036]* Emilio Carfagna, Giovanni Migliazza, Fabio Immovilli, Emilio Lorenzani **All-GaN Double Gain Y-Inverter** *[CPE-POWERENG26-000041]* Maria Kazakova, Alberto Castellazzi
11:10-12:50 **Session Chair: Liang Huang** **Oral Room 2(DB-A04)**	**Regular Oral 4:** **Self-Measurement of Grid-Connected Converters through Secondary-Side Perturbation Injection** *[CPE-POWERENG26-000050]* Shaoyuan Shen, Ruokai Xu, Zhixiang Zou, Xingqi Liu **Cost-efficient Inductor Sizing in Solid-state DC Breakers Based on Semiconductor Fault-current Conduction Capability** *[CPE-POWERENG26-000054]* Honey Mol Mathew, Moein Ghadrdan, Giovanni De Carne **Class-E PA Design for Multi-receiver MHz WPT Systems Based on Impedance Region Analysis** *[CPE-POWERENG26-000055]* Zhan Liu, Yu Xiao, Shuang Li, Ming Liu, Chengbin Ma

11:10-12:50 **Session Chair:** **Liang Huang** **Oral Room 2(DB-A04)**	**State of Health Estimation for Lithium-Ion Batteries Using Charge-Segment Timing Indicators** *[CPE-POWERENG26-000019]* Fazal Ur Rehman, Aaruththiran Manoharan, Henrik Andersen, Carlo Cecati, Concettina Buccella **Fast Heuristic Weight Tuning for Hierarchical Distributed Consensus-based Post-Disaster Microgrid Energy Management** *[CPE-POWERENG26-000029]* Hengrui Tian, Dan Wang, Aditya Joshi, Mo-Yuen Chow
14:50-16:30 **Session Chair:** **Yuli Bao** **Oral Room 1(DB-A06)**	**Regular Oral 5:** **A Modular Multi-Agent Simulation Platform for Microgrid Energy Management** *[CPE-POWERENG26-000038]* Ruoyi Ding, Mo-Yuen Chow **A Smart Transformer Architecture for Datacenter Application** *[CPE-POWERENG26-000060]* Mohamed Moharram, Johannes Diers, Martin Votava, Mahyar Hassanifar, Davide D'Amato, Marius Langwasser, Marco Liserre **A Performance-Based IEC 61850 Approach for Substation Automation in Renewable Energy Integrated AC Microgrids** *[CPE-POWERENG26-000007]* Nobuhiko Kobayashi, Yanqing Liu, Arindam Ghosh, Yanyan Yin **Impedance-Based Stability Analysis and Control Design for a Cascaded DAB and GFL Converter System** *[CPE-POWERENG26-000025]* Xingqi Liu, Giampaolo Buticchi, Jiajun Yang, Zhixiang Zou, Chengbin Ma, Marco Liserre **Mitigating Practical Limitations of LQR for Optimal Control of Grid-Tied Voltage Source Inverter via LQG(MEE) Integration** *[CPE-POWERENG26-000051]* Sara Ibrahim, Giampaolo Buticchi, Jiajun Yang

14:50-16:30 **Session Chair: Ahmed Nasr** **Oral Room 2(DB-A04)**	**Regular Oral 6:** **Gradient-Based Power Strategies for Battery Energy Storage Systems: State of Health Sensitivity Analysis in Day-Ahead and Intraday Markets** *[CPE-POWERENG26-000057]* Antonio J. Romero-Barrera, Alvaro Paricio-Garcia, Miguel A. Lopez-Carmona, Takayuki Ito **Magnetic Shielding Measurements of the Dewar System Below 1 kHz** *[CPE-POWERENG26-000005]* Manqi Xu, Peng Hu, Zhongyuan Zhou, Wei Hua **On Damper Cage End-Effects in Classical Wound-Field Synchronous Generators** *[CPE-POWERENG26-000026]* Israr Ullah, Michael Galea, Stefano Nuzzo, Paolo Giangrande, Joseph Cilia, Vincenzo Madonna **Evaluation of Maximum Torque and Power of a Switched Reluctance Machine over Entire Speed Range in Driving and Generating Modes Considering Inverter Limitations** *[CPE-POWERENG26-000039]* Lam Pham, Nikita Gorbunov, Valeria Garmashova, Hao Chen, Anton Dianov, Pavel Dergachev, Galina Demidova, Alecksey Anuchin **Passive Axial Stiffness Enhancement in Radially Magnetised and Halbach-Array Surface Permanent Magnet Machines** *[CPE-POWERENG26-000047]* Mukhammed Murataliyev, Amedeo Vannini, Gabriele Antonino Cagliari, Oğuz Korman, Meiqi Wang, Michele Degano, Chris Gerada, Giacomo Sala, Wolfgang Gruber