Sunday, 23 June

8am **Registration Desk and Welcome Coffee**
Room Europe B-C

9am **T1 -**
Tutorial 1 - RESEARCH-ORIENTED - Next-generation battery management system for e-mobility and energy storage
Room Schengen 1

Next-generation battery management system for e-mobility and energy storage
» Changfu Zou / Yizhou Zhang / Abhijit Kulkarni

9am **T2 -**
Tutorial 2 - RESEARCH-ORIENTED - Grid forming power converters: from fundamentals to advanced topics
Room Fischbach

Grid forming power converters: from fundamentals to advanced topics
» Xiongfei Wang / Heng Wu

9am **T3 -**
Tutorial 3 - RESEARCH-ORIENTED - Power electronics and electrolyzer technologies for highest efficient Hydrogen production
Room Diekirch-Echternach

Power electronics and electrolyzer technologies for highest efficient Hydrogen production
» Stig Munk-Nielsen / Thomas Ebel

9am **T4 -**
Tutorial 4 - RESEARCH-ORIENTED - Microgrid-forming: Autonomous Control and System Stability
Room Schengen 2

Microgrid-forming: Autonomous Control and System Stability
» Jinjun Liu / Zeng Liu

12pm **Lunch Break**

1pm **T5 -**
Tutorial 5 - HANDS-ON-ORIENTED - Digital Control of Grid-Tied Converters: From Theory to Practice using Typhoon HIL
Room Schengen 1

Digital Control of Grid-Tied Converters: From Theory to Practice using Typhoon HIL
» Fernanda de Morais Carnielutti / Caio Osório

1pm **T6 -**
Tutorial 6 - HANDS-ON-ORIENTED - Digital Real Time Simulation through OPAL-RT as Enabler of Novel Energy Technologies
Room Fischbach

Digital Real Time Simulation through OPAL-RT as Enabler of Novel Energy Technologies
» Sebastian Hubschneider / Marija Stevic / Giovanni de Carne

1pm **T7 -**
Tutorial 7 - HANDS-ON-ORIENTED - New Automation Technology by Beckhoff for Energy Production and Distribution
Room Diekirch-Echternach

New Automation Technology by Beckhoff for Energy Production and Distribution
» Dirk Kordtomeikel / Fabian Assion / Nils Johannsen/ Karl Stapelfeldt

1pm **T8 -**
Tutorial 8 - HANDS-ON-ORIENTED - Model-Based Control Design and Testing with Embedded Code Generation Using the PLECS Toolchain
Room Schengen 2

Continued from **Sunday, 23 June**

Model-Based Control Design and Testing with Embedded Code Generation Using the PLECS Toolchain
» Niklaus Felderer / Christopher Ranisch / Christian Weiner

Monday, 24 June

8am **Registration Desk and Welcome Coffee**
Room Europe B-C

8:45am **Opening Ceremony**
Room Europe A - Plenary

Welcome to IEEE PEDG 2024
» Pedro Rodriguez - Local Chair

9am **KN1 -**
Keynote Speech 1 - Prof. Hirofumi Akagi, Tokyo Institute of Technology (Japan)
Room Europe A - Plenary
Chaired by: Prof. Pedro Rodriguez

The Instantaneous Power Theory in Three-Phase Circuits: Why and How did it Emerge in 1983?
» Prof. Hirofumi Akagi

9:45am **KN2 -**
Keynote Speech 2 - Prof. Rik de Doncker, RWTH Aachen University (Germany)
Room Europe A - Plenary
Chaired by: Prof. Pedro Rodriguez

DC Technology for Flexible Electrical Grids enabling Sector Coupling - Can Technology Accelerate Innovation?
» Prof. Rik de Doncker

10:30am **Coffee Break**
Room Europe B-C

11am **PS1 -**
Panel Session 1 - Future Perspectives on Solid-State Transformers in Distribution Grids
Room Schengen 1
Chaired by: Prof. Alex Q. Huang

11am **A Systematic Review of Solid-State Transformer for Large Ships and Their Shore Power Supply**
» Dr. Muhammad Umair Mutarraf, Dr. QIAN XUN, Dr. Marius Langwasser, Prof. Marco Liserre

11:15am **Last Developments and New Technologies in Solid-State Transformer**
» Prof. Marco Liserre, Dr. Levy Ferreira Costa, Dr. Zhicheng Guo, Dr. Davide D'amato, Dr. Samuel Queiroz, Prof. Alex Q. Huang

11am **TS1 -**
Technical Session 1 - Power Converters for Distributed Applications (1)
Room Schengen 2
Chaired by: Dr. Orkhan Karimzada and Dr. Dongsheng Yang

11am **Multi-time Scale and Electro-thermal Model Based Reliability and Efficiency Evaluations for Resonant Converter**
» Mr. Yanjie He, Mr. Ziang Li, Mr. Shuo Zhang, Prof. Yuqi Wei

11:20am **The Matrix Hybrid Solid State Transformer : Leveraging Three Phase Systems for Enhanced Grid Capabilities**
» Mr. Sanjay Rajendran, Prof. Alex Q. Huang

Continued from **Monday, 24 June**

11:40am **Comparative Analysis of Bond Wire Degradation in Power Modules during DC and AC Power Cycling**
» Mr. Kaichen Zhang, Prof. Francesco Iannuzzo, Prof. Frede Blaabjerg

12pm **Efficiency-Driven Design of a Reconfigurable Asymmetric LLC Converter with Ultrawide Output Voltage Range for EV Charging Applications**
» Mr. Sergio Fernandez Rojas, Dr. Dongsheng Yang, Dr. Krzysztof Puczko

11am **TS2 -**
Technical Session 2 - Advanced Control of Power Converters (1)
Room Diekirch-Echternach
Chaired by: Dr. Hamed Bizhani and Prof. Yongheng Yang

11am **A Robust Phase-Lock-Loop for Grid-Following Converters**
» Mr. Gengning Ying, Prof. Jun Zeng, Dr. Jie Song, Mr. Ni Liu, Mr. Minhai Wu, Prof. Eduardo Prieto Araujo, Prof. Junfeng Liu

11:20am **Synchronisation, dispatch and droop of VSCs: revisiting functionality in various coordinate systems**
» Prof. Sjur Føyen, Mr. Chirag Ramgopal Shah, Prof. Chen Zhang, Prof. Marta Molinas

11:40am **A Hybrid Dead-time Control for Totem Pole Bridgeless PFC**
» Mr. Tianyi Huang, Prof. Li Peng, Mr. Shuang Lu

12pm **Universal Interoperable Control Framework for Inverter-Based-Resources**
» Mr. Pranjal M. Gajare, Dr. Joseph Benzaquen, Prof. Deepak Divan

11am **TS3 -**
Technical Session 3 - Operation and Control of Distributed Power Grids (1)
Room Fischbach
Chaired by: Dr. Filipe Soares and Mr. Juan Diego Rios Peñaloza

11am **Discussion on Voltage Regulation Alternatives in Distribution Networks with Massive Distributed Generation**
» Dr. Silvangela Barcelos, Ms. Jakelini Soeiro, Dr. Edson Hirokazu Watanabe

11:20am **Automation Framework for Blockchain-Based Coordination Of Distributed Energy Resources**
» Mr. Cesar Cazal, Ms. Su Mon Tun, Mr. Irtaza Waheed, Mr. Manuel Pitz, Mr. Yoga Kannan, Mr. Thanakorn Penthong, Prof. Ferdinanda Ponci, Prof. Antonello Monti

11:40am **Testing the local stability of a multi-machine power system with constant power loads**
» Prof. Yoash Levron, Mr. Alan Valadez, Prof. George Weiss

12pm **Comparison analysis of short circuit ratio variants on the indication of power system voltage stability**
» Dr. Jianyu Zhou, Prof. fangzhou zhao, Prof. Heng Wu, Prof. xiongfei wang

12:30pm **Lunch Break**
Room Europe B-C

12:30pm **PTS1 -**
Poster Session 1 - Power Converters in Distributed Power Systems
Room Europe B-C

An Active Power Decoupling Strategy to Reduce the Capacitor Size of a Cascaded H-Bridge Converter in a Solid State Transformer
» Mr. Sachin Yadav, Dr. Zian Qin, Prof. Pavol Bauer

Modeling and Validation of Input Impedance for Three-Phase PWM Rectifier for Aviation Applications
» Ms. ZIXIAO XU, Mr. Hongwei Zhao, Ms. Siyang Liang, Ms. Zixuan Guo, Mr. Yufeng Wang, Prof. Weilin Li, Prof. Yang Qi

IoT-enabled Rapid Global Maximum Power Point Tracking for Multiple Photovoltaic Inverters
» Mr. Kangjia Zhou, Prof. Gao Feng, Ms. Caiyun Qin, Mr. Xiangjian Meng

Continued from **Monday, 24 June**

Reactive Current Injection Strategy under Faults for Grid-Forming Converters based on the Virtual-Flux Orientation
» Mr. Juan Dolado, Dr. Santiago Arnaltes Gomez, Dr. Joaquín Eloy-García, Dr. Jose Luis Rodríguez Amenedo

Development of GaN-based three phase inverter grid-tie inverter
» Dr. Orkhan Karimzada, Prof. Giulio DeDonato

Development of a Two-Level, Four-Leg Smart Inverter for Microgrid Applications
» Mr. Buck Brown, Mr. Jan Westman, Dr. Johan Enslin, Dr. Zheyu Zhang

A Novel Regulated High-Frequency DC Transformer for Intermediate Bus Architecture Application
» Ms. Jinru Qian

The Study on EMI Characteristics under Various Operational Conditions in DC-DC Converter for Electric Vehicle
» Ms. Jisu Yu, Mr. Kilho Lee, Mr. Junho Cho, Dr. Beomjin Choi

Exploring Non-Convexity Characteristics of Active Trap Filter Based on Local Optimal Control
» Mr. Boyuan Cui, Mr. Chao Gao, Mr. Liang Huang, Prof. Wenlong Ding, Prof. Poh Chiang Loh

Efficiency and Loss Analysis of a GaN HEMT based Synchronous Buck Converter at 123 K - 298 K
» Mr. Zilong Chen, Prof. Yuqi Wei, Mr. Yanjie He, Dr. Peng Sun

Parallel Modular Multilevel Converter Employing Open-Ended Winding Transformers
» Dr. Abdullrahman Al-Shammaa, Dr. Hassan Farh

Transient Stability Analysis for LCL-filtered VSCs based on Nonlinear Decoupling
» Dr. pc yang

Intelligent Junction Temperature Estimation of an IGBT Using Machine Learning and Vce Measurement
» Mr. Venkata Yoganand KONDA, Dr. Junhyung Jung, Prof. Marco Liserre

A Brain Emotional Learning - Based Speed Control Strategy for DC Motors
» Mr. Ashkan Safari, Dr. Hoda Sorouri, Dr. Arman Oshnoei, Prof. Frede Blaabjerg

A Remote Voltage Supply Method Based on Sinusoidal-Excitation Cable Impedance Detection
» Ms. Mingzhu Fang, Prof. Donglai Zhang, Dr. Xianbin Qi, Mr. Jun Wu, Mr. Zhihao Wang

1:30pm **IS1 -**
Industry Session 1 - OPAL-RT, Beckhoff - Showcase Project in Distributed Energy Systems Utilizing Digital Real-time Simulation Tools and Advanced Automation Solutions
Room Europe A - Plenary
Chaired by: Prof. Giovanni De Carne

Showcase Project in Distributed Energy Systems Utilizing Digital Real-time Simulation Tools and Advanced Automation Solutions
» Mr. Louis Raymond (OPAL-RT)

2:30pm **PS2 -**
Panel Session 2 - Does a future IBR dominated grid represent a different paradigm? (Part 1)
Room Schengen 1
Chaired by: Prof. Johan Elsin

Current strategies for grid integration of IBRs — A power system view
» Deepak Ramasubramanian, EPRI – US. / Mark O'Malley, Imperial College London – UK. / Ben Kroposki, NREL – US. / Julian Leslie, National Grid – UK.

Continued from **Monday, 24 June**

2:30pm **TS4 -**
Technical Session 4 - Power Converters for Distributed Applications (2)
Room Schengen 2
Chaired by: Dr. Marius Langwasser and Prof. Fernanda Carnielutti

2:30pm **Multiport Y-Converter for Three-Phase AC Grid Integration with DC Systems**
» Mr. Ahmed Yahia Farag Abdelfattah, Dr. Davide Biadene, Dr. Tommaso Caldognetto, Prof. Paolo Mattavelli

2:50pm **Application of Statistical Model Checking for Robustness Comparison of Power Electronics Controllers**
» Dr. Mateja Novak, Dr. Iwona Grobelna, Dr. Ulrik Nyman, Prof. Frede Blaabjerg

3:10pm **High-Frequency Effects on Magnetics and Converter Performance: Implications for Power Electronic Converter Design**
» Mr. David Porras, Mr. Roderick Gomez, Mr. Ahmed Rahouma, Dr. Juan Carlos Balda

3:30pm **An Extendable High Step-up DC-DC Converter with Quasi-Parabolic Voltage Gain**
» Mr. Kavian Kamalinejad, Mr. Seyed Hossein Aleyasin, Mr. Mehdi Abbasi, Dr. Hossein Imaneini

2:30pm **TS5 -**
Technical Session 5 - Advanced Control of Power Converters (2)
Room Diekirch-Echternach
Chaired by: Prof. Sjur Føyen and Dr. Levy Ferreira Costa

2:30pm **Seamless Dual Mode Control Scheme for Dual Active Bridge Converter to achieve full load range Soft Switching and Minimum current stress**
» Mr. Karthik Parihar, Dr. Mukesh Kumar Pathak

2:50pm **Harmonic Distortion Analysis of an eGPU-fed Aircraft EPDS with Phase-Shifted Carrier PWM**
» Mr. Qilin Peng, Mr. Jiaqin Sun, Dr. Jiajun Yang, Prof. Giampaolo Buticchi, Dr. Sandro Guenter, Dr. Nadia Tan, Prof. Patrick Wheeler

3:10pm **Reactive Power-Voltage Droop Design of Dispatchable Virtual Oscillator Control for Single-Phase Inverters**
» Ms. Xiaomeng Shen, Mr. Hao Luo, Dr. Yinxiao Zhu, Prof. Yongheng Yang

3:30pm **Dynamic Modeling of Differential DC-DC Converters Using Thévenin Equivalent Circuit**
» Dr. Marcos Antônio Salvador, Mr. Tailan Orlando, Dr. Denizar Cruz Martins, Dr. Marcelo Lobo Heldwein, Dr. Telles Brunelli Lazzarin, Dr. André Luís Kirsten, Dr. Roberto Francisco Coelho

2:30pm **TS6 -**
Technical Session 6 - Operation and Control of Distributed Power Grids (2)
Room Fischbach
Chaired by: Dr. Jianyu Zhou

2:30pm **Optimal Re-dispatch and Reactive Power Management in the Fuerteventura-Lanzarote Grid using Real-time Optimization in the Loop**
» Ms. Carolina Maria Martin Santos, Dr. Francisco Arredondo, Dr. Santiago Arnaltes Gomez, Dr. Jaime Manuel Alonso, Dr. Jose Luis Rodríguez Amenedo

2:50pm **Asymmetric Operation of Power Lines by Using E-STATCOM and Internal Model Controllers**
» Mr. Ansar Berdygozhin, Mr. Benjamin Pepper, Dr. David Campos-Gaona

3:10pm **Active and Reactive Power Management of Hybrid Energy Systems for Reactive Power Support in Distribution Network**
» Dr. Hamed Bizhani, Mrs. Fatemeh Rezayof Tatari, Dr. Grzegorz Iwanski

Continued from **Monday, 24 June**

4pm **Coffee Break**
Room Europe B-C

4:30pm **PS3 -**
Panel Session 3 - Does a future IBR dominated grid represent a different paradigm? (Part 2)
Room Schengen 1
Chaired by: Prof. Pedro Rodriguez

Does a future IBR dominated grid represent a different paradigm?

» Dr. Deepak Divan, Georgia Tech – US. / Dominic Gross, UW-Madison – US. / Xiongfei Wang, KTH – Sweden. / Julia Matevosyan, ESIG/GPS – US.

4:30pm **TS7 -**
Technical Session 7 - Power Converters for Distributed Applications (3)
Room Schengen 2
Chaired by: Dr. Phani Kumar Chamarthi and Dr. Yinxiao Zhu

4:30pm **Current Sharing Control of Multiphase Interleaving Single Inductor Four Switch Buck-Boost Converter for Energy Storage System**
» Mr. Aqeel Ur Rahman, Dr. Filippo PELLITTERI, Dr. Nicola Campagna, Prof. Antonino Oscar Dl TOMMASO, Prof. Rosario Miceli

4:50pm **Application of Hybrid GaN-IGBT Device Combination for Switched-Capacitor Based Multilevel Inverter Topology with Uniform Power Losses**
» Dr. Marif Daula Siddique, Dr. Prasanth Sundararajan, Mrs. Dharani Kolantla, Dr. Mrutyunjaya Sahani, Dr. Rahul Sadanand Bhujade, Dr. Sanjib Kumar Panda

5:10pm **Comparative Analysis of a Single-Phase Model Applicable to the Dual Active Bridge Converter**
» Mr. Francisco Salazar, Dr. Andrés Escobar-Mejía, Dr. Mauricio Holguín-Londoño

5:30pm **A New Transformerless High Voltage Gain EV Onboard Charger with Optimal Power Components**
» Dr. Phani Kumar Chamarthi, Dr. Greg Baltas, Dr. Shailendra Singh, Dr. Jun Cao, Prof. Pedro Rodriguez

4:30pm **TS8 -**
Technical Session 8 - Operation and Control of Distributed Power Grids (3)
Room Diekirch-Echternach
Chaired by: Prof. Xin Chen and Prof. Jingxin Hu

4:30pm **A Low Cost Phase Estimation Device for PMU Phase Validation**
» Mr. Manuel Pitz, Mr. Sriram Karthik Gurumurthy, Mr. Matthias Nowak, Dr. Stefan Lankes, Prof. Ferdinanda Ponci, Prof. Antonello Monti

4:50pm **Re-evaluating Rural Electrification Options for the Energy Transition**
» Mr. Kiswendsida Elias Ouedraogo, Dr. Pinar Ekim, Dr. Erhan Demirok

5:10pm **A Novel Approach for Removing Decaying DC Offset from Fault Current Signals Using Cumulative Sum – Fast Moving Average (CumSum-FMA) Hybrid Algorithm**
» Mr. Philip Abel, Mr. Friedrich Wiegel, Dr. Michael Kyesswa, Dr. Simon Waczowicz, Prof. Veit Hagenmeyer

5:30pm **A Non-Parametric Approach to Harmonic Instability Mitigation for Renewable-Based Power Plants**
» Mr. Sriram Karthik Gurumurthy, Prof. Antonello Monti

Continued from **Monday, 24 June**

4:30pm **TS9 -**
Technical Session 9 - Distributed Power Applications Driven by Artificial Intelligence
Room Fischbach
Chaired by: Dr. Vahid Arabzadeh

4:30pm **Graph Neural Network Based Deep Reinforcement Learning for Volt-Var Control in Distribution Grids**
» Mr. Aoxiang MA, Dr. Jun Cao, Prof. Pedro Rodriguez

4:45pm **Machine Learning-based Condition Monitoring of DC-link Capacitors in Drive Inverters using Case Temperature**
» Dr. Prasanth Sundararajan, Dr. Marif Daula Siddique, Dr. Mrutyunjaya Sahani, Dr. Jaydeep Saha, Dr. Sanjib Kumar Panda

5pm **Efficient Communication for Decentralized Federated Learning: An Energy Disaggregation Case Study**
» Mr. Yusen Zhang, Prof. Gao Feng, Mr. Kangjia Zhou

5:15pm **A Novel SeqGAN-LSTM Load Forecasting Framework for Electric Vehicle Charging Stations with Missing Data**
» Mr. Xiaohai Ge, Prof. Xin Zhang, Prof. Dehong Xu

6:30pm **Welcome Reception**
Room Europe B-C

7:30pm **Students & Young Professional Social Event**
Room Wiltz

Tuesday, 25 June

8am **Registration Desk and Welcome Coffee**
Room Europe B-C

9am **KN3 -**
Keynote Speech 3 - Prof. Ulrike Grossner, ETH Zürich (Switzerland)
Room Europe A - Plenary
Chaired by: Prof. Pedro Rodriguez

Advanced Power Semiconductors for Decarbonized Energy Systems
» Prof. Ulrike Grossner

9:45am **KN4 -**
Keynote Speech 4 - Prof. Frede Blaabjerg, Aalborg University (Denmark)
Room Europe A - Plenary
Chaired by: Prof. Pedro Rodriguez

Power Electronics Technology - Towards a Carbon Neutral Society
» Prof. Frede Blaabjerg

10:30am **Coffee Break**
Room Europe B-C

11am **PS4 -**
Panel Session 4 - MMC topology, control and testing for MV grid application
Room Schengen 1

MMC topology, control and testing for MV grid application
» Hui Li – Florida State University – US / Kenichiro Sano - Tokyo Institute of Technology – Japan. / Karl Schoder – Florida State University-CAPS – US. / Biao Zhao – Tsinghua University – China.

11am **TS10 -**
Technical Session 10 - Grid Forming Power Converters (1)
Room Schengen 2
Chaired by: Prof. Zeng Liu and Dr. Luiz Antonio Ribeiro

Continued from **Tuesday, 25 June**

11am **Hybrid Control for Integrating Grid-Forming and Grid-Following Capabilities in a Single VSI: An Efficiency-Driven Approach**
» Mr. Iman Lorzadeh, Dr. Omid Lorzadeh, Dr. Dimitar Bozalakov, Prof. Luc Dupre', Prof. Lieven Vandevelde

11:20am **Selective Virtual Impedance for Overcurrent Limitation in Grid-Forming Inverters under Asymmetrical Faults**
» Mr. Alvaro Morales-Munoz, Dr. Francisco D. Freijedo, Dr. Sante Pugliese, Prof. Marco Liserre

11:40am **Robust tuning of current controllers for grid forming inverters depending on the grid impedance**
» Mr. Florian Reissner, Mr. Yossef Melamed, Prof. George Weiss

12pm **Impedance-Based Stability Analysis of Grid-Forming Inverters with Virtual Impedance or Angle Droop for Improved Robustness**
» Mr. Robin Strunk, Mr. Pieris Sourkounis, Prof. Axel Mertens

11am **TS11 -**
Technical Session 11 - Advanced Control of Power Converters (3)
Room Diekirch-Echternach
Chaired by: Prof. Gao Feng

11am **Predictive Encoderless Control with EKF for PMSG-Based Wind Energy Conversion System**
» Mr. Shichang Zhou, Prof. Zhen Li, Dr. Haitao Li, Dr. Yuanxiang Sun, Ms. Qi Wang, Prof. Zhenbin Zhang

11:20am **Enhanced Soft Start-up Strategy of Dual Active Bridge Converter with Constant Current Stress and Dynamically Balanced Flux Linkage**
» Mr. Yao Huang, Prof. Jingxin Hu, Mr. jingyuan wang, Prof. Yuying He, Dr. Fei Liu, Prof. Xinbo Ruan

11:40am **A Current-Limiting Direct Voltage Model Predictive Control for DC-DC Boost Converter**
» Mrs. Fatemeh Rezayof Tatari, Dr. Hamed Bizhani, Dr. Grzegorz Iwanski

11am **TS12 -**
Technical Session 12 - Energy Storage in Distributed Power Systems (1)
Room Fischbach
Chaired by: Dr. Alessandro Lorenzo Palma and Dr. Aleksandr Viatkin

11am **Synchronization Circuit Design for Battery Energy Storage Integration in DFIM-Based Hydro Power Systems**
» Dr. Vishal Undre, Dr. Vijay Mohale, Prof. Thanga Raj Chelliah, Prof. Yogesh Hote

11:15am **Overview of Various Carbon Neutral Energy Storage Solutions, Supporting Grid Stability**
» Mr. Yogesh Bornarkar, Dr. Vijay Mohale, Dr. James Amankwah Adu

11:30am **Emerging Trends and Challenges in Smart Power Distribution for Marine Transportation**
» Mr. Sunny Sonandkar, Prof. Thanga Raj Chelliah

11:45am **Advanced Photovoltaic Flexible Power Control Method under Fast Changing Irradiance in Distributed PV-BESS System**
» Dr. Qiang Bi, Prof. Kai Sun

12:30pm **Lunch Break**
Room Europe B-C

12:30pm **PTS2 -**
Poster Session 2 - Analysis, Simulation and Control of Distributed Power Grids
Room Europe B-C

Continued from **Tuesday, 25 June**

Adaptive Control for Enhanced Performance in Grid-Connected Agricultural Machines
» Mr. Pedro dos Santos, Mr. Marcel Wingert, Mr. Marco Guerreiro, Prof. Steven Liu

Reliable Decentralized Control Scheme of DC Microgrid Using Transition Operations under DC-link Voltage Sensor Faults
» Mr. Dat Thanh Tran, Mr. Muhammad Alif Miraj Jabbar, Mr. Seong-Bae Jo, Mr. Sung Dong Kim, Prof. Kyeong-Hwa Kim, Dr. Myungbok Kim

A Dominant Oscillatory Nodes Localization Method for Multi-Converter-Fed Power Systems
» Dr. Donghui Zhang, Prof. Xin Chen, Dr. fan Yang

Analysis of Power Quality Improvement Techniques Applied to Grid-connected Wind Power Plants
» Mr. Mohib Ullah, Prof. Yajuan Guan, Prof. Juan C. Vasquez, Prof. Josep M. Guerrero

New Symmetrical Power-Flow Controllers for Universal Application in Meshed DC Grids
» Mr. Sreedhar Kammana, Prof. Rainer Marquardt, Prof. Thomas Brückner

Adaptive Inertia Estimation Based on Projection Identification Algorithm Applied to Unbalance Systems with VSM
» Ms. Ana Marin, Dr. Andrés Escobar-Mejía, Prof. Alfonso Alzate

Cyber Secure-oriented Communication Network Design for Microgrids
» Dr. Junjie Xiao, Dr. Lu Wang, Prof. Pavol Bauer, Dr. Zian Qin

A Decentralized Secondary Voltage Control and Voltage Unbalance Compensation Method in Islanded Microgrids
» Mr. Yidong Shi, Prof. Zeng Liu, Prof. Jinjun Liu, Mr. Wenchen Wang

η-ρ Pareto Design of a Balancing Converter for Bipolar DC Grids
» Mr. Sachin Yadav, Dr. Zian Qin, Prof. Pavol Bauer

Comparing STATCOM Direct and Indirect Control Algorithms: A Laboratory Investigation
» Mr. Zaid Ali, Mr. Bence Sütő, Mr. Tamás Guth, Dr. David Raisz

A Robust Model Predictive Control for PLL-Based Grid-Connected Converter Under Weak Grids
» Mr. Shuai Yuan, Prof. Zhixiang Zou, Prof. Fujin Deng, Prof. Marco Liserre

Real-Time Challenges of Co-Simulation Framework for Integrated Grid Operations System
» Mr. Abdul Shafae Mohammed, Dr. Johan Enslin, Mr. Zachary Smith

The Information Technology (IT) and Operational Technology (OT) Convergence in Industrial World
» Dr. Montri Wiboonrat, Mr. Sawatsakorn Chaiyasoonthorn, Prof. Somsak Mitatha, Prof. Surapong Siripongdee, Mr. Theeraporn Sriudomsilp

A Unified DC-Link Switching Ripple Suppression Modulation Method for Modular Multilevel Converters including Step-Down Mode
» Dr. Zhifeng Deng, Prof. Jinjun Liu, Prof. Sixing Du, Dr. Jun Zhang, Dr. Ning Guo, Prof. Zeng Liu

Discussion on Voltage Regulation Alternatives in Distribution Networks with Massive Distributed Generation
» Dr. Silvangela Lima Barcelos, Ms. Jakelini Soeiro, Dr. Edson Watanabe

An Optimized Electric Power and Reserves Economic Dispatch Algorithm for Isolated Systems Considering Water Inflow Management
» Mr. Darío Ferreira-Martínez, Mr. Filipe Oliveira, Dr. Filipe Soares, Dr. Carlos Moreira, Mr. Rui Martins

Continued from **Tuesday, 25 June**

Predicting Hydro Reservoir Inflows with AI Techniques Using Radar Data and a Numerical Weather Prediction Model
» Ms. M. Francisca Almeida, Dr. Filipe Soares, Mr. Filipe Oliveira, Prof. João Saraiva, Mr. Rui Pereira

1:30pm **IS2 -**
Industry Session 2 - Fuji Electric, Mitsubishi Electric - Showcase Project in Distributed Energy Systems Utilizing Cutting-Edge Industrial Power Processing and Control Solutions
Room Europe A - Plenary
Chaired by: Prof. Alex Q. Huang

Showcase Project in Distributed Energy Systems Utilizing Cutting-Edge Industrial Power Processing and Control Solutions
» Dr. Nils Soltau (Mitsubishi Electric)

2:30pm **PS5 -**
Panel Session 5 - Intelligent Energy Routers for Flexible and Renewable-based Electrical Networks (Part 1)
Room Schengen 1
Chaired by: Josep Pou

Intelligent Energy Routers for Flexible and Renewable-based Electrical Networks (Part I)
» Rik W. De Doncker, RWTH Aachen University, E.ON Energy Center – Germany / Antonello Monti, RWTH Aachen University, E.ON Energy Center – Germany / Marco Liserre, Kiel University/Fraunhofer ISIT – Germany / Federico Cecati, Kiel University/Fraunhofer ISIT – Germany

2:30pm **PS6 -**
Panel Session 6 - Empower a Billion Lives - EBL
Room Schengen 2
Chaired by: Prof. Frede Blaabjerg

Empower a Billion Lives - EBL
» Jelena Popovic, Twente University – The Netherlands / Issa Bataresh, University of Central Florida – US / Sanjib Kumar Panda, National University of Singapore – Singapore / Deepak Divan, Georgia Tech – US

2:30pm **TS13 -**
Technical Session 13 - Grid Forming Power Converters (2)
Room Diekirch-Echternach
Chaired by: Dr. Denizar Cruz Martins and Prof. Heng Wu

2:30pm **Grid-Forming Photovoltaic Generators Operating During Power System Transients**
» Dr. Javier Roldán Pérez, Dr. Milan Prodanovic, Dr. Justino Rodrigues, Dr. Carlos Moreira

2:50pm **Grid-Forming Converter with Improved Dynamic and Disturbance Rejection Capability**
» Mr. Amiron Serra, Dr. Luiz Antonio Ribeiro, Dr. Mehdi Savaghebi

3:10pm **Evaluation of the Grid-Forming Inertial Response for Power Reference and Grid-Supporting Functionalities**
» Dr. Joan Rocabert, Mr. Borja Garcia, Mr. Juan Villon, Dr. J.I. Candela, Prof. Pedro Rodriguez

3:30pm **A Methodology for Analysis and Design of Dispatchable Virtual Oscillator Grid-Forming Control Methods**
» Mr. Armando Jose Gomes Abrantes-Ferreira, Dr. Alexandre Cunha Oliveira, Dr. Antonio Marcus Nogueira Lima

2:30pm **TS14 -**
Technical Session 14 - Advanced Control of Power Converters (4)
Room Fischbach
Chaired by: Mr. Sriram Karthik Gurumurthy and Prof. Yuying He

2:30pm **Modified Sorting Algorithm for Fault-Tolerant Operation of Hybrid MMC With Hot Reserve Submodules**
» Mr. Mahyar Hassanifar, Ms. Simona Ventura, Dr. Marius Langwasser, Dr. Davide D'Amato, Dr. Vito Giuseppe Monopoli, Prof. Marco Liserre

Continued from **Tuesday, 25 June**

2:50pm **Fault Tolerant Control for Medium Voltage Hybrid MMC With Cold Reserve Submodules**
» Mr. Mahyar Hassanifar, Ms. Simona Ventura, Dr. Marius Langwasser, Dr. Davide D'Amato, Dr. Vito Giuseppe Monopoli, Prof. Marco Liserre

3:10pm **Investigation of the Influence of the Dead-Time on the Performance of an LLC Resonant Converter for High-Power Application**
» Dr. Samuel Queiroz, Dr. Levy Ferreira Costa

3:30pm **ANN-Based Real-Time Optimal Voltage Control In Islanded AC Microgrids**
» Mr. Abd Alelah Derbas, Prof. Chiara Bordin, Prof. Sambeet Mishra, Prof. Frede Blaabjerg

4pm **Coffee Break**
Room Europe B-C

4:30pm **PS7 -**
Panel Session 7 - Intelligent Energy Routers for Flexible and Renewable-based Electrical Networks (Part 2)
Room Schengen 1
Chaired by: Prof. Rolando Burgos

Intelligent Energy Routers for Flexible and Renewable-based Electrical Networks (Part II)
» Drazen Dujic, EPFL – Switzerland / Giovanni De Carne, Karlsruhe Institute of Technology – Germany / Xinbo Ruan, Nanjing University of Aeronautics and Astronautics – China / Jingxin Hu, Nanjing University of Aeronautics and Astronautics – China

4:30pm **PS9 -**
Panel Session 9 - Women in Engineering – Leading Modern Energy Systems
Room Diekirch-Echternach
Chaired by: Dr. Jessica Bian

Women in Engineering – Leading Modern Energy Systems
» Jelena Popovic - University of Twente, The Netherlands / Leila Manshaei - Hitachi Energy, Sweden / Shiori Idaka - Mitsubishi Electric Europe B.V. / Qianwen Xu - KTH Royal Institute of Technology, Sweden

4:30pm **TS15 -**
Technical Session 15 - Grid Forming Power Converters (3)
Room Schengen 2
Chaired by: Dr. Mateja Novak and Prof. Jinjun Liu

4:30pm **A Comprehensive Strategy for Grid Forming Control in DC Coupled Photovoltaic and Battery Energy Storage Inverters**
» Mr. Houshang Salimian Rizi, Mr. Zibo Chen, Prof. Alex Q. Huang, Prof. Pedro Rodriguez

4:45pm **Comparative Analysis of Grid-Forming Control of Energy Storage Systems for Black-Start**
» Ms. Lingjun Yao, Ms. Yunuo Yuan, Prof. Yongheng Yang, Mr. Yinzhang Peng, Mr. Qi Zhao, Mr. Lu Zhang

5pm **Impedance Estimation for Transient Stability Enhancement of Virtual Synchronous Machines**
» Mr. Benjamin Pepper, Dr. David Campos-Gaona

5:15pm **Stability Analysis of a Grid-Forming Converter without an Inner Current Control**
» Mr. Werner Fritsche, Mr. Tayssir Hassan, Prof. Sibylle Dieckerhoff

4:30pm **TS17 -**
Technical Session 17 - Energy Storage in Distributed Power Systems (2)
Room Fischbach
Chaired by: Dr. Adolfo Anta and Mr. Sunny Sonandkar

4:30pm **S.A.P.I.EN.T.E. hybrid system: an experimental test facility focused on energy generation and hybrid storage for self-consumption strategies**
» Dr. Alessandro Lorenzo Palma, Dr. Luca La Notte, Dr. Biagio Di Pietra, Mr. Ruggero Nissim

Continued from **Tuesday, 25 June**

4:50pm
Power Plant Control with Configurable Reserves for Grid-Forming Solar Power Plants with Hybrid Storage
» Mr. Juan Diego Rios Peñaloza, Mr. Gabriel García Gutiérrez, Dr. Milan Prodanovic, Dr. Javier Roldán Pérez

5:10pm
Hybrid Energy Storage Enhanced STATCOMs
» Dr. Aleksandr Viatkin, Dr. Shih-Feng Chou, Dr. Tim Augustin, Dr. Akif Zia Khan, Dr. Ali Tayyebi, Dr. Haofeng Bai, Prof. Jan R. Svensson

5:30pm
Power Fluctuation Suppression in Energy Storage for PV-Battery GFM Systems
» Mr. Kai Yin, Mr. Yinzhang Peng, Mr. Lu Zhang, Mr. Qi Zhao, Prof. Yongheng Yang

7:30pm
Gala Dinner (Award and Handover to PEDG 2025)
Room Europe B-C

Wednesday, 26 June

8am
Registration Desk and Welcome Coffee
Room Europe B-C

9am
KN5 -
Keynote Speech 5 - Prof. Deepakraj M Divan, Georgia Institute of Technology, Atlanta (USA)
Room Europe A - Plenary
Chaired by: Prof. Pedro Rodriguez

The Power Grid as a Clean Ecosystem
» Prof. Deepakraj M Divan

9:45am
KN6 -
Keynote Speech 6 - Dr. Jessica Bian, Grid-X Partners (USA)
Room Europe A - Plenary
Chaired by: Prof. Pedro Rodriguez

Regulatory Aspects of Implementing Advanced Technology
» Dr. Jessica Bian

10:30am
Coffee Break
Room Europe B-C

11am
PS8 -
Panel Session 8 - European Flagship Projects on Modern Energy Systems
Room Schengen 1
Chaired by: Ms. Ana Luisa Alves

European Flagship Projects on Modern Energy Systems
» Nikos Bilidis - i-STENTORE – EU / Giovanni de Carne - Research Facility 2.0 – EU / Speaker to be confirmed – AGISTIN – EU / Pedro Rodriguez – WeForming – EU

11am
TS16 -
Technical Session 16 - Operation and Control of Distributed Power Grids (4)
Room Schengen 2
Chaired by: Prof. Zhixiang Zou

11am
A Simple Global Maximum Power Point Tracking Scheme With Region Segmentation for Partially Shaded PV Modules
» Dr. Yinxiao Zhu, Prof. Yongheng Yang, Prof. Frede Blaabjerg, Mr. Runze Lv

11:20am
A Decentralized Control System for Series-Connected Grid-Integrated Photovoltaic Inverters
» Mr. Saleh Farzamkia, Mr. Halladi Shashwatha Kumara Kedlaya, Prof. Alex Q. Huang

Continued from **Wednesday, 26 June**

11:40am **Partial Inertial Support for PV MPPT Systems Connected to Grid Using the IPLL Control Strategy**
» Dr. Andres Tarraso, Mr. Pablo A. Moreno, Mr. Juan Villon, Dr. J.I. Candela, Dr. Joan Rocabert, Dr. Pedro Rodriguez

12pm **A Bumpless Transition Strategy for Efficient Partial Shading Detection in PV Systems**
» Mr. Afaq Hussain, Dr. Jahangir Hossain, Dr. Ricardo Aguilera Echeverria, Mr. Rodrigo Cuzmar Leiva

11am **TS18 -**
Technical Session 18 - Microgrids for Distributed Generation Systems
Room Diekirch-Echternach
Chaired by: Mr. Aqeel Ur Rahman

11am **Challenges of Microgrid Stability Assessment in the Presence of Inverter-Based Resources**
» Ms. Qing Lin, Dr. Rolando Burgos

11:15am **Decoupled Robust Back-stepping Control of Multi-phase Interleaving Converters for Power-to-Hydrogen Systems in DC Microgrid**
» Mr. Aqeel Ur Rahman, Dr. Filippo PELLITTERI, Dr. Nicola Campagna, Prof. Antonino Oscar DI TOMMASO, Prof. Rosario Miceli

11:30am **Implementation of a Droop and Synchronization Control for Grid-Forming Fictitious Synchronous Generator controlled Power Converters in Microgrids**
» Mr. FLORIAN REDMANN, Mr. Alexander Ernst, Prof. Amir Ebrahimi, Prof. Bernd Orlik

11am **TS19 -**
Technical Session 19 - Real-Time Simulation of Power Converter-Driven Applications
Room Fischbach
Chaired by: Dr. Junjie Xiao and Dr. Shailendra Singh

11am **Power Hardware-in-the-Loop Test Bench for DC Grid and Battery Emulation**
» Mr. Fabian Herzog, Mr. Benedict Mortimer, Prof. Rik W. De Doncker

11:20am **Realization of real-time simulation of power electronics systems in applications – A review of requirements and methods**
» Mr. Julian Saele, Mr. Ian OBryan

11:40am **Real-Time Cosimulation of Power Systems: Integration of eMEGASIM and ePHASORSIM Using OPAL-RT Simulators**
» Mr. Daniel de Rivero Peña, Dr. Shailendra Singh, Prof. Pedro Rodriguez, Prof. Pablo Garcia Fernandez

12pm **Mission Profile Emulator for Sub-modules in CHB-BESS of Frequency Support Applications**
» Mr. Moxi Wang, Mr. Lingqi Tan, Prof. Ke Ma

12:30pm **Lunch Break**
Room Europe B-C

12:30pm **PTS3 -**
Poster Session 3 - Energy Sotrage and Artificial Intelligence in Distributed Power Systems
Room Europe B-C

A Power Allocation Strategy for Hybrid Energy Storage System with Virtual Inertia Support
» Mr. Jialei Su, Prof. Kang Li, Mrs. Wei Zuo

Open Battery Platform: Open-Source Power Electronic Devices for Renewable Generation and Energy Storage Technology
» Mr. Peter Teske, Mr. Marius Gentejohann, Ms. Dorothea Wiemann, Mr. Lars Krüger, Prof. Julia Kowal, Prof. Sibylle Dieckerhoff

An Improved Distributed Economic Control Strategy in Combination with Unitized Regenerative Fuel Cell Stack
» Mr. jinyu yu, Dr. Lidan Zhou, Dr. gang yao, Mr. tianyou yu

Continued from **Wednesday, 26 June**

An Optimal Power-Splitting Strategy for Hybrid Storage Systems
» Dr. Adolfo Anta, Dr. Catalin Gavriluta, Mr. Denis Vettoretti, Dr. David Cabezuelo Romero, Dr. Eneko Unamuno

Emulation of a battery-sourced Black Start through Grid-forming Control of a Converter Test Bench
» Mr. ANTONIO MIELACH, Mr. FLORIAN REDMANN, Mr. Alexander Ernst, Prof. Amir Ebrahimi, Dr. Holger Raffel

Operation Maps for Hybrid Electrolyser and Battery Systems - A Luxembourgish Case Study
» Dr. Ángel Paredes Parrilla, Prof. Jose Aguado, Mr. Philipp Fisch, Mr. Patrick Witte, Mr. Sebastian Theissen, Prof. Pedro Rodriguez

Enhancing Grid Stability: A Frequency Regulation Control Strategy for BESS in Grid-Connected
» Mr. Juan Villon, Dr. Joan Rocabert, Dr. J.I. Candela, Dr. Pedro Rodriguez

Integration of modular energy storage solutions in the distribution grid
» Mr. Miguel Crespo, Mr. Carlos Gómez-Aleixandre, Mr. Gleisson Balen, Mr. Daniel de Rivero Peña, Mr. Ángel Navarro-Rodríguez, Dr. Cristian Blanco, Prof. Pablo Garcia Fernandez

Spatial-Temporal Prediction of Schedulable Capacity of Electric Vehicles based on Graph Convolutional Network with Spatial-Attention
» Prof. Meiqin Mao, Mr. JiXun Wu, Dr. Yang Cheng, Ms. Yuanyue Wang, Prof. Yan Du, Mr. MingLei Zhu, Mr. Zhang Wei, Prof. Liuchen Zhang

Harmonic Forecasting in Power Electronics: AI-Driven Machine Learning modeling Approach for Voltage Source Converters
» Mr. Ahmed Abdelsamd

Forecasting hybrid renewable power generation in Luxembourg: a comparative study of convolutional neural network's application
» Dr. Vahid Arabzadeh, Prof. Raphael Frank

Virtual Energy Storage Staking in Day-Ahead and mFRR markets - A Spanish Case Study
» Dr. Ángel Paredes Parrilla, Prof. Jose Aguado, Prof. Pedro Rodriguez

1:30pm

IS3 -
Industry Session 3 - Modeling Tech - Showcase Project in Distributed Energy Systems Utilizing Advanced Real-time Simulation Platforms with Hardware–in-the-Loop Capabilities
Room Europe A - Plenary
Chaired by: Prof. Ke Ma

Industry Session 3 - Modeling Tech - Showcase Project in Distributed Energy Systems Utilizing Advanced Real-time Simulation Platforms with Hardware–in-the-Loop Capabilities
» Wei Zhao

2pm

CKN -
Closing Keynote Speech - Prof. Dushan Boroyevich, Virginia Tech (USA)
Room Europe A - Plenary
Chaired by: Prof. Pedro Rodriguez

Future Systems for Transmission and Distribution of Electrical Energy?
» Prof. Dushan Boroyevich

2:50pm

Closing Ceremony
Room Europe A - Plenary