Sunday, 26 June

09:00 **TT1 -**
Tutorial - Impedance-based stability and sensitivity analysis of multi-terminal MMC-HVDC systems
Science Centre - Siemens Room

09:00 **TT2 -**
Tutorial - Thermographic testing as a basis for efficient usage of power electronics
Science Center - Einstein Room

09:00 **TT3 -**
Tutorial - Smart Battery, a new technology
Science Center - Bosch Room

09:00 **TT4 -**
Tutorial - Neutral Point Clamped Converters: Control solutions and reliability
Science Center - Fraunhofer Room

09:00 **TT5 -**
Tutorial - EV charging technologies
On-line 1

13:00 **Lunch Break**
Science Center - Foyer

14:00 **TT6 -**
Tutorial - Power Electronics Modelling for Real-Time Simulation
Science Centre - Siemens Room

14:00 **TT7 -**
Tutorial - Insight in Modern Capacitor Technologies for Power Electronic Applications
Science Center - Einstein Room

14:00 **TT8 -**
Tutorial - Design Automation and Optimization of LLC Converters for Energy Harvesting Applications
Science Center - Bosch Room

14:00 **TT9 -**
Tutorial - Artificial Intelligence for Next Generation Power Electronics – Challenges, Principles and Applications
Science Center - Fraunhofer Room

14:00 **TT10 -**
Tutorial - Emerging Power Electronics Technologies for Green Data Center
On-line 1

14:00 **TT11 -**
Tutorial - Pulse Energy Modulation v.s. Pulse Width Modulation for Single-Phase Power Inverters and PWM Rectifiers with Power Decoupling Technologies
On-line 2

19:00 **Welcome Reception**
Seeburg

22:00 **Fireworks "Kieler Woche"**
Seeburg

Monday, 27 June

08:20 **Opening Session**
Science Centre - Siemens Room
Chaired by: Prof. Marco Liserre and Prof. Liuchen Chang and Željko Jakopović

08:30 **Keynote Speech 1: Prof. Frank Osterwald, EKSH, Power Electronics – the Booster Vaccination for the Climate**
Science Centre - Siemens Room
Chaired by: Prof. Frede Blaabjerg and Prof. Liuchen Chang

09:30 **Keynote Speech 2: Prof. Rik W. De Doncker E.ON ERC & Research Campus FEN, RWTH Aachen University, Power Electronics – Key Enabling Technology to Realizing the Energy Transition**
Science Centre - Siemens Room
Chaired by: Prof. Frede Blaabjerg and Prof. Liuchen Chang

10:30 **Coffee Break**
Science Center - Foyer

11:00 **ST1 -**
Smart Transformers for Active Distribution Grids
Science Centre - Siemens Room
Chaired by: Prof. Rik De Doncker and Dr. Hrishikesan Vadakkedath Madhavan

11:00 **Topologies of Isolated Multiport Converters for DC Grid Applications: A Review**
» Mr. Hanwen Zhang, Dr. Yanbo Wang, Prof. Zhe Chen

11:20 **The Potential of Frequency-Based Power Control in Distribution Grids**
» Ms. Qiucen Tao, Ms. Johanna Geis-Schroer, Mr. Felix Wald, Ms. Maëva Courcelle, Dr. Marius Langwasser, Prof. Thomas Leibfried, Prof. Marco Liserre, Dr. Giovanni De Carne

11:40 **Multi-Terminal Smart Transformer for Green Data Centres**
» Mr. Dwijasish Das, Mr. Anandh N, Dr. Chandan Kumar

12:00 **Scenario-based Smart Transformer Implementation for Reactive Power Management in MV and LV Grid**
» Mr. Marc Philipp Lüdtke, Mr. Maximilian Rose, Ms. Imke Hebbeln, Dr. Marius Langwasser, Prof. Marco Liserre

11:00 **PV1 -**
Photovoltaic Systems
Science Center - Einstein Room
Chaired by: Prof. Tamas Kerekes and Dr. Hamzeh Beiranvand

11:00 **Adaptive Ramp-Rate Control of Hybrid Energy Storage System for PV Application**
» Mr. Xiangqiang Wu, Ms. Zhongting Tang, Prof. Tamas Kerekes

11:20 **Partial power processing DC/DC MPPT Converters in Solar PV applications: Overview of Architectures**
» Mr. YongDae Kwon, Dr. Thiwanka Wijekoon, Dr. Francisco D. Freijedo, Prof. Marco Liserre

11:40 **Flexible Power Control for Stand-alone Interlinking Converter in PV and Storage System Application**
» Ms. Zhongting Tang, Prof. Ariya Sangwongwanich, Prof. Frede Blaabjerg

12:00 **Model Predictive Control for An Improved Transformer-less Five-level PV Inverter Topology**
» Mr. Mohammad Ali Hosseinzadeh, Dr. Maryam Sarebanzadeh, Dr. Cristian Garcia, Prof. Ebrahim Babaei, Prof. Jose Rodríguez, Prof. Ralph Kennel

11:00 **ESS1 -**
Energy Storage Systems - part I
Science Center - Bosch Room
Chaired by: Prof. Remus Teodorescu and Prof. Abhijit Kulkarni

Continued from **Monday, 27 June**

11:00 **Wireless control of Smart Battery Systems**
» Ms. Renata de Sousa, Dr. Abhijit Kulkarni, Mr. Mikkel Hansen, Mr. Joachim Midtgaard, Prof. Remus Teodorescu

11:20 **Battery Lifetime Prediction and Degradation Reconstruction based on Probabilistic Convolutional Neural Network**
» Mr. Yunhong Che, Dr. Pallavi Bharadwaj, Dr. Xin Sui, Prof. Daniel-Ioan Stroe, Prof. Remus Teodorescu

11:40 **Experimental Characterization of Fuel Cell, Supercapacitor, and Their Passive Connection**
» Ms. QIAN XUN, Prof. Yujing Liu, Dr. Stefan Lundberg, Prof. Torbjörn Thiringer

12:00 **Optimal sizing of behind-the-meter BESS for providing stackable services**
» Ms. Yichao Zhang, Prof. Amjad Anvari-Moghaddam, Dr. Saeed Peyghami, Prof. Tomislav Dragičević, Ms. Yuan Li, Prof. Frede Blaabjerg

11:00 **MSA1 -**
Special Session: Modeling and stability of modern distribution grid with high penetration of power electronics interfaces - part I
Science Center - Fraunhofer Room
Chaired by: Prof. Sibylle Dieckerhoff and Mr. Liang Chen

11:00 **Risk Evaluation of Hybrid Microgrids Considering DC-Link Voltage Stability**
» Mr. Ali Azizi, Dr. Saeed Peyghami, Prof. Huai Wang, Prof. Frede Blaabjerg

11:20 **Blackbox Small-Signal Modeling of Grid-Connected Inverters under Unbalanced Conditions**
» Dr. Airan Frances, Prof. Dionisio Ramirez, Prof. Javier Uceda

11:40 **PQ Decoupling on Grid-Forming Converter Connected to a Distribution Network**
» Dr. Yorgo Laba, Dr. Antoine Bruyère, Dr. Frédéric Colas, Prof. Xavier Guillaud

12:00 **Extended synchronverter model for PHIL simulation in grid-connected and islanded operation**
» Dr. Csaba Farkas, Mr. Akos Arnold, Dr. Dániel Divényi, Mr. Bence Sütő, Dr. David Raisz

12:30 **PS1 -**
Poster Session - 1
Science Center - Foyer
Chaired by: Prof. Angel Navarro-Rodriguez and Prof. Zoubir Khatir

Single-Phase Common-Ground-Type Buck-Boost Transformerless Photovoltaic Inverter
» Mr. Wei Chung Chin, Dr. Freddy Tan

Prediction of Direct Power Control Strategy Based on Dual Vector Vienna Rectifier Model
» Mr. yan li, Mr. Caixue Chen, Ms. Huixiang Lv, Mr. Xutao Yang

Islanding mode operation of a PV supplied network in the presence of G59 protection
» Dr. Osama Saadeh, Mr. Wael Al-Hanaineh, Dr. Zakariya Dalala

Real-Time control of a Modular Multilevel Converter via MATLAB/Simulink and EtherCAT fieldbus
» Mr. Jan-Henrik Fey, Prof. Frank Hinrichsen, Prof. Regine Mallwitz

Novel compensation scheme for low dynamic converters in droop-controlled DC grids
» Mr. Johannes Gehring, Mr. Kilian Gosses, Mr. Raffael Schwanninger, Mr. Bernd Zeilmann, Mr. Bernd Wunder

Continued from **Monday, 27 June**

Enhancing Transient Stability of Grid Forming Converter In Weak Grid Under Low Voltage Ride Through Using Neural Network Aided Deloading Strategy
» Mr. Liang Chen, Mr. Subham Sahoo, Prof. Frede Blaabjerg

Impact of Digital Control Delay on Stability of Grid-Following Converters
» Ms. Xian Gao, Prof. Dao Zhou, Prof. Amjad Anvari-Moghaddam, Prof. Frede Blaabjerg

Isolated and Non-Isolated Multilevel Switching Cells with Linear Component and Stress Scaling
» Mr. Matthew Jahnes, Prof. Matthias Preindl

Photovoltaic Maximum Power Point Tracker for a Multiple-Input SEPIC Under Partial Shading Condition
» Mr. ABDULMANNAN AJABNOOR, Dr. Alexis Kwasinski

An Interleaved High Gain DC-DC Converter with Direct Power Flow Path
» Dr. Ahmed Allehyani

Inverter Integration Strategy for Traction Drives with Highest Power Densitiy based on SiC
» Prof. Schuemann Ulf, Mr. Jasper Schnack, Mr. Jan Philipp Gördes

Second Life Battery Energy Storage System: Modular Interface and Control
» Dr. Zakariya Dalala, Dr. Osama Saadeh, Dr. Zaka Ullah Zahid

A New Single Stage AC-DC High Step-Down Bifolding Converter with Synchronous Rectification and 2nd Harmonic Mitigation for Onboard eV Chargers
» Prof. Vishal Verma, Ms. BHAVYA BANSAL

Multimode-Multilevel Bidirectional Converter for Target Battery Equalization in a Tandem Connected Battery Units
» Prof. Vishal Verma, Ms. Shreepooja Singh

Impact of Reactive Current Injection Modes on Transient Stability of Grid-Following VSCs During Fault Ride-Through
» Mr. Xinshuo Wang, Mr. Heng Wu, Prof. Xiongfei Wang

Voltage Dip Induced Frequency Dips for Power Systems with High Shares of Wind Energy
» Dr. Xianxian Zhao, Dr. Damian Flynn

Utilization of the impedance-based stability criterion for stability assessment of PHiL interface algorithms
» Mr. Fisnik Loku, Mr. Lars Osterkamp, Mr. Patrick Düllmann, Mr. Christopher Klein, Mr. Michael Maimer, Mr. Thomas Bergwinkl, Mr. Martin Kufner, Mrs. Marija Stevic, Mr. Amit Kumar K.S., Dr. Ravinder Venugopal

12:30 **Lunch Break**
Science Center - Foyer

13:30 **Invited Presentation: Prof. Sibylle Dieckerhoff, TU Berlin, Germany, DFG Priority Program "Energy Efficient Power Electronics" – Exploring new GaN-based Material Systems, Devices and Converters**
Science Centre - Siemens Room
Chaired by: Prof. Marco Liserre

14:30 **MG1 -**
Power Converters for Microgrids control and communication
Science Centre - Siemens Room
Chaired by: Dr. Andrii Chub and Prof. Peter A. Hoeher

14:30 **Networking Aspects based on the Talkative Power Concept for DC Microgrid Systems**
» Prof. Peter A. Hoeher, Mr. Max Placzek, Mr. Maurice Hott, Prof. Marco Liserre

Continued from **Monday, 27 June**

14:50 **Hardware Realization of Participants in an Energy Packet-based Power Grid**
» Mr. Dominik Schulz, Mr. Klemens Schneider, Mr. Marcel Weßbecher, Prof. Veit Hagenmeyer, Prof. Martina Zitterbart, Prof. Marc Hiller

15:10 **A Transient Component-Based Technique for Fault Detection in Distributed Generation Systems**
» Dr. Navid Bayati, Dr. Mehdi Savaghebi

14:30 **WT1 -**
Special Session: Wind farm – grid interactions: exploration and development - part I
Science Center - Einstein Room
Chaired by: Dr. Saeed Peyghami and Prof. Xavier Guillaud

14:30 **Black Start and Islanding Operation of Wind Turbines with Auxiliary Power Converters and Energy Storage Systems**
» Mr. FLORIAN REDMANN, Mr. ANTONIO MIELACH, Prof. Bernd Orlik, Dr. Holger Raffel

14:50 **Converter Control Impacts on Efficacy of Protection Relays in HVDC-Connected Offshore Wind Farms**
» Mr. Guoqing Gao, Mr. Heng Wu, Prof. Xiongfei Wang

15:10 **Enhancing Synchronization Stability of a VSC-Grid System using IDA-PBC Controller**
» Ms. Sai Sowmya Nagam, Prof. Bikash Pal

14:30 **LIB1 -**
Lithium-Ion Batteries
Science Center - Bosch Room
Chaired by: Prof. Rainer Adelung and Ms. QIAN XUN

14:30 **Smart Cells - Battery monitoring via internal sensors**
» Dr. Reinhard Mörtel, Mr. Julian Franz, Mr. Simon Rindelaub, Mr. Charles Wijayawardhana, Dr. Eivind Langnes, Dr. Alexandra Burger, Dr. Andreas Würsig, Prof. Axel Müller-Groeling

14:50 **Optical Monitoring of Second-Life Batteries Enhanced by Machine Learning**
» Mr. Lars Eike Kruse, Mr. Jendrik Schill, Prof. Olaf Landsiedel, Prof. Stephan Pachnicke

15:10 **Q-learning Trained Virtual Inertial Control Strategy to Improve Battery Life in Microgrids Powered by Wind Turbines**
» Dr. Rui Hu, Dr. Alexis Kwasinski

14:30 **MSA2 -**
Special Session: Modeling and stability of modern distribution grid with high penetration of power electronics interfaces - part II
Science Center - Fraunhofer Room
Chaired by: Dr. Hrishikesan Vadakkedath Madhavan and Dr. David Raisz

14:30 **Comparison and specification-based tuning of two grid-forming inverter controllers providing inertia**
» Mr. Bence Sütő, Dr. Dániel Divényi, Dr. David Raisz

14:50 **Concept and Control Strategy for the Grid Friendly Use of Medium Voltage Direct Current Links in German Distribution Grids**
» Dr. Nassipkul Dyussembekova, Prof. Reiner Schütt, Mr. Thorben Lindegaard, Mr. Sven Eggert, Ms. Imke Hebbeln, Mr. Maximilian Rose, Prof. Ingmar Leiße

15:10 **Improved Passivity of Grid-Connected Impedance using Asymmetric Dual-Edge Modulators**
» Mr. Hossein Abedini, Mr. Giovanni Bonanno, Ms. Ruzica Cvetanovic, Mr. Andrea Comacchio, Mr. Davide Biadene, Prof. Paolo Mattavelli

15:30 **Coffee break**
Science Center - Foyer

Continued from **Monday, 27 June**

16:00 **HIL1 -**
Special Session: Real Time Systems and Hardware In the Loop testing of power electronics - Part I
Science Centre - Siemens Room
Chaired by: Dr. Sante Pugliese and Dr. David Raisz

16:00 **Power Hardware-in-the-Loop Testbench for Grid-Following and Grid-Forming Inverter Prototyping**
» Mr. Peter Teske, Mr. Malte Eggers, Mr. Huoming Yang, Prof. Sibylle Dieckerhoff

16:20 **Improved Accuracy of the Power Hardware-in-the-Loop modeling using Multirate Discrete Domain**
» Mr. Fargah Ashrafidehkordi, Dr. Giovanni De Carne

16:40 **Challenges in Real-Time Simulation of Smart Transformers**
» Mrs. Marija Stevic, Mr. Joscha Schaumburg, Mr. Tobias Schlaberg, Dr. Luc-Andre Gregoire, Dr. Marius Langwasser, Dr. Ravinder Venugopal, Prof. Marco Liserre

17:00 **FPGA-based Real-Time Simulation for LLC Resonant Converter Prototyping**
» Mr. sumantra Bhattacharya, Dr. Luc-André Grégoire, Dr. Josef Kallo, Mrs. Marija Stevic, Mr. Mayank Garg, Dr. Caroline Willich

16:00 **WT2 -**
Special Session: Wind farm – grid interactions: exploration and development - part II
Science Center - Einstein Room
Chaired by: Prof. Reiner Schütt and Dr. Hamzeh Beiranvand

16:00 **Small-Signal Stability Analysis of Grid-Connected Converter under Different Grid Strength Cases**
» Mr. Dimitrios Dimitropoulos, Prof. Xiongfei Wang, Prof. Frede Blaabjerg

16:20 **Reactive Power Support from Converter Connected Renewables in Active Distribution Network**
» Ms. Aeishwarya Baviskar, Dr. Anca D. Hansen, Dr. Kaushik Das

16:40 **Control of HVDC-Connected PMSG-Based Wind Turbines for Power System Oscillation Damping**
» Mr. zuan zhang, Prof. Xiaowei Zhao

17:00 **The region of attraction of a grid with virtual synchronous machines employing virtual friction**
» Mr. Florian Reissner, Prof. George Weiss

16:00 **ESS2 -**
Energy Storage Systems - part II
Science Center - Bosch Room
Chaired by: Prof. Dmitri Vinnikov and Dr. Pallavi Bharadwaj

16:00 **Internal Resistance Estimation of Li-ion Batteries using Wavelet Analysis**
» Ms. Roberta Di Fonso, Prof. Remus Teodorescu, Prof. Carlo Cecati, Dr. Pallavi Bharadwaj

16:20 **A Review of Medium-Voltage Front-End Converters for Grid-connected Battery Energy Storage Systems**
» Mr. Ahmed Rahouma, Prof. German Oggier, Prof. Juan Balda

16:40 **Virtual Energy Storage Operation for Smart Photovoltaic Inverters**
» Prof. Yongheng Yang, Mr. Yi Xiao, Dr. Qiao Peng, Prof. Frede Blaabjerg, Dr. Yingzi Wu, Dr. Xiaotong Ji

17:00 **Simulation of an Energy Management Test Bench for Hybrid Storage System Extensions to a Wind Energy Plant**
» Mr. ANTONIO MIELACH, Mr. FLORIAN REDMANN, Prof. Bernd Orlik, Dr. Holger Raffel

Continued from **Monday, 27 June**

16:00 **MSA3 -**
Special Session: Modeling and stability of modern distribution grid with high penetration of power electronics interfaces - part III
Science Center - Fraunhofer Room
Chaired by: Prof. Dao Zhou and Mr. Shan He

16:00 **Enhanced Real-Time-Update Current Control of Grid-Connected VSCs Using Multi-Sampling**
» Mr. Shan He, Prof. Dao Zhou, Prof. Xiongfei Wang, Prof. Frede Blaabjerg

16:20 **Operating Point Dependency and Adaptation of Dynamic Active Distribution Network Equivalents**
» Mr. Jakob Ungerland, Mr. Rachit Bhadani, Mr. Wolfgang Biener, Prof. Hendrik Lens

16:40 **Reliability Modelling of Power Electronics with Mission Profile Forecasting for Long-Term Planning**
» Mrs. Monika Sandelic, Prof. Ariya Sangwongwanich, Dr. Saeed Peyghami, Prof. Frede Blaabjerg

17:00 **Grid-Tied Multi-Port PV Battery System with ANFIS based Model Predictive Control**
» Ms. Sumana Ghosh, Dr. Qun Zhou Sun, Dr. Issa Batarseh

Tuesday, 28 June

08:30 **Keynote Speech: Prof. Remus Teodorescu, Aalborg University, Denmark, Smart Battery, a new technology**
Science Centre - Siemens Room
Chaired by: Željko Jakopović and Prof. Pavol Bauer

09:30 **Keynote Speech: Prof. Stephan Rupp, MR Business Development Power Electronics, Germany, Running Power Grids by renewable Energy Sources**
Science Centre - Siemens Room
Chaired by: Željko Jakopović and Prof. Pavol Bauer

10:30 **Coffee break**
Science Center - Foyer

11:00 **HIL3 -**
Special Session: Real Time Systems and Hardware In the Loop testing of power electronics - Part II
Science Centre - Siemens Room
Chaired by: Mr. Junjie Zhang and Bernhard Wille-Haussmann

11:00 **Grid-in-the-Loop Environment for Stability Investigation of Converter-Dominated Distribution Grids**
» Mr. Moiz Ahmed, Mr. Henning Schlachter, Ms. Vanessa Beutel, Mr. Thomas Esch, Dr. Stefan Geißendörfer, Dr. Karsten von Maydell

11:20 **High Performance Power Hardware-in-the-Loop Testing of Traction Inverters at High Voltage Level**
» Mr. Manuel Fischer, Mr. Philipp Kemper, Mr. Johannes Herbold

11:40 **Real-Time Simulation of an Electrolyzer with a Diode Rectifier and a Three-Phase Interleaved Buck Converter**
» Mr. Han Zhang, Mr. Yifei Lu, Mr. Junjie Zhang, Prof. Andrea Benigni

11:00 **WBD1 -**
Wide Band Gap Devices for distributed power converters
Science Center - Einstein Room
Chaired by: Frank Osterwald and Prof. Zoubir Khatir

11:00 **Comparative Analysis of Power Semiconductor Thermal Stress in DC and AC power cycling**
» Dr. Xinming Yu, Prof. Dao Zhou, Prof. Francesco Iannuzzo

Continued from **Tuesday, 28 June**

11:20 **Four Level Voltage Active Gate Driver for Loss and Slope Control in SiC MOSFETs**
» Mr. HALVOR BRATVOLD EKREN, Mr. Daniel A. Philipps, Mr. Gard Lyng Rødal, Prof. Dimosthenis Peftitsis

11:40 **Characterizing SiC-based Drive Inverter losses using the method of Reduced Continuous Operation**
» Mr. Dirk Fischer, Prof. Regine Mallwitz

11:00 **EV1 -**
Electric Vehicles: battery charging and managment
Science Center - Bosch Room
Chaired by: Prof. Sibylle Dieckerhoff and Dr. Xin Sui

11:00 **A Multi-Port Converter System for Grid Tied Electric Vehicle Charging Station**
» Mr. Somnath Meikap, Mr. Dwijasish Das, Dr. Chandan Kumar, Prof. Giampaolo Buticchi

11:20 **OCSS: An application to simulate multiple charging stations which uses an Open charge point protocol for communication**
» Mr. Sandeep Yadav Mattepu, Dr. Marc Richter, Dr. Stephan Balischewski

11:40 **Short term charging infrastructure expansion potential with centralised control - modelling, outcomes and issues**
» Mr. Jens Götze, Mr. Peer-Jorge Schmidt, Dr. Christoph Wenge, Dr. Marc Richter, Dr. Pio Lombardi, Prof. Przemyslaw Komarnicki

11:00 **HV1 -**
HVDC
Science Center - Fraunhofer Room
Chaired by: Prof. Reiner Schütt and Dr. Marius Langwasser

11:00 **An analysis of combining dc circuit breaker and hybrid MMC with reduced number of FBSM for HVdc system protection**
» Mr. Joao Victor Farias, Mr. Luis Juarez Camurca, Dr. Marius Langwasser, Prof. Marco Liserre

11:20 **A Pilot Protection Scheme for HVDC Transmission Lines Based on Simultaneous Existence of Forward and Backward Voltage Travelling Waves**
» Dr. Farzad Dehghan Marvasti, Dr. Ahmad Mirzaei, Dr. Mehdi Savaghebi, Dr. Mohammad Rasol Jannesar

11:40 **Virtual-Impedance-Based Current-Limitation of Grid-Forming Converters for Balanced and Unbalanced Voltage Sags**
» Mr. Malte Eggers, Mr. Peter Teske, Prof. Sibylle Dieckerhoff

12:30 **PS2 -**
Poster Session - 2
Science Center - Foyer
Chaired by: Prof. Matthias Preindl and Prof. Frank Hinrichsen

System-Level Design for Reliability of Microgrids Considering Power Electronic Failures
» Mr. Amirali Davoodi, Dr. Saeed Peyghami, Prof. Yongheng Yang, Prof. Tomislav Dragičević, Prof. Frede Blaabjerg

Multi-frequency Power Transfer by Single-Phase Grid-Connected Converters
» Mr. Hamed Athari, Dr. David Raisz

A Technical and Economic Feasibility Study of Campus Microgrid Implementation
» Mr. Shah Mohazzem Hossain, Mr. Sayan Koley, Mr. Aaron Winter, Dr. Johan Enslin

Review of Coding Theory and Applications of Switching Ripple-based Talkative Power Converters
» Mr. Yang Leng, Prof. Rongwu Zhu, Dr. Hamzeh Beiranvand, Prof. Marco Liserre, Prof. Peter A. Hoeher

Continued from **Tuesday, 28 June**

A Switched-Diode Topology for Cascaded Multilevel Converters with Reduced Number of Switches

» Dr. Maryam Sarebanzadeh, Mr. Mohammad Ali Hosseinzadeh, Dr. Cristian Garcia, Prof. Ebrahim Babaei, Prof. Jose Rodríguez, Prof. Ralph Kennel

A Model Predictive Current Control for a Three-Phase Modular Matrix Converter

» Mr. Mohammad Ali Hosseinzadeh, Dr. Maryam Sarebanzadeh, Prof. Ebrahim Babaei, Prof. Patrick Wheeler

Comparison of High-Frequency Ferrite and Nanocrystalline Core Losses Using Identical Geometries

» Mr. Roderick Gomez, Mr. David Porras, Dr. German Oggier, Prof. Juan Balda, Dr. Yue Zhao

Etching Process to Reduce Interlamination Short Circuits and Core Loss Comparison for Tape-Wound Cut Cores

» Mr. Roderick Gomez, Mr. Shamar Christian, Dr. German Oggier, Dr. Roberto Fantino, Prof. Juan Balda, Dr. Yue Zhao

Optimization Design Algorithm for Dual-Active Bridge Converters Using Parallel Power Modules

» Mr. David Porras, Mr. Roderick Gomez, Dr. Roberto Fantino, Prof. Juan Balda

Reinforcement Learning Based Modulation for Balancing Capacitor Voltage and Thermal Stress to Enhance Current Capability of MMCs

» Dr. Jun-Hyung Jung, Mr. Ehsan Hosseini, Prof. Marco Liserre, Prof. Luis Fernandez-Ramirez

FemtoCore enabled quasi-distributed Control for Modular Multilevel Converters

» Dr. Filippo Savi, Prof. Giampaolo Buticchi, Prof. Davide Barater, Prof. Giovanni Franceschini

Optimal sizing for a Battery-Supercapacitor Hybrid Energy Storage System

» Prof. Alessandro Busacca, Dr. Vincenzo Castiglia, Dr. Nicola Campagna, Prof. Rosario Miceli

Comprehensive Characterizations and Analysis of Variable Inductor

» Mr. Yuqi Wei, Mr. Thiago Pereira, Dr. Andrea Stratta, Prof. Marco Liserre, Prof. H. Alan Mantooth

12:30 **Lunch break**

Science Center - Foyer

14:00 **Invited Presentation: Prof. Pavol Bauer, Delft University of Technology, Netherlands,DC systems and Storage integration: Two key technologies for energy transition**

Science Centre - Siemens Room

14:30 **BR1 -**

Special Section: Power Electronics for Green Energy Transition in the Baltic Region - Part I

Science Centre - Siemens Room

Chaired by: Prof. Schuemann Ulf and Dr. Andrii Chub

14:30 **Zero-Redundancy Fault-Tolerant Resonant Dual Active Bridge Converter for More Electric Aircrafts**

» Dr. Andrii Chub, Prof. Giampaolo Buticchi, Mr. Vadim Sidorov, Prof. Dmitri Vinnikov

14:50 **Overview of Bidirectional Unfolding Converters for Battery Energy Storage Systems**

» Mr. Alexander Bubovich, Mr. Maksims Vorobjovs, Prof. Ilya Galkin, Dr. Andrei Blinov, Mr. Andreas Giannakis

15:10 **DC Grid Interface Converter based on Three-Phase Isolated Matrix Topology with Phase-Shift Modulation**

» Mr. Pietro Emiliani, Dr. Andrei Blinov, Dr. Andrii Chub, Dr. Giovanni De Carne, Prof. Dmitri Vinnikov

Continued from **Tuesday, 28 June**

14:30 **PCT1 -**
Power Converter Testing
Science Center - Bosch Room
Chaired by: Mr. Reza Barzegarkhoo and Prof. Xavier Guillaud

14:30 **Test Platform for Comparative Evaluation of 690 V – 4160 V Power Electronic Converters**
» Mr. Jonas Jacobsen, Mr. Benjamin Kjærsgaard, Dr. Dipen Narendra Dalal, Dr. Hongbo Zhao, Mr. Zhixing Yan, Dr. Michael Møller Bech, Prof. Stig Munk Nielsen, Dr. Bjørn Rannestad

14:50 **Parallel Simulation of Power Systems with High Penetration of Distributed Generation Using GPUs and OpenCL**
» Mr. Junjie Zhang, Mr. Marcel Mittenbühler, Dr. Lukas Razik, Prof. Andrea Benigni

15:10 **Comparison of Four-Switch Buck-Boost and Dual Active Bridge Converter for DC Microgrid Applications**
» Mr. Ömer Ekin, Mr. Gabriele Arena, Dr. Simon Waczowicz, Prof. Veit Hagenmeyer, Dr. Giovanni De Carne

14:30 **DCDC1 -**
DC/DC Technologies for DC Grids - Part I
Science Center - Fraunhofer Room
Chaired by: Saeed Peyghami and Prof. Tommaso Caldognetto

14:30 **Switching Instances and Permutations for State-Space Modeling of the Dual Active Half Bridge Converter**
» Mr. Youssef Fahmy, Prof. Matthias Preindl

14:50 **An Improved Model Predictive Control for DC-DC Boost Converter**
» Ms. Yuan Li, Prof. Tomislav Dragičević, Dr. Subham Sahoo, Ms. Yichao Zhang, Prof. Frede Blaabjerg

15:10 **Analysis and Design of a Partial-Power Post-Regulator Based DC/DC Converter for Automotive Applications**
» Mr. Nicola Zanatta, Prof. Tommaso Caldognetto, Mr. Davide Biadene, Prof. Giorgio Spiazzi, Prof. Paolo Mattavelli

15:30 **Industrial Super-session: Dr. Charles Leduc, OpSens Solutions - Improving power electronics reliability with fiber optic sensors**
Science Centre - Siemens Room
Chaired by: Prof. Marco Liserre

16:30 **Coffee break**
Science Center - Foyer

17:00 **SI1 -**
Special Section: Power Electronics for Green Energy Transition in the Baltic Region - Part II
Science Centre - Siemens Room
Chaired by: Dr. Chandan Kumar and Mr. Liang Chen

17:00 **Overview of Single-Stage Isolated AC-DC Topologies for Interfacing DC and AC Grids**
» Dr. Edivan Laercio Carvalho, Dr. Andrei Blinov, Dr. Andrii Chub, Prof. Dmitri Vinnikov

17:20 **Step-up Current-Source Partial Power Converter for PV systems**
» Dr. Omar Mohamed Abdelrahim Abdelghafour, Dr. Andrii Chub, Dr. Andrei Blinov, Prof. Dmitri Vinnikov, Mr. Naser Hassanpour

17:40 **A New Master-Slave based Centralized Control Method for an AC Microgrid with Multiple Distributed energy resources**
» Ms. Saba Habibnia, Dr. M.S Mahdavi, Prof. Gevork Gharehpetian, Dr. Roya Ahmadiahangar, Prof. Argo Rosin, Prof. Dmitri Vinnikov

18:00 **Impedance Measurement of a Medium Voltage Grid by a Mobile Measuring System with the Capability to Improve Power Quality**
» Mr. Viet Hung Nguyen, Prof. Hans-Jürgen Hinrichs, Dr. Jun-Hyung Jung, Prof. Marco Liserre

Continued from **Tuesday, 28 June**

17:00 **SC2 -**
Special Section: Optical measurement to improve the reliability of power electronics in distributed generation systems
Science Center - Einstein Room
Chaired by: Prof. Frede Blaabjerg and Prof. Ariya Sangwongwanich

17:00 **IMPROVING POWER ELECTRONICS RELIABILITY WITH FIBER OPTIC SENSORS**
» Mr. Charles Leduc, Mr. Gaetan Duplain, Mr. Jean-Raphaël St-Laurent

17:20 **Measuring Temperature Swing with Optical Fibers during Power Cycling of Power Components**
» Mr. Kaichen Zhang, Prof. Francesco Iannuzzo

17:40 **Optical Sensing Applied to Thermal Observers for Enhanced Reliability of Power Modules**
» Mr. Francisco de los Santos Arana, Dr. Yoann Pascal, Mr. Johannes Kuprat, Dr. Marius Langwasser, Mr. Karthik Debbadi, Prof. Marco Liserre

18:00 **Analytical Model for Real-Time Junction Temperature Estimation of Multi-chip Power Module in PWM operation**
» Prof. Zoubir Khatir, Dr. Ali Ibrahim

17:00 **HH1 -**
Harmonics and their mitigation in modern electric grids
Science Center - Bosch Room
Chaired by: Dr. Sante Pugliese and Prof. Tommaso Caldognetto

17:00 **A Detailed Simulation Model of Residential LV Networks for Harmonic Resonance Studies**
» Mr. Shrinath Kannan, Dr. Jan Meyer, Prof. Peter Schegner

17:20 **Circulating Harmonic Current Reduction in Distorted Voltage Conditions using GPS-based Synchronization**
» Mr. Lucas Savoi Araujo, Prof. Tommaso Caldognetto, Prof. Danilo Brandao, Prof. Paolo Mattavelli

17:40 **Harmonic Resonance Mitigation and Impedance Stability Improvement of Converter-Based Resources in Active Distribution Grids**
» Mr. Ramy Ali, Dr. Terence O' Donnell

18:00 **Harmonic Modeling Methods for Power Electronic Converters: Case study and Comparison**
» Mr. Qilin Peng, Prof. Giampaolo Buticchi, Dr. Nadia M. L. Tan, Dr. Sandro Gunter, Mr. Jiajun Yang, Prof. Patrick Wheeler

17:00 **MMC1 -**
Multilevel Converters for renewable energy integration with low-effects on the electric grid
Science Center - Fraunhofer Room
Chaired by: Prof. Remus Teodorescu and Dr. Pallavi Bharadwaj

17:00 **Control Strategy of Multi-level Converters for Soft Open Point Applications**
» Mr. Chen PoHan, Prof. Kai Sun, Dr. Xiaochao Hou

17:20 **Negative-Sequence Current Range in Low-Capacitance Cascaded H-Bridge STATCOMs with Peak Arm Current Limitation**
» Mr. EZEQUIEL RODRIGUEZ RAMOS, Prof. Ramon Leyva Grasa, Dr. Ghias Farivar, Dr. Christopher Townsend, Prof. Josep Pou

17:40 **Active-Neutral-Point-Clamped Five-Level Inverter With Single-Stage Dynamic Voltage Boosting Capability**
» Mr. Reza Barzegarkhoo, Mr. Majid Farhangi, Dr. Sze Sing Lee, Dr. Ricardo Aguilera, Dr. Yam Siwakoti, Prof. Marco Liserre

18:00 **A Family of Fully Balanced and Vertically Stacked Multilevel Power Converters with Linear Scaling**
» Mr. Matthew Jahnes, Prof. Matthias Preindl

Continued from **Tuesday, 28 June**

19:00 **Social Dinner**
Lille Brauerei

Wednesday, 29 June

08:30 **Keynote Speech: Prof. Jinjun Liu, Xi'an Jiaotong University, China, Advanced Coordinative Control for Distributed Energy Source Converters and Microgrid**
Science Centre - Siemens Room
Chaired by: Prof. Marc Hiller

09:30 **Keynote Speech: Dr. Don Tan, E2 Systems, USA, Autonomous Substations and 100% Renewable Integration**
Science Centre - Siemens Room
Chaired by: Prof. Marc Hiller

10:30 **Coffee break**
Science Center - Foyer

11:00 **Industrial Super Session, Dr. Wille-Haussmann, Prof. Gonzales - Improved modelling concepts for sustainable grid**
Science Centre - Siemens Room
Chaired by: Ms. Regina Roos

11:00 **HG1 -**
Hybrid grids: design and services
Science Center - Bosch Room
Chaired by: Dr. Marius Langwasser and Dr. Hamzeh Beiranvand

11:00 **Efficiency Optimization via Mission Profile-Based Design of a Hybrid Grids-Feeding Smart Transformer**
» Mr. Joscha Schaumburg, Mr. Johannes Kuprat, Dr. Marius Langwasser, Prof. Marco Liserre

11:20 **Adaptive Virtual Synchronous Machine based on MPC Applied to a Four-Leg Three-Phase VSC for Unbalanced Current Compensation**
» Ms. Ana Marin, Dr. Andres Escobar-Mejía, Dr. Walter Gil-González

11:40 **Performance Evaluation of Hybrid Bypass Protection of Hybrid Smart Transformers in a Substation Environment**
» Mr. Moazzam Nazir, Dr. Johan Enslin, Mr. Klaehn Burkes

12:00 **Grid support services from a mix of grid forming and grid feeding sources in distribution networks: aggregate capability assessment from heterogeneous sources and controller topologies**
» Mr. Phurailatpam Chitaranjan Sharma, Dr. Damian Flynn

11:00 **CGC1 -**
Control of grid-connected converters
Science Center - Fraunhofer Room
Chaired by: Prof. Tamas Kerekes and Mr. Shan He

11:00 **Experimental Analysis of K-Best Sphere Decoding Algorithm for LPH-FCS-MPC**
» Mr. EDUARDO ZAFRA, Dr. Sergio Vázquez, Dr. Abraham Márquez, Prof. Leopoldo García Franquelo, Dr. José I. León, Ms. Emilia Pérez Martín

11:20 **A Passivity-Based High-Bandwidth Voltage Control for Grid-Forming Inverters**
» Mr. Alvaro Morales-Munoz, Dr. Francisco D. Freijedo, Dr. Sante Pugliese, Prof. Marco Liserre

11:40 **Distributed Event-Triggered Control Strategy Based on Adaptive V-I Droop Characteristic for Accurate Load Sharing in AC Microgrids**
» Dr. Mohammad Sadegh Golsorkhi, Mr. Masoud Hajian, Dr. Mehdi Savaghebi

Continued from **Wednesday, 29 June**

12:00 **Assessment of Anti-Islanding Schemes on a Distribution System with High DER Penetration and Dynamic VAR Compensators**
» Mr. KEITH DSOUZA, Mr. Valliappan Muthukaruppan, Mr. Hui Yu, Dr. Mesut Baran, Dr. Srdjan Lukic, Dr. Aleksandar Vukojevic

11:00 **MC1 -**
Multilvel Converters
On-line 1
Chaired by: Prof. Giampaolo Buticchi

11:00 **A 5-Level Mid-Point Clamped HERIC Inverter**
» Mr. Yaroslav Syasegov, Mr. Reza Barzegarkhoo, Dr. Saad Hasan, Dr. Li Li, Dr. Yam Siwakoti

11:20 **A New Isolated Railway Power Supply System Based on MMC and Scott Transformers**
» Ms. YAHUI ZHANG, Prof. Jinjun Liu, Prof. Sixing Du

11:40 **A Proposed Neutral-Point Voltage Balancing Method for Three-Phase Three-Level T-type Inverter under Non-Unity Power Factor**
» Mr. Sheng Ren, Prof. Min Chen, Mr. Haoqing Cai, Dr. Changsheng Hu

11:00 **CD1 -**
Converter modeling, design and control - 1
On-line 2
Chaired by: Mr. Yuqi Wei

11:00 **A complete optimal air gapped PFC boost inductor design for power converter applications**
» Dr. wai keung mo, Dr. Kasper Paasch, Prof. Thomas Ebel

11:20 **A New Control Scheme for a Single Phase Modular Multilevel Converter Connected to the Grid Under Unbalanced Arm Power Conditions**
» Mr. Anthony ABDAYEM, Dr. Jean Sawma, Prof. Flavia Khatounian, Prof. Eric Monmasson, Prof. Ragi Ghosn

11:40 **Duality Principle Enabled Systematic Analysis and Operation Design of New Multiport Converters for Renewable Generation Integration**
» Mr. Pasan Gunawardena, Dr. Yuzhuo Li, Prof. Yunwei Li

12:00 **Converter Arm Energy Model and Submodule Capacitor Sizing for the Asymmetric Alternate Arm Converter Topology**
» Mr. DEREJE WOLDEGIORGIS, Prof. H. Alan Mantooth

11:00 **WBD2 -**
Wide Bandgap Devices
On-line 3
Chaired by: Levy Ferreira Costa

11:00 **Research on Parasitic Inductance Optimization of GaN Paralleled Cascode Power Module**
» Dr. Ruijie Song, Prof. Fang Zhuo, Prof. Feng Wang, Dr. Kefan Yu

11:20 **Study on the Effect of External Drain-Source Capacitance on the Turn-On Switching Characteristics of SiC MOSFET Using an Analytical Model**
» Dr. Zaojun Ma, Prof. Yunqing Pei, Prof. Laili Wang, Dr. Zhiyuan Qi, Dr. Qingshou Yang, Dr. Guanghui Zeng

11:40 **An application analysis of wide-bandgap device for medium voltage wind energy conversion system**
» Mr. YUXUAN WU, Mr. Kushan Choksi, Mr. Mustafeez ul Hassan, Dr. Fang Luo

11:00 **TM1 -**
Thermal management in power converters
On-line 4
Chaired by: Dr. Jun-Hyung Jung

11:00 **Fast Electrothermal Estimation of Power Semiconductor Devices Based on Complex Mission Profile**
» Mr. Yuhao Qi, Mr. Po Xu, Mr. Yiming Wang, Mr. Jiaqi Cao, Prof. Ke Ma, Ms. Mengqi Xu

Continued from **Wednesday, 29 June**

11:20 **Thermal Balancing Strategy Based on Voltage Compensation Method for Capacitors in Modular Multilevel Converter**
» Mr. Wenjie Jiang, Prof. Ke Ma, Prof. Xu Cai, Mr. Xikai Xin, Mr. Gongzheng Cao, Mr. Yalin Zhang

11:40 **Inductor Encapsulation-Based Thermal Management Enabling Increased Power Density**
» Mr. Shamar Christian, Dr. Roberto Fantino, Mr. Roderick Gomez, Prof. Juan Balda

12:00 **Real-Time Hardware-in-the-Loop Testbed to Evaluate FLISR Implemented with OpenFMB**
» Mr. Neil Shepard, Dr. Aditya Sundararajan, Mr. Max Ferrari, Mr. Ben Ollis

11:00 **GS1 -**
Grid Synchronization
On-line Einstein
Chaired by: Prof. Zhixiang Zou

11:00 **Application of The Virtual Torque Coefficient in Stability Mechanism Analysis of Grid- Forming VSC**
» Mr. NI Liu, Prof. Hong Wang, Ms. Haoxi Xiang, Mr. HeXi Shi, Ms. Yingying Yuan, Prof. Zhe Chen

11:20 **A New Synchronization Method for WPT System**
» Mr. Min Wu, Mr. Hongchang Cui, Mr. Chenxu Zhao, Ms. Lei Zhu, Prof. Xu Yang, Prof. Wenjie Chen, Prof. Laili Wang

11:40 **Optimized Design of the PLL with Reconstructed Singular Return Ratio Matrix for Grid-Connected Inverter**
» Mr. Yuhang Chen, Prof. Xinbo Ruan, Mr. Zhiheng Lin, Mr. Yiran Yan, Mr. Liguo Wu

12:00 **Understanding the Interactions in Systems with Multiple Types of Grid-Forming Inverters**
» Mr. Pranjal M. Gajare, Mr. Mohammadreza Miranbeigi, Dr. Joseph Benzaquen, Dr. Prasad Kandula, Prof. Deepak Divan

12:30 **Lunch break**
Science Center - Foyer

13:30 **AGC1 -**
Active Grid Control - 1
Science Centre - Siemens Room
Chaired by: Dr. Chandan Kumar and Dr. Sante Pugliese

13:30 **Potential and Impacts of Smart Transformer in Green Harbours**
» Dr. Hrishikesan Vadakkedath Madhavan, Mr. Xiang Gao, Dr. Marius Langwasser, Prof. Marco Liserre

13:50 **Stabilized Control Strategy of ST-Fed Grid Based on Reinforcement Learning for More Sustainable Airports**
» Mr. Jian Tang, Prof. Zhixiang Zou, Mr. Yi Zhang, Ms. Xingqi Liu, Mr. Ruokai Xu

14:10 **An Integrated Simulation/Laboratory System to Investigate Grid/Inverter Stability Issues**
» Mr. Takahira Harusora, Prof. Grahame Holmes, Prof. Brendan McGrath, Dr. Lasantha Meegahapola

14:30 **MV Multi-functional Retrofit Converter for Enhanced Power Quality on O&G Platforms**
» Mr. Joseph Kiran Banda, Mr. Spyridon Chapaloglou, Prof. Elisabetta Tedeschi

13:30 **NTS1 -**
New Topology Solutions
Science Center - Einstein Room
Chaired by: Dr. Freddy Tan and Ms. QIAN XUN

Continued from **Wednesday, 29 June**

13:30 **Thermal Resistance Analysis of Power MOSFETs using Creo/Ansys Software Versus Physical Measurements**
» Mr. Boyang Xun, Prof. Wenchao Tian, Ms. QIAN XUN, Mr. Guoguang Zhang, Dr. Yixi Chen, Mr. Longji Pang

13:50 **Solid State Power Substations (SSPS): A Multi-Hierarchical Architecture from Substation to Grid Edge**
» Dr. Madhu Chinthavali, Dr. Radha Sree Krishna Moorthy, Dr. Michael Starke, Mr. Benjamin Dean

14:10 **Microinverter Architecture with Submodule-Level Balancing and Active Power Decoupling**
» Mr. Ubaid Ahmad, Dr. Carlos Olalla, Dr. Roberto Giral

14:30 **Designing an Intrusion Proof Adjustable Speed Drive System Controlling a Critical Process**
» Mr. Faris Alotaibi, Mr. Hasan Ibrahim, Mr. Jaewon Kim, Prof. Prasad Enjeti

13:30 **PV2 -**
Photovoltaic Systems - 2
On-line 1
Chaired by: Prof. Giampaolo Buticchi

13:30 **Suppression of Low-frequency Voltage Ripple in Cascaded H-bridge Multilevel Converters-based Large-scale PV Systems**
» Dr. kangan wang, Mr. Kong Derui, Mr. Zhengchao Zhong, Dr. Ning Gao, Prof. Fei Jiang, Prof. Weimin Wu, Prof. Marco Liserre

13:50 **MOV Lifetime Estimation with Impulse-Based Testing in PV Inverter Systems**
» Mr. Yuxi Men, Dr. Xiaonan Lu, Dr. Zheyu Zhang, Dr. Ramanathan Thiagarajan

14:10 **Maximizing the Benefits of Dynamic VAR Compensators on Distribution Systems with High Penetration PV**
» Mr. KEITH DSOUZA, Dr. Mesut Baran, Dr. Aleksandar Vukojevic

14:30 **A Data Quality-Aware Framework to Reliably Forecast Photovoltaic Generation and Consumer Load for an Improved Resilience of Microgrids**
» Dr. Aditya Sundararajan, Dr. Mohammed Olama, Mr. Max Ferrari, Mr. Ben Ollis, Dr. Guodong Liu

13:30 **AGC2 -**
Active Grid Control - 2
On-line 3
Chaired by: Rafael Pena-Alzola

13:30 **A Rule-based Concept for a Bottom-up Multi-Master Black Start of an Inverter-Dominated Low-Voltage Cell**
» Ms. Mina Mirzadeh, Mr. Robin Strunk, Ms. Sophie Matter, Mr. Iwo Bekker, Dr. Marco Munderloh, Mr. Tobias Erckrath, Prof. Lutz Hofmann, Prof. Axel Mertens

13:50 **Energy Quality Improvement in Permanent Magnet Base Wind Energy Conversion Systems**
» Dr. Oscar Carranza, Dr. Daniel Memije, Dr. Jaime Jose Rodriguez Rivas, Dr. Ruben Ortega Gonzalez, Mr. Hernan Axayacatl Sanchez Lugo

14:10 **Mitigating Peak-to-Average Power Variability in Wave Energy Converter Systems: A Design Comparison**
» Mr. Derek Jackson, Mr. Chris Dizon, Mr. Mohamad Saad Mohamad Khalid Shaikh, Prof. Yue Cao, Prof. Ted Brekken, Ms. Anna Edwards

14:30 **Small-Signal Modeling of Grid-Forming Power Converter**
» Dr. NGOC BAO LAI, Dr. Gregory Baltas, Prof. Pedro Rodriguez

13:30 **CD2 -**
Converter modeling, design, control - 2
On-line 2
Chaired by: Mr. Yuqi Wei

13:30 **Vector Repetitive Control Based on Harmonic Sequence Extraction for Shunt Active Power Filters**
» Mr. Hong Xu, Prof. Li Peng, Mr. Ke Hu, Dr. Manlin Chen

Continued from **Wednesday, 29 June**

13:50 **State-space Modeling of Dual Active Bridge Converters During Fault Ride-through Operation**
» Ms. Dongmeng Ye, Prof. Zhiguo Hao, Dr. Ting Wang, Dr. Jingxin Hu

14:10 **A New Continuous Modulation Scheme for Differential Mode Boost Inverter**
» Mr. KARTIK TANK, Prof. Man Mohan Garg, Prof. Sudip Mazumder

14:30 **Neural Network Models and Transfer Learning for Impedance Modeling of Grid-Tied Inverters**
» Dr. Yufei Li, Dr. Yicheng Liao, Prof. Xiongfei Wang, Prof. Lars Nordström, Prof. Prateek Mittal, Prof. Minjie Chen, Prof. H. Vincent Poor

13:30 **MG3 -**
Microgrids - 3
On-line 4
Chaired by: Prof. Rongwu Zhu

13:30 **Islanding of a Topologically Realistic Rural Grid Using Grid-Forming Inverters**
» Mr. VINSON GUOV, Prof. Yue Cao, Dr. Ian Beil

13:50 **Microgrid Communications Using the Open-Source Open Field Message Bus (OpenFMB) Framework Applied to a 480V, 100kW Laboratory Microgrid**
» Mr. Max Ferrari, Dr. Aditya Sundararajan, Mr. Neil Shepard, Mr. Ben Ollis, Mr. John Smith

14:10 **Distribution System Restoration Using Dynamic Microgrids with Inverter-Interfaced Black-Start Generation Units**
» Mr. Yuxi Men, Dr. Yuhua Du, Dr. Xiaonan Lu

14:30 **Demonstrating Distribution System Resiliency through Grid-Edge Microgrids, on a Multi-Site Networked Hardware-in-Loop Platform**
» Mr. Prithwiraj Roy Chowdhury, Dr. Yaswanth Nag Velaga, Dr. Somasundaram Essakiappan, Dr. Kumaraguru Prabakar, Dr. Madhav Manjrekar, Dr. Kevin Schneider, Dr. Stuart Laval

14:50 **Optimized control of DER and V2G systems in PEV charging stations including loss minimization and improved voltage profile**
» Mr. MARCOS GOMES, Mr. GABRIEL VILKN, Mr. Marcos Alves, Prof. Igor Pires

13:30 **EV2 -**
Electric Vehicle: battery charging and management - 2
On-line Fraunhofer
Chaired by: Dr. Hamzeh Beiranvand

13:30 **Rapid Prototyping of Bidirectional DC-DC Converter Control using FPGA for Electric Vehicle Charging Applications**
» Mr. Ahsan Ali, Ms. Niha Faisal, Mr. Zohaib Zia, Dr. Ishtiyaq Makda, Dr. Ahmad Usman

13:50 **Perspectives on Lithium-Based Batteries and Post-Lithium Batteries for Electric Vehicles**
» Ms. Chaoran Si, Dr. Wei LIU, Prof. K.T. Chau, Dr. Chaoqiang Jiang

14:10 **Optimal Power Management of Multi-Port Converter System in Electric Vehicle Charging Station**
» Mr. Somnath Meikap, Dr. Chandan Kumar, Dr. Abhishankar Kumar

14:30 **Sizing BESS and On-site Renewable for Battery-electric Freight Rail Fast Charging Station**
» Mr. VINSON GUOV, Mr. Derek Jackson, Prof. Yue Cao

14:50 **Input Filter Design Issues for Capacitive-link Transformer-less EV Universal Battery Supercharger**
» Mr. Moien Mohamadi, Prof. Sudip Mazumder

Continued from **Wednesday, 29 June**

13:30 **DC1 - DC Technologies**
On-line Bosch
Chaired by: Levy Ferreira Costa

13:30 **Condition Monitoring of DC-Link Capacitors by Estimating Capacitance and Real-time Core Temperature**
» Ms. Qian Luo, Prof. Bingyang Luo, Ms. Yueyue Zhu, Dr. Haoran Wang, Dr. Qian Wang, Prof. Guorong Zhu

13:50 **A Novel Optimal PI Controller Based DC/DC Boost Converter Application**
» Mr. Mehran Jelodari Mamaghani, Mr. Sam Teymoori, Mr. Naser eskandarian, Ms. Sanaz Sabzevari

14:10 **Implementation of a PI-Posicast Controller in a DC Microgrid feeding Local Load**
» Dr. Oscar Carranza, Mr. Hernan Axayacatl Sanchez Lugo, Dr. Ruben Ortega Gonzalez, Dr. Jaime Jose Rodriguez Rivas, Dr. Daniel Memije

14:30 **AC-DC Bidirectional Converter Based on DAB with Flyback Modulation**
» Mr. Pablo Guzmán, Prof. Nimrod Vazquez Nava, Prof. Marco Liserre, Dr. Rodolfo Orosco, Dr. Jaime Arau, Mrs. Claudia Hernandez

14:50 **Design and Implementation of a Resonant Controller to Balance the Capacitor Voltage on a HVDC Terminal Based on MMC**
» Mr. Diego Montoya-Acevedo, Dr. Andres Escobar-Mejía, Dr. Mauricio Holguin-Londono

15:00 **Coffee break**
Science Center - Foyer

15:30 **Closing ceremony**
Science Centre - Siemens Room