PEDG2020 Final Program

PESS1

9	A Novel Control Algorithm for Small-Scale Wind Generation System using Aerodynamic Torque Estimator
10	An Electrical Stall Control Algorithm for Small-Scale Wind Generation System using Aerodynamic Observer
60	Control Strategies Overview for Fixed Frequency Operation LLC Resonant Converter
192	An Adaptive Backstepping Based Virtual Inertial Control Framework for DC Microgrids

PESS2

31	Assessment Methodology for Power-Cell based on High-Current 10 kV SiC MOSFET Half-Bridge Module
43	Sensor Fault Detection for Line Regulating Converters supplying Constant Power Loads in DC Microgrids
130	A Novel Three-Port NPC Converter for Grid-Tied Photovoltaic Systems with Integrated Battery Energy Storage
52	A 3 kW Single-Stage Isolated AC-DC Converter with Individual Regulation of Power Factor and Output Power for Battery Charging Applications

PESS3

85	Reliability Analysis and Energy Yield of String-Inverter Considering Monofacial and Bifacial PV Panels
159	Design and Configuration of a Suitable Electrical Energy Storage Device for an MMC-STATCOM with Voltage Source Behavior
171	LLC Resonant Converter Design Based on the Worst Operation Point
98	A New Representation based on Virtual Capacitor for Virtual Synchronous Generators

PESS4

186	Model Predictive Control of a Quasi-Three-Level Inverter Topology Supplying Multiple Solar-Powered Pumps
212	Passivity-Based Current Control of a Dual-Active Bridge to Improve the Dynamic Response of a Solid-State Transformer During Power and Voltage Variations
221	Set-based Predictive Control of a Grid-tied Inverter with LCL filter Under Variable Grid Inductance Conditions
59	Magnetizing Inductor ON/OFF Control for LLC Resonant Converter with Wide Input Voltage Range

PESS5

158	Fuzzy Mamdani-based Model Predictive Load Frequency Control
132	Continuous Transient and Steady-State Control for Dual-Active Bridge Converters with Bidirectional Charge Control
107	Design and Implementation of a Harmonic Elimination Voltage Control Method for the Single-Phase Inverter

PESS6

74	**On the Direct Voltage Control Concept of Grid Connected Power Converters**
172	Variable Resonant and Magnetizing Inductor Control for LLC Resonant Converter
179	Topology and Voltage Balance of Series-Connected T-type Inverter for Medium-Voltage Drive Applications
180	Decoupled Modelling and Control of a Series-Parallel Modular Multilevel Converter for High-Power Variable-Speed Applications

PESS7

143	Series Resonant DC-DC Converter with Single-Switch Full-Bridge Boost Rectifier Operating at Fixed Switching Frequency
141	Multi-objective Optimization for Smaller, Efficient and Better Performed Design of Buck-boost Converters
144	A New Nonlinear Controller for Multilevel DC/DC Boost Converter
148	An Adjustable Algorithm for Power Spike Smoothing

DG1

39	Grid-Tied Three-Phase Inverter Current Control Considering Low Voltage Ride Through Capability: A Comparison between Stationary and Synchronous Reference Frames
25	On the Influence of Time Delay Modelling in Grid-Connected Converters for Harmonic Studies
32	Microgrid Design and Control of a Hybrid Building Complex
12	The Correlation of Network Topology and Power System Resilience by Using Neural Network Analysis

DG2

62	Optimal PV Inverter Control for Network Voltage and Power Factor Regulation
77	Virtual-Impedance-Based Droop Control for Grid-Forming Inverters with Fast Response to Unbalanced Grid Faults
78	Active Power Factor Compensation Based on a Geometric Phase Control Scheme
128	Two-step inertia provision with consideration of load type in an islanded wind turbine with grid-supporting voltage control

DG3

92	Implementation of a power hardware in-the-loop platform using the damping impedance method
97	Determination of the Frequency Dependent Thévenin Equivalent of Inverters Using Differential Impedance Spectroscopy
100	Enhancing Frequency Stability of Weak Grids with Modified Distributed Virtual Inertia Method
101	Microgrid Stability Analysis Considering Current State-Feedback

DG4

121	Analysis of a diesel-generator-assisted peak power reduction in a production plant
125	Price-optimal Electrical and Thermal Energy Flow Control within Microgrid – Smart Grid Interaction
82	Grid Forming Energy Router: Investigation of Load Control and Stability Response
207	A Linear Regression Based Resilient Optimal Operation of AC Microgrids

DG5

137	Analysis of a Microgrid Availability and Resilience with Distributed Energy Storage Embedded in Active Power Distribution Nodes
183	Generalized Behavioral Models of Three-Phase Converters and Electric Machines for System-Level Study and Stability Assessment
196	Modelling and Analysis of the Reliability of a PhotoVoltaic (PV) Inverter
217	Economical Secondary Control of DC Microgrids

DG6

140	Fast Power System Frequency Estimation by Shape Class Approximation for Synthetic Inertia Provision by Battery Energy Storage Systems
149	Distributed Control of Islanded Series PV-Battery-Hybrid Systems with Low Communication Burden
151	A Novel DC Microgrid-enabled Metro Traction Power System
157	WAMS State Estimation Considering Possible One-Step Delayed Measurements

ESS1

35	Non-Isolated Partial Power Converter for Electric Vehicle Fast Charging Stations
119	Smart Hybrid Inverter: a practical guide
111	Cost Effective Operation of a Hybrid Zero-Emission Ferry Ship
115	Sequential Phase-Shifted Model Predictive Control for a Multilevel Converter with Integrated Battery Energy Storage

ESS2

188	Optimizing Operations of Sodium Sulfur (NAS) Large-scale Battery Storage
139	Active Li-ion Battery Charge Balancing System Based on Flyback Converter
163	Distributed Finite-time Power Management for Hybrid Energy Storage Systems in DC microgrids

On-Demand oral presentations

63	Design and Control Optimisation of a Novel Bypass-embedded Multilevel Multicell Inverter for Hybrid Electric Vehicle Drives
69	Quasi-Notch-Filter-Based Highly Robust Active Damping for LCL-Filtered Grid-Connected Inverter
71	Passivity-based Design of Capacitor-Current-Feedback Active Damping for LCL-Filtered Inverter Considering Computation Delay Reduction
72	A Weighted Average Feedforward Scheme for LCL-Type Grid-Connected Inverter with High LCL Resonance Frequency
152	Inverter's Nonlinear Efficiency and Demand-Side Management Challenges
129	Modeling and Control of N-Parallel Virtual Synchronous Machines in Island Mode
156	Modulated Model Predictive Torque and Power Control of Gearless PMSG Wind Turbines
202	Predictive Power Control of Modular Multilevel Converter for Wind Energy Integration via HVDC
203	The Role of Model Predictive Control in Microgrid Power Quality - A Survey
182	Predictive Control of Two-Stage Grid-Connected Photovoltaic Energy System with Constant Switching Frequency

POSTER SESSION

All poster presentations are scheduled as on-demand session to be opened on Tuesday, September 29th, in the morning, CET.

LIST OF TUTORIALS :

TUT 1: Photovoltaic Power Generation Systems: Topologies, Control, Industrial Trends, and Future   Challenges

TUT 2: Advanced Control Technologies for DC Microgrids and Bidirectional DC-DC Converter

TUT 3: Technologies for Hardware In the Loop Simulation of Complex Power Converters

TUT 4: Electric Vehicle Charging Infrastructure: distribution, topologies and control

TUT 5: Comparison of Power Sharing Techniques for Paralleling Inverters

STS : Overcoming the Challenges of Integrating Distributed Energy and Energy Storage Using Hardware-in-the-Loop; Matt Baker

LIST OF KEYNOTES:

KEY 1: Power Electronics and Energy Access; Deepak Divan

KEY 2: Power Electronics Technology - Quo Vadis; Frede Blaabjerg

KEY 3: Power Electronic DC Converters for a medium-voltage DC Underlay Grid Enabling High-Power Fast Charging in Cities; Rik W. De Doncker

KEY 4: KONČAR - Electrical Industry Inc. with Accent on Power Electronics for Distributed Generation; Vladimir Siladi

KEY 5: Impact of SiC and RC-IGBT on Drive and Power Supply; Tatsuhiko Fujihira

KEY 6: Power Electronics and Electrical Systems in Transportation Electrification; Pat Wheeler

Monday, 28.09.2020

	Virtual room 1	Virtual room 2	Virtual room 3	Virtual room 4
14:00-18:00	TUT 1	TUT 2		
14:00-16:20			TUT 3	
16:30-18:30			TUT 4	TUT 5

Tuesday, 29.09.2020

	Virtual room 1	Virtual room 2	Virtual room 3
14:00-14:10	OPENING		
14:15-15:45	KEYNOTE 1,2		
15:50-17:20	PESS 5	ESS 1	DG 1
17:30-19:00	PESS 1	PESS 2	DG 2

Wednesday, 30.09.2020

	Virtual room 1	Virtual room 2	Virtual room 3
14:00-15:30	KEYNOTE 3,4		
15:40-17:10	PESS 6	ESS 2	DG 3
17:20-18:50	PESS 3	PESS 4	DG 4
19:00-20:00		STS*	

Thursday, 01.10.2020

	Virtual room 1	Virtual room 2	Virtual room 3
14:00-15:30	KEYNOTE 5,6		
15:40-17:10	PESS 7	DG 5	DG 6
17:20	CLOSING		

Time is Central European Time (CET)

14:00 CET = 2 p.m. CET = 8 a.m. New York = 8 p.m. Beijing

* STS = Special Technical Session organized by TYPHOON HIL

Final schedule is also visible on PEDG 2020 Virtual Event

https://event.pedg2020.exordo.com/