Table of Contents

Ses	Session 1 – Simulations, Power System Stability and Battery Storage Systems			
01	An Extended Stability Criterion for Grids With Q(V)-Controlled Distributed Energy Resources			
	Jonas Schmitt ¹ , Stefan Ecklebe ² , Sebastian Krahmer ¹ , Klaus Röbenack ² , Peter Schegner ¹ (1) Chair of Electrical Supply, Technische Universitat Dresde, Dresden, Germany (2) Institute of Control Theory, Technische Universität Dresden, Dresden, Germany			
02	Q-learning based control algorithm with dynamic combination of peak shaving and self-consumption optimization for industrial battery storage systems			
03	Modeling High Power Chargers at Highway Rest Stops Using Data on Real Usage Behavior 19 Johannes Beck, Nelly-Lee Fischer, Krzysztof Rudion Institute of Power Transmission and High Voltage Technology, University of Stuttgart, Stuttgart, Germany			
04	A time-step based steam accumulator simulation to define the optimal storage capacity			
Ses	ssion 2 - Photovoltaics and Optimization of Energy Systems			
05	PV2Heat to Mongolia: Transitioning from Coal to Solar-Powered Resistive Heating with			
	Thermal Storage to Improve Air Quality			
	Daniel Filipovic ¹ , Roland Unruh ¹ , Mohamad Alnassar ¹ , Joachim Böcker ¹ , Klaus Rauch ² , Christian Henner ³ , Emre Acar ⁴ , Oliver Wallscheid ¹			
	(1) Power Electronics and Electrical Drives, Paderborn University, Paderborn, Germany			
	(2) Klaus Rauch Consulting GmbH, Aulendorf, Germany (3) WestfalenWIND Strom GmbH, Paderborn, Germany			
	(4) Fluid Process Engineering, Paderborn University, Paderborn, Germany			
06	Design and Control of a High-Performance Single-Phase PV Inverter with MPPT and			
	PWM Control for Urban Residential Applications			
	Md. Shariful Islam ¹ , S.M. Abul Bashar ² , Md. Faishal Rahaman ³ (1) School of Automation, Beijing Institute of Technology, Beijing, China			
	(1) School of Automation, Beijing institute of Technology, Beijing, China (2) Department of Civil Engineering, RWTH Aachen University, Aachen, Germany			
	(3) School of Mechanical Engineering, Beijing Institute of Technology, Beijing, China			
07	Transfer of circular economy principles to photovoltaics by analyzing R principles43			
	Anna Katharina Schnatmann, Eva Schwenzfeier-Hellkamp Institute for Technical Energy Systems Bielefeld University of Applied Sciences and Arts, Bielefeld, Germany			
00				
U8	Design of a Building Energy System Using Model-Based Multi-Objective Optimization49 Leon Tadayon, Josef Meiers, Danny Jonas, Georg Frey			
	Chair of Automation and Energy Systems Saarland Universit Saarland Germany			

Poster Session

09	Design, Simulation, and Construction of a Three-Phase Grid Converter with Two Switchable Semiconductor Valves	
	Liska Steenbock, Andreas Kirsch, Jan Boris Loesenbeck Hochschule Bielefeld - University of Applied Sciences and Arts, Bielefeld, Germany	
10	Inductive Energy Harvesting System with Forced Linear Operation Christoph Andres, Martin Fritsch, Martin Wolter Institute of Electric Power Systems, Otto von Guericke University, Magdeburg, Germany	62
11		
	Ndeye Khady Diop Dieng ¹ , Lamine Thiaw ² , Martin Wolter ³ , Anna Kerstin Usbeck ⁴ , Ousmane Manga Adamou ⁵ (1) West African Science Service Centre on Climate Change and Adapted Land Use, Niamey, Niger (2) Ecole Superieure Polytechnique de Dakar, Cheikh Anta Diop University, Dakar, Senegal (3) Institute of Electric Power Systems, Otto von Guericke University, Magdeburg, Germany (4) Hamburg University of Applied Sciences, Hamburg, Germany (5) Abdou Moumouni University, Niamey, Niger	69
12	Applicability of Methods for Short circuit current Calculation in Electrolysis systems Jan Ullmer, Michael Bruhns, Peter Schegner, Michael Hehemann, Ralf Juchen (1) Chair of Electrical Power Systems Dresden University of Technology Dresden, Germany (2) Institute for Energy and Climate Research, Forschungszentrum Jülich, Jülich, Germany (3) SMA Solar Technology AG	7 6
Ses	ssion 3 - Transmission Lines and Faults	
13	Effects of unfavorably transposed transmission lines. Carlo Liebermann, Peter Schegner Technische Universität Dresden, Dresden, Germany	82
14	An Impedance Estimation Method for High Ohmic Ground Faults in Compensated	0.0
	Distribution Grids. Yannick Hilen, Georg Kordowich, Johann Jäger Institute of Electrical Energy Systems, Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen, Germany	88
15	An overview of the selection process for contactless electrical sensors used in overhead	0.4
	transmission lines' monitoring Khaled Osmani, Daniel Becker, Detlef Schulz Helmut-Schmidt-Universität - Universität der Bundeswehr Hamburg, Hamburg, Germany	94
16	Distance Protection Test on Siemens SIPROTEC Digital Twin with MATLAB Simulink Test Grid	100
	Hassan Alkhali, Jonathan Loebel, Johann Jäger Institute of Electrical Energy Systems, Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen, Germany	100
Ses	ssion 4 – Power Electronics	
17	Operational Insights into a 4 MVA Microgrid Laboratory for Decentralized Power Electronic Applications	106
	Dominik Schmies, Karl Stephan Stille, Jarren Lange, Oliver Wallschied Competence Center for Sustainable Energy Technologies, Paderborn University, Paderborn, Germany	100

18	ElectricGrid.jl – Automated modeling of decentralized electrical energy grids	112
	Marvin Meyer ¹ , Daniel Weber ¹ , Vikas Chidananda ² , Oliver Schweins ¹ , Jan Stenner ² ,	
	Septimus Boshoff ¹ , Sebastian Peitz ² , Oliver Wallscheid ¹	
	(1) Power Electronics and Electrical Drives, Paderborn University, Paderborn, Germany	
	(2) Data Science for Engineering, Paderborn University, Paderborn, Germany	
19	Converter-Driven Small Signal Stability and Interaction Analysis for Grid-Following	
	Converters in Weak and Strong Grids.	118
	Jana Celine Kamma, Christina Eckel, Christian Becker	
	Institute of Electrical Power and Energy Technology, Hamburg University of Technology, Hamburg, Germany	
20	Hybrid control of interconnected power converters using both expert-driven droop and	
20	data-driven reinforcement learning approaches	124
	Jan Stenner ¹ , Septimus Boshoff ² , Daniel Weber ¹ , Marvin Meyer ¹ , Vikas Chidananda ² ,	
	Sebastian Peitz ² , Oliver Wallscheid ¹	
	(1) Power Electronics and Electrical Drives, Paderborn University, Paderborn, Germany	
	(2) Data Science for Engineering, Paderborn University, Paderborn, Germany	