

Day 1 – November 12, 2018 (Monday)

Registration and Morning Coffee

Monday, November 12, 8:00-9:00, Hall in front of rooms 115, 115 and 116

Plenary Session 1

Chairpersons: Dr. Ilya Galkin (General Chairman, Latvia)

Monday, November 12, 13:30-15:30, room 115

- 9:00-9:05 Prof. Ilya Galkin (General Chairman, Latvia)
Opening Ceremony
- 9:05-9:25 Prof. Leonids Ribickis (RTU Rector, RTU-EEF-IEEI director, Full Member of Latvian Academy of Sciences, Latvia)
Welcome address
- 9:25:-9:30 Prof. Ilya Galkin (General Chair, Latvia)
Announcements
- 9:30-10:30 Dr.sc.ing., Prof. Frede Blaabjerg (Aalborg University, Denmark)
Keynote Lecture 1 “Power electronics - quo vadis”

Electrical Machines and Apparatus

Chairpersons: Alecksey Anuchin (Moscow Power Engineering Institute)
and Andrejs Podgornovs (Riga Technical University, Latvia)

Monday, November 12, 10:30-12:30, room 115

- 10:30-10:45 Milan Sebok (University of Zilina, Slovakia), Milan Simko, Milan Chupac, Patrik Beno and Matej Kubis
Prophylactic Measurement of Electrical Machines
- 10:45-11:00 Miroslav Gutten (University of Zilina, Slovakia), Daniel Korenciak, Peter Brncal and Milan Pospisil
Insulating Analysis of Transformers by FDS Method
- 11:00-11:15 Payam Shams Ghahfarokhi (Tallinn University of Technology, Estonia), Anouar Belahcen, Ants Kallaste, Toomas Vaimann and Anton Rassõlkin
Steady-State Thermal Model of a Synchronous Reluctance Motor
- 11:15-11:30 Matej Kucera (University of Zilina, Slovakia), Miroslav Gutten, Daniel Korenciak, Richard Janura and Peter Brncal
Design of the Measuring System for Analysis of Transformer by Return Voltage Measurement
- 11:30-11:45 Bilal Asad, Toomas Vaimann, Ants Kallaste (Tallinn University of Technology, Estonia) and Anouar Belahcen
Harmonic Spectrum Analysis of Induction Motor with Broken Rotor Bar Fault
- 11:45-12:00 Karlis Sejejs (Riga Technical University, Latvia), Edmunds Kamolins and Karlis Gulbis
Research of Shark Concept Using 3D Finite Element Analysis
- 12:00-12:15 Rahims Geidarovs (Riga Technical University, Latvia), Andrejs Podgornovs and Ilya Galkin
Simulation and Initial Evaluation of Modular Motor-Generator for Cost-Effective Power-Assist Wheelchair
- 12:15-12:30 Ants Kallaste (Tallinn University of Technology, Estonia), Toomas Vaimann and Anton Rassõlkin
Additive Design Possibilities of Electrical Machines

Smart Grids, Micro Grids and Renewable Energy Sources – Part 1

Chairpersons: Prof. Argo Rosin (Tallinn University of Technology, Estonia)

and Dr. Indrek Roasto (Tallinn University of Technology, Estonia)

Monday, November 12, 10:30-12:30, room 116

- 10:30-10:45 *Rebeca P. Díaz-Redondo (University of Vigo, Spain) and Ana Fernández Vilas*
Smart Grids Monitoring: A fog-computing strategy to detect anomalies
- 10:45-11:00 *Marek Jarkovoi (Tallinn University of Technology, Estonia), Toomas Vinnal Lauri Kütt*
Harmonic Currents and Voltages in LV Networks of Estonia: Measurement Results, Case Studies
- 11:00-11:15 *Romans Oleksijs (Riga Technical University, Latvia) and Olegs Linkevics*
Photovoltaic system application for industry self consumption needs
- 11:15-11:30 *Vaidotas Marušauskas (Kaunas University of Technology, Lithuania), Jonas Vaišnys, Audrius Jonaitis, Saulius Gudžius, Vilius Malažinskas and Paulius Kozlovas*
Power transformer working regime analysis in photovoltaic power stations
- 11:30-11:45 *Tarmo Korõtko (Tallinn University of Technology, Estonia) and Argo Rosin*
Search algorithm development for novel electricity auction in microgrids
- 11:45-12:00 *Mohamed Abdel-Fattah (Reykjavik University, Iceland), Matteo Dall'agnol, Riccardo Grossele, and Sondre Lyngholm*
Electric and Thermal Heating Systems for Use in Household in the South of Europe: A Comparison Study
- 12:00-12:15 *Ansis Avotins (Riga Technical University, Latvia), Armands Šenfēlds, Agris Nikitenko, Andrejs Podgornovs, Kristaps Zadeiks and Mārcis Dzenis*
**IoT Solution Approach for Energy Consumption Reduction in Buildings
Part 3. Mathematical Model of Building and Experimental Results**
- 12:15-12:30 *Mohamed Abdel-Fattah (Reykjavik University, Iceland), Alexander Moses and Alberto Landeros*
Particle Swarm Optimization for Sizing Hybrid Power Systems Incorporating Demand Response

Lunch

Monday, November 12, 12:30-13:30, Bistro at the first floor

Session: **Low Current Electronic Circuits, Control Electronics and Measurements**

Chairpersons: Dr. Dmitrijs Pikulins (Riga Technical University, Latvia)

Monday, November 12, 13:30-15:30, room 115

- 13:30-13:45 *Toivo Varjas (Tallinn University of Technology, Estonia), Marko Kuusik, Argo Rosin and Jelena Armas*
Assessment of pedestrian crossings measuring parameters and implementation of new measuring methods in Estonia
- 13:45-14:00 *Mikhail Bezuglyi (National Technical University of Ukraine «Igor Sikorsky Kyiv Polytechnic Institute», Ukraine), Natalia Bezuglaya, Oleksii Kuprii and Iryna Yakovenko*
The non-invasive optical glucometer prototype with ellipsoidal reflectors
- 14:00-14:15 *Nadezhda Kunicina, Anatolijs Zabasta, Antons Patlins (Riga Technical University, Latvia), Jelena Caiko and Rasa Bruzgiene*
The resilience of automatic wireless meters reading for infrastructure networks in smart city model
- 14:15-14:30 *Ansis Avotins (Riga Technical University, Latvia), Olegs Tetervenoks, Rolands Vilums, Peteris Apse-Apsitis and Leslie Robert Adrian*
Movement Detection Sensor Application for Traffic Direction Monitoring in Smart Street Lighting Systems
- 14:30-14:45 *Andrejs Potapovs, Ansis Avotins (Riga Technical University, Latvia), Peteris Apse-Apsitis, Mikhail Gorobetz and Peteris Ceirs*
Continuous Crop Weight Measurement Sensor Calibration Algorithm for Industrial Greenhouse
- 14:45-15:00 *Otto Kricki s(Riga Technical University, Latvia) and Sigurds Jaundalders*
DC Electrical Field Impact on Propane Combustion By-Products and Acoustic Effect of The Flame
- 15:00-15:15 *Edgars Grinfogels, Peteris Apse-Apsitis (Riga Technical University, Latvia), Armands Senfelds and Ansis Avotins*
Electrical power measurement method comparison using statistical analysis

Session: Power Engineering – Part 1

Chairpersons: *Dr. Laila Zemite (Riga Technical University, Latvia)*
and *Prof. Vladislav Samoylenko (Ural Federal University, Russia)*

Monday, November 12, 13:30-15:30, room 116

- 13:30-13:45 *Josifs Survilo (Riga Technical University, Latvia)*
Features of Distribution Grid Optimization
- 13:45-14:00 *Josifs Survilo (Riga Technical University, Latvia) and Lubov Petrichenko*
Expedience and Possibilities of Implementation of HV Single-transformer Substations
- 14:00-14:15 *Zane Broka (Riga Technical University, Latvia), Karlis Baltputnis, Antans Sauhats, Liga Sadovica and Gatis Junghans*
Stochastic Model for Profitability Evaluation of Demand Response by Electric Thermal Storage
- 14:15-14:30 *Kristine Marcina (Riga Technical University, Latvia) and Antans Sauhats*
Exploring potential benefits and challenges of European Balancing market: literature review
- 14:30-14:45 *Lubov Petrichenko (Riga Technical University, Latvia), Antans Sauhats, Roman Petrichenko and Deniss Bezrukov*
Long-Term Price Forecasting for the Cost-Benefit Analysis of Power Equipment
- 14:45-15:00 *Olegs Linkevics (Riga Technical University, Latvia), Anatolijs Mahnitko, Anatoly Zamulko, Valeriy Deshko and D.S. Karpenko*
Evaluation of the district heating market efficiency as the function of its size and number of competing suppliers
- 15:00-15:15 *Pavel Ilyushin, Vladislav Samoylenko (Ural Federal University, Russia) and Andrew Pazderin*
An Analysis of DG Units Reliability Statistics
- 15:15-15:30 *Aleksandrs Soročins (Riga Technical University, Latvia), Jānis Nagla, Sigurds Jaundālders and Dmitrijs Rusovs*
Profitability of a Biogas Power Plant for Energy Self-consumption in Processing Plants with Biodegradable Waste

Coffee Break

Tuesday, November 13, 15:30-16:00, Hall in front of rooms 115, 115 and 116

Power Electronics – Part 1

Chairpersons: Prof. Dmitri Vinnikov (Tallinn University of Technology, Estonia)
and Dr. Oleksandr Husev (Chernihiv National University of Technology, Ukraine)
Monday, November 12, 16:00-18:15, room 115

- 16:00-16:15 Indrek Roasto (Tallinn University of Technology, Estonia), Tanel Jalakas and Argo Rosin
Control of a Bidirectional Grid Forming Inverter for Nearly Zero Energy Buildings
- 16:15-16:30 Sergio Pires Pimentel (Federal University of Goias (UFG), Brazil), Oleksandr Husev, Dmitri Vinnikov, Carlos Roncero-Clemente and Serhii Stepenko
An Indirect Model Predictive Current Control (CCS-MPC) for Grid-Connected Single-Phase Three-Level NPC Quasi-Z-Source PV Inverter
- 16:30-16:45 Moria Elkayam, Alon Kuperman (Ben-Gurion University of the Negev, Israel) and Moshe Sitbon
Loop Gain Oriented Design of Multiresonant Current Controllers
- 16:45-17:00 John Konstantaras (Technological Education Institution of Sterea Ellada Greece), Yannis Koutsoubis, Aphrodite Ktena and Christos Manassis
Intelligent grid-interactive single-phase inverter
- 17:00-17:15 Elena Makovenko (Tallinn University of Technology, Estonia), Oleksandr Husev, Carlos Roncero-Clemente, Enrique Romero-Cadaval and Dmitri Vinnikov
Single-Phase Three-Level qZ-Source Inverter Connected to the Grid with Battery Storage and Active Power Decoupling Function
- 17:15-17:30 Oleksandr Korkh (Tallinn University of Technology, Estonia), Andrei Blinov, Roman Kosenko and Dmitri Vinnikov
Comparison of Soft Switching Methods of DC-AC Full Bridge High-Frequency Link Converter
- 17:30-17:45 Bohdan Pakhaliuk (Chernihiv National University of Technology, Ukraine), Janis Zakis, Oleksandr Husev, Deniss Stepins and Ryszard Strzelecki
Optimal multivariable control for modified Z-source based IPT approach
- 17:45-18:00 Ivars Rankis and Marcis Prieditis (Riga Technical University, Latvia)
Investigation of direct AC-AC BUCK converter with series injection transformer
- 18:00-18:15 Oleksandr Matiushkin (Tallinn University of Technology, Estonia), Oleksandr Husev, Dmitri Vinnikov and Vyacheslav Gordienko
Grid connected buck-boost inverter based on unfolding circuit

Session: **Power Engineering – Part 2**

Chairpersons: Dr. Renata Varfolomejeva (Riga Technical University, Latvia)

and Prof. Stanislav Eroshenko (Ural Federal University, Russia)

Monday, November 12, 16:00-18:30, room 116

- 16:00-16:15 *Stanislav Eroshenko (Ural Federal University, Russia) and Pavel Ilyushin*
Features of implementing multi-parameter islanding protection in power districts with distributed generation units
- 16:15-16:30 *Irina Kolosok, Elena Korkina, Anatolijs Mahnitko and Aleksandrs Gavrilovs (Riga Technical University, Latvia)*
Supporting Cyber-Physical Security of Electric Power System by the State Estimation Technique
- 16:30-16:45 *Irina Kolosok, Elena Korkina, Alexandr Tikhonov, Anatolijs Mahnitko and Aleksandrs Gavrilovs (Riga Technical University, Latvia)*
Modeling of FACTS devices for Smart Grid State Estimation
- 16:45-17:00 *Robert John Millar (Aalto University, Finland), Teemu Nurmi, Pyry Karhu, Ella Leppänen, Sami Herranen, Pekka Holopainen, Stanislav Kalabin, Kasper Koimäki, Jere Luoma-Aho, Iida Salmivesi, Juhani Tammi and Martin Vidjeskog*
To Grid or Not to Grid: Viability of Standalone Distribution Networks in the Far North
- 17:00-17:15 *Matti Lehtonen (Aalto University, Finland), Niyazi Gunduz and Sinan Kufeoglu*
On the Evaluation of Customers Interruption Costs due to Unexpected Power Outages
- 17:15-17:30 *Dmitrijs Rusovs (Riga Technical University, Latvia), Sigurds Jaundālders and Pēteris Stanka*
Blockchain Mining of Cryptocurrencies as Challenge and Opportunity for Renewable Energy
- 17:30-17:45 *Krishna Murari (National Institute of Technology, India) and Narayana Prasad Padhy*
Framework for Assessing the Economic Impacts of AC-DC Distribution Network on the Consumers
- 17:45-18:00 *Pavel Bannykh (Ural Federal University, Russia), Semyon Lozkhin, Nikita Mukhlynin, Andrey Pazderin and Olga Malozemova*
Distribution Grid Power Flow Algorithm Based On Power-Energy Flow Model
- 18:00-18:15 *Mahmoud Aref, Amir Abdelmeneam, Vladislav Oboskalov, Anatolijs Mahnitko and Aleksandrs Gavrilovs (Riga Technical University, Latvia)*
Transient Analysis of AC and DC Microgrid with Effective of SFCL
- 18:15-18:30 *Mahmoud Aref, Ismaiel Ahmed, Vladislav Oboskalov, Anatolijs Mahnitko and Aleksandrs Gavrilovs (Riga Technical University, Latvia)*
Distribution Grid Power Flow Algorithm Based On Power-Energy Flow Model

Welcome Reception

Monday, November 12, 18:30-21:00, Bistro at the first floor

Day 2 – November 13, 2018 (Tuesday)

Registration and Morning Coffee

Tuesday, November 13, 8:00-9:00, Hall in front of rooms 115, 115 and 116

Plenary Session 2

Chairpersons: Dr. Ilya Galkin (General Chairman, Latvia)

Tuesday, November 13, 13:30-15:30, room 115

9:00-10:30 *Dr.sc.ing. Donatas Mishkinis (Allatarm Ltd., Spain)*
Keynote Lecture 2 “Advanced Thermal Management in Electronic Packaging”

Electrical Drives

Chairpersons: Ants Kallaste (Tallinn University of Technology)

and Girts Stana (Riga Technical University)

Tuesday, November 13, 10:30-12:30, room 115

- 10:30-10:45 *Anton Rassõlkin, Raivo Sell, Ants Kallaste (Tallinn University of Technology, Estonia) and Toomas Vaimann*
Propulsion Motor Drive Topology Selection for Further Development of ISEAUTO Self-Driving Car
- 10:45-11:00 *Kaspars Kroics (Riga Technical University, Latvia)*
Development of Induction Motor Based Test Bench for Supercapacitor Braking Energy Recovery System Testing
- 11:00-11:15 *Levon Gevorgov, Anton Rassõlkin, Ants Kallaste (Tallinn University of Technology, Estonia) and Toomas Vaimann*
Electric Drive for Throttle Control of Centrifugal Pump System
- 11:15-11:30 *Yulia Kazemirova (Moscow Power Engineering Institute, Russian Federation), Alecksey Anuchin, Dmitry Shpak and Yury Safonov*
Analytical Solution to Voltage Balance Control in a 3-Level Neutral-Point-Clamped Inverter
- 11:30-11:45 *Maxim Yakovenko, Alecksey Anuchin (Moscow Power Engineering Institute, Russian Federation), Dmitry Shpak, Vadim Ostrirov, Mikhael Podlesny and Konstantin Milskiy*
Active Elimination of Supply Current Harmonics in a Subway Motor-Compressor Drive
- 11:45-12:00 *Girts Stana (Riga Technical University, Latvia) and Viesturs Brazis*
Comparative Modeling of Mobile Energy Storage System Application for Trolleybuses
- 12:00-12:15 *Ilya Dvornikovs (Riga Technical University, Latvia), Marks Marinbahs, Olegs Sliskis and Kārlis Ketners*
Investigation of autonomous traction motor dynamic using method of mutual loading and computer simulation
- 12:15-12:30 *Mostafa Kermani (Sapienza University of Rome, Italy), Giuseppe Parise, Luigi Martirano, Luigi Parise and Ben Chavdarian*
Power Balancing in STS group Cranes with Energy Storage system based on DSM Strategy

Session: Power Engineering – Part 3

Chairpersons: Dr. Jevgenijs Kozadajevs (Riga Technical University, Latvia)

and Ms. Olga Malozemova (Ural Federal University, Russia)

Tuesday, November 13, 10:30-12:30, room 116

- 10:30-10:45 *Jevgenijs Kozadajevs, Dmitrijs Boreiko (Riga Technical University, Latvia), Ivars Zalitis and Aleksandrs Dolgicers*
Heat consumption modelling and optimisation for power substations
- 10:45-11:00 *Toomas Vinnal, Lauri Kütt and Marek Jarkovoi (Tallinn University of Technology, Estonia)*
Voltage Dips and Swells in Low Voltage Networks of Estonia
- 11:00-11:15 *Sambeet Mishra (Tallinn University of Technology, Estonia), Chiara Bordin and Ivo Palu*
RNR: Reliability oriented Network Restructuring
- 11:15-11:30 *Tija Sīle (Latvian State University, Latvia), Andrea Hahmann, Björn Witha, Martin Dörenkämper, Magnus Baltscheffsky and Stefan Söderberg*
Applying Numerical Weather Prediction Models to the Production of New European Wind Atlas
- 11:30-11:45 *Triin Kangro (Tallinn University of Technology, Estonia), Jako Kilter, Jeewantha De Silva and Kaur Tuttelberg*
Assessment of HV XLPE Cable Sheath Layer Modelling Approaches for EMT Studies
- 11:45-12:00 *Ilya Polyakov, Andrey Pazderin and Olga Malozemova (Ural Federal University, Russia)*
Topology error processing in distribution networks by normalized residuals analysis of three-phase models
- 12:00-12:15 *Kamil Bahteev (Kazan State Power Engineering University, Russia), Alexander Fedotov and Rinat Misbahov*
The Improving quality of power supply to industrial consumers using high-power energy storage
- 12:15-12:30 *Jalal Sahebkar Farkhani (Birjand University, Iran), Seyed Gholamreza Asghari, Hamid Reza Najafi and Mohsen Ghalenavi*
Impacts of distributed generation penetration on Feeder Voltage Profile of Radial Network

Lunch

Tuesday, November 13, 12:30-13:30, Bistro at the first floor

Session: **Information and Communication Technologies in Electrical and Power Engineering**

Chairperson: Dr. Mikhail Gorobetz (Riga Technical University, Latvia)

and Ms. Anna Beinarovica (Riga Technical University, Latvia)

Tuesday, November 13, 13:30-15:30, room 114

- 13:30-13:45 Deniss Brodnevs (Riga Technical University, Latvia) and Aleksandrs Kutins
Reliable data communication link implementation via cellular LTE services for static or moving ground equipment control
- 13:45-14:00 Anna Beinarovica (Riga Technical University, Latvia), Mikhail Gorobetz, Ivars Alps and Anatoly Levchenkov
Algorithm of Signal Recognition for Railway Embedded Control Devices
- 14:00-14:15 Francisco Casesnoves (Tallinn University of Technology, Estonia)
Optimization of probability of failure with the erosion integral- differential model in power plants mechanics
- 14:15-14:30 Nezha El Hichami, Ahmed Abbou, Saloua Marhraoui, Salaheddine Rhaili (Mohammed V University in Rabat, Morocco) and Abdellah Ziouh
Grid Connected Photovoltaic System using a Fuzzy Logic Control Approach
- 14:30-14:45 El Idrissi Rafika (Mohammadia School's of Engineers, Morocco), Ahmed Abbou and Mahdi Salimi
Artificial Neural-Network-Based Maximum Power Point Tracking for Photovoltaic Pumping System using Backstepping Controller
- 14:45-15:00 Nguyen Dinh Dung (Budapest University of Technology and Economics, Hungary) and Jozsef Rohacs
The drone-following models in smart cities
- 15:00-15:15 Aleksandr Korneyev, Mikhail Gorobetz (Riga Technical University, Latvia) and Anatoly Levchenkov Unified Energy Efficient Control
Algorithm for Electric Unmanned Aerial Vehicles with Different Traction Drives and Configurations
- 15:15-15:30 Alexandra Khalyasmaa (Ural Federal University named after the first President of Russia B.N. Yeltsin, Russia), Mihail Senyuk and Stanislav Eroshenko
Training sample formation in problems of intelligent recognition of circuit breakers states patterns

Electrical Engineering and Electrophysics

Chairpersons: Dr. Ilya Galkin (General Chairman, Latvia)

and Dr. Antons Patlins (Riga Technical University, Latvia)

Tuesday, November 13, 13:30-15:30, room 115

- 13:30-13:45 *Ivar Kiitam (Tallinn University of Technology, Estonia), Paul Taklaja and Kaur Tuttelberg*
Effect of Electrode Shape on Medium Voltage Covered Conductor Insulation Durability Under Electric Stress
- 13:45-14:00 *Oskars Bormanis (Riga Technical University, Latvia) and Leonīds Ribickis*
Accelerated Life Testing in Reliability Evaluation of Power Electronics Assemblies
- 14:00-14:15 *Antons Patlins (Riga Technical University, Latvia), Andrii Hnatov, Shchasiana Arhun, Oleksandr Dziubenko and Svitlana Ponikarovska*
Determination of the best load parameters for productive operation of PV panels of series FS-100M and FS-110P for sustainable energy efficient road pavement
- 14:15-14:30 *Kristaps Vitols (Riga Technical University, Latvia) and Eizens Poiss*
Development of Electric Scooter Battery Pack Management System
- 14:30-14:45 *Donato Repole (Riga Technical University, Latvia) and Leslie R. Adrian*
Evaluation of GaN MOSFET for Unmanned Aerial Vehicles BLDC Motor Drive
- 14:45-15:00 *Nikolay Chernyshov (Belgorod State Technological University named after V.G. Shukhov, Russian Federation), Aleksander Belousov, Igor Gvozdevskiy, Nikolay Slipchenko and Mohammad Alkhawaldeh*
Spin Resonance in a Semiconductor Structure When Considering Electron-Hole Interaction in Quantizing Magnetic Field
- 15:00-15:15 *Margarita Borisova, Benthara Jayasinghe (Peter the Great St.Petersburg Polytechnic University, Russian Federation) and Almaz Kamalov*
Electrical and electret properties of non-woven “spunbond” polypropylene
- 15:15-15:30 *Hikmet Aliyev (Azerbaijan Technical University, Azerbaijan), Musafir Guliyev, Subhan Namazov and Rafiq Ismayilova*
Thermal conductivity of polyvinylchloride /graphite composite

Session: **Power Engineering – Part 4**

Chairpersons: Dr. Aleksandrs Dolgicers (Riga Technical University, Latvia)
and Dr. Georgii Vagapov (Kazan State Power Engineering University, Russia)
Tuesday, November 13, 13:30-17:15, room 116

- 13:30-13:45 *Evgenii Kokorin and Stepan Dmitriev (Ural Federal University, Russia)*
Calculation of the relay protection and automation failure risk with consideration of systemic factors
- 13:45-14:00 *Sergejs Rubcovs (Riga Technical University, Latvia)*
Complex analysis of the oscillograms of the full-scale experiment in the Latvian power system for the creation and automatic prevention of artificial asynchronous regime
- 14:00-14:15 *Olga Malozemova (Ural Federal University, Russia), Pavel Chusovitin and Andrey Pazderin*
Power boosting algorithm for combined cycle power plant control during frequency excursion
- 14:15-14:30 *Jalal Sahebkar Farkhani (Birjand University, Iran), Seyed Gholamreza Asghari and Mohsen Ghalenavi*
Impact Penetration of Distributed Generation on Short Circuit Level and relay protection
- 14:30-14:45 *Aleksander Fedotov, Rafik Basirov, Georgii Vagapov (Kazan State Power Engineering University, Russia), Linar Abdullin and Larisa Grackova*
Single-Phase Ground Fault Test of Overhead Power Lines in Ungrounded Power Grids of 6-10 kV
- 14:45-15:00 *Affijulla Shaik (National Institute of Technology, India) and Praveen Tripathy*
A Special Protection Scheme for Transmission Lines based on Wide Area Monitoring System
- 15:00-15:15 *Michał Kosmecki and Robert Rink (Power Engineering Institute, Poland)*
Hybrid Method for Grid Impedance Estimation Based on Local Measurements
- 15:15-15:30 *Alexandra Khalyasmaa (Ural Federal University, Russia), Kirill Zinovyev, Stanislav Eroshenko and Aleksandr Egorov*
Research on short-circuit current levels in the Sverdlovsk power system

Coffee Break

Tuesday, November 13, 15:30-16:00, Hall in front of rooms 115, 115 and 116

Session: **Electrical Engineering Education**

Chairpersons: Prof. Anastasija Zhiravecka (Riga Technical University, Latvia)
and Dr. Zoja Raud (Tallinn University of Technology, Estonia)

Tuesday, November 13, 16:00-18:15, room 114

- 16:00-16:15 Michael Bragard (University of Applied Sciences Aachen, Germany), Hauke van Hoek, Anne von Hoegen and Rik W. De Doncker
Motivation-based Learning: Teaching Fundamentals of Electrical Engineering with an LED Spinning Top
- 16:15-16:30 Zoja Raud (Tallinn University of Technology, Estonia), Valery Vodovozov, Eduard Petlenkov and Aleksandr Serbin
Ontology-Based Design of Educational Trajectories
- 16:30-16:45 Julija Golosova (Riga Technical University, Latvia), Signe Remese and Andrejs Romanovs
Development of Methodological Support for Automated Process Modelling
- 16:45-17:00 Nadezhda Kunicina, Anatolijs Zabasta, Oksana Nikiforova, Andrejs Romanovs and Antons Patlins (Riga Technical University, Latvia)
Modern tools of career development and motivation of students in Electrical Engineering Education
- 17:00-17:15 Harold Kirkham (Pacific Northwest National Laboratory, United States), Mihaela Albu, Matthias Engels, Guglielmo Frigo, A Hedayatipour, David Laverty, Alexandra von Meier, Artis Riepnieks, Rod White and Z-M Yang
Teaching Measurement Fundamentals
- 17:15-17:30 Antons Patlins (Riga Technical University, Latvia)
Research the phenomenon of motivation, towards to science, through effective teaching, learning, research and scientific writing as the approach for improvement of electrical and power engineering education
- 17:30-17:45 Sergey Vasyukov (Bauman Moscow State Technical University, Russian Federation), Alexander Krasovsky and Olga Miseyuk
The System Approach for the Application of Measuring Instruments and Computer Modeling Tools for the Electrical Laboratory for the Bauman Moscow State Technical University
- 17:45-18:00 Manuel Bindzus and Michael Bragard (University of Applied Sciences Aachen, Germany)
Motivating Intuitive Understanding of the Switched Reluctance Machine in the Education of Undergraduate Students
- 18:00-18:15 René Rütters (University of Applied Sciences Aachen, Germany), Marius Weinheimer and Michael Bragard
Teaching Control Theory with a Simplified Helicopter Model and a Classroom Fitting Hardware Test-Bench

Power Electronics – Part 2

Chairpersons: Prof. Alon Kuperman (Ben-Gurion University of the Negev, Israel)

and Prof. Sergio Pires Pimentel (Federal University of Goias – UFG, Brazil)

Tuesday, November 13, 16:00-18:15, room 115

- 16:00-16:15 *Pavel Rashitov (National Research University «MPEI»
Moscow, Russian Federation), Evgeniy Vershanskiy and Michail Petrov*
Analysis of the operation modes of the distributed series compensation devices in the nonlinear mode
- 16:15-16:30 *Rodions Saltanovs (Riga Technical University, Latvia) and Alexander Krainyukov*
Employment of SiC MOSFETs and GaN – transistors for Micro Arc Oxidation
- 16:30-16:45 *Pavels Suskis (Riga Technical University, Latvia)*
Gain Scheduling Feedback Loop Compensator for Boost Converter
- 16:45-17:00 *Serhii Stepenko (Tallinn University of Technology, Estonia), Oleksandr Husev, Sergio Pires Pimentel, Elena Makovenko and Dmitri Vinnikov*
Small Signal Modeling of Interleaved Quasi-Z-Source Inverter with Active Power Decoupling Circuit
- 17:00-17:15 *Mahajan Sagar Bhaskar, Sanjeevikumar Padmanaban (Aalborg University, Denmark), Frede Blaabjerg, Jens Bo Holm-Nielsen and Dan M. Ionel*
L-L and L-2L Multilevel Boost Converter Topologies with Voltage Multiplier with L-L and L-2L Converter of XY Family
- 17:15-17:30 *Andrii Chub, Dmitri Vinnikov, Ebrahim Babaei, Elizaveta Liivik, Oleksandr Korkh (Tallinn University of Technology, Estonia) and Samir Kouro*
Single-Switch Impedance-Source Galvanically Isolated DC-DC Converter with Combined Energy Transfer Converter
- 17:30-17:45 *Yurii Voitovych (National Technical University “Kharkiv Polytechnic Institute”, Ukraine), Vadym Makarov and Ievgen Pichkalov*
18-Pulse Rectifier with Electronic Phase Shifting with Autotransformer in Inverter and Rectifier Mode
- 17:45-18:00 *Mahdi Salimi (Islamic Azad University, Iran) and Rafika El Idrissi*
Passivity Based Control of the Isolated Flyback Power Supplies Using Exact State-Space Model
- 18:00-18:15 *Rahmet Aybuke Bilir (Test&Approval Department Arçelik, Turkey), Zülal Tosunoglu, Aydogan Bilir, Nihan Altintas and Erkan Mese*
A Comparative Study on Power MOSFET Reliability and Failure Modes

Smart Grids, Micro Grids and Renewable Energy Sources – Part 2

Chairpersons: Prof. Mohamed Abdel-Fattah (Reykjavik University, Iceland)

and Dr. Laila Zemīte (Riga Technical University, Latvia)

Tuesday, November 13, 16:00-18:15, room 116

- 16:00-16:15 Mohamed Abdel-Fattah (Reykjavik University, Iceland), Renata Barajas and Caroline Medino
Wind Energy Reserve Power Integration for Improving Icelandic Grid Reliability: A Case Study in the Westfjords
- 16:15-16:30 Līga Sadovica (Riga Technical University, Latvia), Gatis Junghāns, Antans Sauhats, Zane Broka, Kārlis Baltputnis and Valentins Lavrinovics
Case study – assessing economic potential for demand response in Baltic balancing market
- 16:30-16:45 Muhammad Naveed Iqbal (Tallinn University of Technology, Estonia), Lauri Kutt and Argo Rosin
Complexities associated with modeling of residential electricity consumption
- 16:45-17:00 Vahur Maask (Tallinn University of Technology, Estonia), Argo Rosin and Indrek Roasto
Development of Experimental Load Management System for Nearly Zero-Energy Building
- 17:00-17:15 Sergey Gusev (Ural Federal University, Russia), Alexander Tavlintsev, Anton Suvorov, , Elena Staimova, Inga Zicmane and Kristina Berzina
Search for the Single-type Load Schedules of the Power Facility
- 17:15-17:30 Sergey Gusev (Ural Federal University, Russia), Rustam Valiev, Vladislav Oboskalov, Inga Zicmane and Kristina Berzina
An analytical method for accelerating calculations of the probability of power flows exceeding the tie-lines capacity
- 17:30-17:45 Laila Zemite (Riga Technical University, Latvia), Lubov Petrichenko, Antans Saulus Sauhats and Aivo Jasevics
Small-Scale Renewable Generation Support in Latvia
- 17:45-18:00 Enea Mele (Department of Electrical Engineering, TEI of Sterea Ellada, Greece), Aphrodite Ktena and Charalambos Elias
Electricity use profiling and forecasting at microgrid level

Guided Tour at Beer Museum “Aldaris”

(Including transfer from RTU to the museum, for registered participants only)

Tuesday, November 13, 18:45-20:30, Beer Museum “Aldaris”

Gala Dinner, Award Ceremony and Closing Ceremony

(including transfer from RTU to the museum and back, for registered participants only)

Tuesday, November 13, 20:15-23:45, Beer Museum “Aldaris”

Day 3 – November 14, 2018 (Wednesday)

Technical visit to gas storage “Inchukalns”

(Including transfer from RTU and back, for registered participants only)

Tentative schedule

10:00-11:00 Transfer to gas storage “Inchukalns”

11:00-12:30 Technical visit in gas storage “Inchukalns”

12:30-13:45 Transfer to Ligatne

13:45-14:30 Light lunch in Ligatne

14:30-16:00 Transfer to Sigulda and short bus tour in Sigulda

16:00-17:00 Transfer to Riga