

Final Programme

2016 17th International
Scientific Conference on

ELECTRIC POWER ENGINEERING (EPE)



BRNO UNIVERSITY OF TECHNOLOGY

Faculty of Electrical Engineering and Communication
Department of Electrical Power Engineering

and

CZECH TECHNICAL UNIVERSITY IN PRAGUE

Faculty of Electrical Engineering
Department of Electrical Power Engineering

EPE
2016



2016 17th International Scientific Conference on ELECTRIC POWER ENGINEERING (EPE)

May 16 - 18, 2016, Prague, Czech Republic

Brno University of Technology and Czech Technical University in Prague

Welcome

Dear colleagues,

it is our pleasure to welcome you at the 2016 17th International Scientific Conference on Electric Power Engineering (EPE 2016). This conference covers the wide range of energy systems research with a focus on electrical power systems. The previous EPE conferences were organized in turns by two technical universities in the Czech Republic: VŠB - Technical University of Ostrava and Brno University of Technology.

This year EPE conference is held in Prague for the first time, organized in a collaboration of Brno University of Technology and Czech Technical University in Prague. We believe this will bring a unique possibility to join professional interest in electrical power engineering with visiting Prague city historical centre including UNESCO area. On behalf of the organizing committee who has been working for a long time to put this meeting together, we cordially welcome all participants.

Our goal in organizing this meeting has been to provide an intellectually stimulating atmosphere for the exchange of scientific ideas concerning research, development and service in electrical power engineering area in a relaxing environment. We hope that you will have the opportunity to take advantage of the conference venue and its position near the city centre. Please don't hesitate to contact one of us if any questions arise.

Thank you for coming and enjoy your time in Prague!

Conference Programme Overview

Monday, May 16, 2016

10:30 - 17:30	Participants registration			
12:00 - 13:00	Room ABCD – Plenary session: Conference Opening and Keynote presentation			
13:00 - 14:30	Lunch – Grandior Hotel Restaurant			
14:30 - 16:00	Parallel sessions 1			
	Room A - Session A1: Voltage Control in Distribution Systems	Room B - Session B1: Electrical Protections I	Room C - Session C1: Renewable Energy Sources	Room D - Session D1: Insulation Systems and Materials
16:00 - 16:30	Coffee break			
16:30 - 17:30	Parallel sessions 2			
	Room A - Session A2: Nuclear Education and Training	Room B - Session B2: Power and Voltage Quality I	Room C - Session C2: Smart Grids and Automation I	Room D - Session D2: Electromagnetic and Heat Applications I
19:00 - 23:00	Welcome party – Grandior Hotel			

Tuesday, May 17, 2016

9:00 - 10:00		Parallel sessions 3		
	Room A - Session A3: Power Systems Management, Optimization and Services	Room B - Session B3: Power Electronics	Room C - Session C3: Power Systems Apparatus and Devices	
10:00 - 10:30		Coffee break		
10:30 - 12:00		Parallel sessions 4		
	Room A - Session A4: Simulations and Experiments for Nuclear Power Plants Safety Enhancement	Room B - Session B4: Electrical Protections II	Room C - Session C4: High Voltage Tests and Measuring Techniques	Room D - Session D4: Electrical Machines and Drives
12:00 - 13:30		Lunch – Grandior Hotel Restaurant		
13:30 - 15:00		Parallel sessions 5		
	Room A - Session A5: Nuclear Research and Development I	Room B - Session B5: Diagnostics and Monitoring I	Room C - Session C5: Transmission and Distribution Systems	Room D - Session D5: Power Systems Optimization and Planning
15:00 - 15:30		Coffee break		
15:30 - 16:30		Parallel sessions 6		
	Room A - Session A6: Nuclear Research and Development II	Room B - Session B6: Diagnostics and Monitoring II	Room C - Session C6: Distribution System Operation with Distributed Renewable Sources	Room D - Session D6: Electromagnetic and Heat Applications II
19:00 - 23:00		Social evening - Botel Admiral		

Wednesday, May 18, 2016**9:00 - 10:00****Parallel sessions 7****Room A - Session A7:
Smart Grids and Automation II****Room B - Session B7:
Power and Voltage Quality II****Room C - Session C7:
Lighting Systems I****10:00 - 10:30****Coffee break****10:30 - 11:30****Parallel sessions 8****Room A - Session A8:
Power Systems Modelling and
Simulations****Room B - Session B8:
Electromagnetic Compatibility****Room C - Session C8:
Lighting Systems II****11:45 - 12:00****Room ABCD – Plenary session: Conference closing ceremony****12:00 - 13:30****Lunch – Grandior Hotel Restaurant****14:00 - 16:00****Walking guided city tour**

Conference Programme in Details

Monday, May 16, 2016

10:30 – 17:30 Participants registration

12:00 – 13:00 Conference opening and Keynote presentation

Room ABCD – Plenary session

Welcome speeches

K203 **Satisfying Consumer Needs**

Miles A. Redfern (University of Bath, United Kingdom)

13:00 – 14:30 Lunch

14:30 – 16:00 Parallel sessions 1

Room A – Session A1

Voltage Control in Distribution Systems

Chairman: Peter Braciník (University of Žilina, Slovakia)

I002 **Multi-Agent System Based Distributed Voltage Control in Medium Voltage Distribution Systems**

Ammar Arshad, Matti Lehtonen (Aalto University, Finland)

L059 **Medium and Low Voltage Control Strategies for a Smart Distribution Grid**

Kamil Korotkiewicz, Philippe Steinbusch, Marcel Ludwig, Felix Dorsemagen, Marcus Stötzel, Markus Zdrallek (University of Wuppertal, Germany)
Torben Braje (SAG GmbH, Germany)
Wolfgang Friedrich (Bilfinger Mauell GmbH, Germany)

L141 **Implementation of Q/U Function of Photovoltaic Power Plants in Low Voltage Distribution Networks**

Josef Hrouda, Frantisek Kysnar, Karel Prochazka, Karel Hojdar
(EGC-EnerGoConsult CB, s.r.o., Czech Republic)

L027 **Optimal Location of the Synchronous Condenser in Electric-Power System Networks**

Famous. O. Igbiovvia, Ghaeth Fandi, Zdeněk Müller, Jan Švec, Josef Tlustý
(Czech Technical University in Prague, Czech Republic)

L155 **The Reliability of the System with Wind Power Generation**

Urbanus F. Melkior, Martin Čerňan, Zdeněk Müller, Josef Tlustý
(Czech Technical University in Prague, Czech Republic)
Andrew G. Kasembe (CEPS a.s., Czech Republic)

Room B – Session B1

Electrical Protections I

Chairman: Petr Toman (Brno University of Technology, Czech Republic)

I206 **Technical Applicability and Economic Assessment Factors of Different Earth Fault Detection Methods in Medium Voltage Networks**

Lothar Fickert (TU Graz, Austria)

L132 **The Impact of Current Transformer Saturation on the Distance Protection**

Kinan Wannous, Petr Toman (Brno University of Technology, Czech Republic)

L119 **Differential Protection of Converter Transformers**

Krzysztof Solak, Waldemar Rebizant (Wroclaw University of Technology, Poland)
Ludwig Schiel (Siemens AG, Germany)

L009 **Distance Protection of Big Network Transformers**

Jiří Bermann, Martin Procházka (ABB s.r.o., Czech Republic)

L041 **Development of Negative Sequence Relay Model Processing IEC 61850-9-2 Sampled Values**

Tomas Bajanek, Stanislav Sumec (Brno University of Technology, Czech Republic)

Room C – Session C1
Renewable Energy Sources

Chairman: Petr Mastný (Brno University of Technology, Czech Republic)

L029 Electricity Generation from RES under Uncertainty

J. Sowinski, R. Tomaszewski, A. Wachtarczyk (Częstochowa University of Technology, Poland)

L150 Adaptive Control of Wind PMSG

Nikolay Djagarov, Zhivko Grozdev, Milen Bonev (Naval Academy, Bulgaria)

Julia Djagarova (Technical University Varna, Bulgaria)

Andrey Pazderin, Sergey Kokin (Ural Federal University, Russia)

L127 Modelling of Small Wind Power Plant with Savonius-Darrieus Rotor in the PSCAD

Michal Ptacek, Marek Kopicka, Tomas Pavelka, Lukas Radil

(Brno University of Technology, Czech Republic)

L118 Electrical and Heat Performance of Solar Concentrator with Tracking System

Marek Bálský, Rudolf Bayer (Czech Technical University in Prague, Czech Republic)

L151 Accelerated ageing of a-SiC:H/c-Si Photovoltaic Heterostructures

Juraj Packa, Milan Perný, Michal Váry, Miroslav Mikolášek, Vladimír Šály

(Slovak University of Technology, Slovakia)

Jozef Huran (Slovak Academy of Sciences, Slovakia)

L074 Fuzzy Logic Controller for Large Grid-Integrated Wind Farm under Variable Wind Speeds

Mohammed Al-Saffar, Petr Musilek (University of Alberta, Canada)

Room D – Session D1
Insulation Systems and Materials

Chairman: Jan Hlaváček (Czech Technical University in Prague, Czech Republic)

L038 Dielectric Behaviour of Gaseous Insulation with Synthetic Air at AC Stress

Rainer Haller, Petr Martinek, Roman Hamar, Eva Müllerova

(University of West Bohemia, Czech Republic)

L136 Cable Insulation Properties Changes Through Nanofillers

Ondřej Veselý, Václav Mentlík (University of West Bohemia, Czech Republic)

L053 Influence of Thermal Aging on Electrical Properties of Inhomogeneous Dielectric Material

Jaroslav Hornak, Lukas Harvanek, Pavel Totzauer, Pavel Trnka

(University of West Bohemia, Czech Republic)

L054 Effect of Inhibitors on Thermal Degradation of Vegetable Oils

Pavel Trnka, Anna Čejková, Václav Mentlík, Pavel Totzauer, Lukáš Harvánek, Tetjana Tomášková

(University of West Bohemia, Czech Republic)

L055 Dielectric Properties of Sunflower, Rapeseed and Commonly Used Mineral Oil

Jiří Ulrych, Václav Mentlík (University of West Bohemia, Czech Republic)

L067 The Effect of Fillers and Barrier on Electrical Tree

Lukáš Harvánek, Jaroslav Hornak, Václav Mentlík, Anna Čejková

(University of West Bohemia, Czech Republic)

16:00 – 16:30 Coffee break

16:30 – 17:30 Parallel sessions 2

Room A – Session A2
Nuclear Education and Training

Chairman: Jana Jiříčková (University of West Bohemia, Czech Republic)

I114 Nuclear Education and Training at Low Power Research Reactors for National and International Students and Trainees

Lubomir Sklenka (Czech Technical University in Prague, Czech Republic)

L083 Experimental Studio Data Acquisition System at VR-1 Reactor

Jan Rataj, Lubomir Sklenka, Filip Fejt, Ondrej Huml

(Czech Technical University in Prague, Czech Republic)

S202 Education, Training, Research and Development Activities in the Research Centre Rez and the SUSEN project - Unique opportunities for Czech scientist and engineers

Martin Ruscak (Research Centre Rez, Czech Republic)

**Room B – Session B2
Power and Voltage Quality I**

Chairman: Lothar Fickert (TU Graz, Austria)

L021 The Study of Harmonic Reduction in Light Emitting Diode (LED) Roadway Lighting System

Suntiti Yoomak, Atthapol Ngaopitakkul (King Mongkut's Institute of Technology Ladkrabang, Thailand)

L025 Current and Voltage Harmonics in High-Rise Prefabricated Buildings

Václav Kůs (University of West Bohemia, Czech Republic)

L131 Voltage Quality in the Medium Voltage Distribution Grid with Connected Wind Power Plants

Martin Kašpírek (E.ON Czech Republic, Czech Republic)

L133 Transformation Matrices of Different Transformer Types in Voltage Dips Direction Finder

Lesław Ładniak, Tomasz Sikorski, Beata Solak (Wrocław University of Technology, Poland)

**Room C – Session C2
Smart Grids and Automation I**

Chairman: Miloslava Tesařová (University of West Bohemia, Czech Republic)

I098 Concept of Fast Charging Stations with Integrated Accumulators - Assessment of the Impact for Operation

Petr Mastny, Jan Moravek, Michal Vrana (Brno University of Technology, Czech Republic)

L007 E-mobility and Multiagent Systems in Smart Grid

Michal Morte (UJV Rez, a.s., Czech Republic)

L023 Agent Based Bidding Architecture in Electricity Markets for EVs as V2G and G2V

Farhan H. Malik, Matti Lehtonen (Aalto University, Finland)

**Room D – Session D2
Electromagnetic and Heat Applications I**

Chairman: Jan Kyncl (Czech Technical University in Prague, Czech Republic)

L017 Thermal Analysis of Electromagnetic Levitation Coil

Payam Shams Ghahfarokhi, Ants Kallaste (Tallinn University of Technology, Estonia)
Anouar Belahcen, Toomas Vaimann (Aalto University, Finland)

L096 Modeling and Computer Simulation of Electrical Separation

Jaroslav Džmura, Jaroslav Petráš, Jozef Balogh (Technical University of Košice, Slovakia)
Milan Bernát (University of Prešov, Slovakia)

L045 Experimental Design of the Cold Crucible

D. Roť, S. Jirinec, J. Jirinec, J. Kozeny (University of West Bohemia, Czech Republic)
I. Poznyak (Saint-Petersburg Electrotechnical University "LETI", Russia)

L090 Advanced Measurements for Analysis and Data Acquisition from the Cold Crucible

David Roť, Jakub Jirinec, Stanislav Jirinec, Jiri Kozeny (University of West Bohemia, Czech Republic)

19:00 – 23:00 Welcome party – Grandior Hotel

9:00 – 10:00 Parallel sessions 3

Room A – Session A3
Power Systems Management, Optimization and Services

Chairman: Matti Lehtonen (Aalto University, Finland)

L024 The Weighted Kernel Density Estimation Methods for Analysing Reliability of Electricity Supply

Miroslaw Kornatka (Częstochowa University of Technology, Poland)

L130 Development of DGA Indicator for Estimating Risk Level of Power Transformers

Gints Poiss (Riga Technical University, Latvia)

L073 Improving Energy Efficiency of Analog-to-digital Conversion in Environmental Monitoring Systems

Obiora Sam Ezeora, Jana Heckenbergerova (University of Pardubice, Czech Republic)

Petr Musilek (University of Alberta, Canada)

L112 Optimized Residential Load Scheduling Under User Defined Constraints in a Real-time Tariff Paradigm

Madia Safdar, Mashhood Ahmad (National University of Sciences & Technology, Pakistan)

Amjad Hussain, Matti Lehtonen (Aalto University, Finland)

Room B – Session B3
Power Electronics

Chairman: Václav Kůs (University of West Bohemia, Czech Republic)

L081 Sub-Hexagonal Centre PWM with Variable Switching Sequence for Dual Inverter

Martin Votava, Tomas Glasberger (University of West Bohemia, Czech Republic)

L154 LCL Filter Design for Interconnection Inverter of Distributed Source to Utility Grids

Viktor Valouch (Czech Technical University in Prague, Czech Republic)

Martin Bejvl (Academy of Sciences of the Czech Republic, Czech Republic)

L044 DC Link Voltage Ripple of Voltage-Source Active Rectifiers

Vaclav Kus, Tereza Josefova (University of West Bohemia, Czech Republic)

Room C – Session C3
Power Systems Apparatus and Devices

Chairman: Zdeněk Vostracký (University of West Bohemia, Czech Republic)

L012 Predicting Arc Faults in Distribution Switchgears

G. A. Hussain, M. Shafiq, M. Lehtonen (Aalto University, Finland)

L051 Treatment of Near-electrode Regions in a Simple Model of Blasted Electric Arc

Josef Šenk, Ivana Jakubová, Ilona Lázníčková (Brno University of Technology, Czech Republic)

L056 Reduced Breaking Capability of Circuit Breakers Within Operations with Delayed Current Zeros

Vladimir Vajnar, Zdenek Vostracky (University of West Bohemia, Czech Republic)

L088 Electromagnetic Susceptibility Tests for Low Voltage Circuit Breakers and Motor Operators

Pavel Karafiát, Jiří Gurecký (VŠB – Technical University Ostrava, Czech Republic)

10:00 – 10:30 Coffee break

Room A – Session A4
Simulations and Experiments for Nuclear Power Plants Safety Enhancement

Chairman: Martin Ševeček (Czech Technical University in Prague, Czech Republic)

I201 Experience of VVER Reactors Safety Evaluation and Improvements - Validation of Thermal-Hydraulic Codes Against Experimental Data Focused on VVER Design

Martin Blaha (TES s.r.o., Czech Republic)

L077 Deterministic and Stochastic Neutron Cross-section Generation for PARCS Applied to VR-1 Reactor

Filip Fejt (Czech Technical University in Prague, Czech Republic)

L089 2D Full-Core VVER-1000 Calculation in Serpent

Jan Frybort (Czech Technical University in Prague, Czech Republic)

L124 Nuclear Data Generation Sensitivity Analysis for VVER Reactor Dynamic Benchmark

Filip Novotny, Jitka Matejkova, Karel Katovsky (Brno University of Technology, Czech Republic)

Room B – Session B4
Electrical Protections II

Chairman: Jaroslava Orságová (Brno University of Technology, Czech Republic)

I204 Protection Concepts for Low-Current Faults

Mohamed F. Abdel-Fattah (Reykjavik University, Iceland)

L121 Nelder Mead Method Used in Protection Setting Optimization

Jakub Ehrenberger, Jan Švec (Czech Technical University in Prague, Czech Republic)

L108 The Effects of Harmonics On Overcurrent Relays

Kinan Wannous, Petr Toman (Brno University of Technology, Czech Republic)

L008 Two phase distribution system for railways

Martin Procházka (ABB s.r.o., Czech Republic)

L040 Software Tools for Processing of Sampled Values Transmitted via IEC 61850-9-2 Protocol in LabView

Tomas Bajanek, Stanislav Sumec (Brno University of Technology, Czech Republic)

Room C – Session C4
High Voltage Tests and Measuring Techniques

Chairman: Rainer Haller (University of West Bohemia, Czech Republic)

I143 Influence of Rogowski Coil Shielding to Measurement Results

Jan Hlavacek, Radek Prochazka, Martin Knenicky, Karel Draxler
 (Czech Technical University in Prague, Czech Republic)
 Renata Styblikova (Czech Metrology Institute, Czech Republic)

L031 Reaction of Surge Protection Devices on Overvoltage Signals with Different Steepness

O. Řezníček, M. Hromádka, J. Laurenc (University of West Bohemia, Czech Republic)

L032 Utilization of skewness in statistical evaluation of breakdown voltage

Frantisek Kovac (University of West Bohemia, Czech Republic)

L033 Simulation of the High Voltage Impulse Generator

Karel Veishepl (University of West Bohemia, Czech Republic)

L142 Determination of Frequency Characteristics of High Voltage Dividers in Frequency Domain

Radek Prochazka, Jan Hlavacek, Martin Knenicky, Mahmoud Rateb
 (Czech Technical University in Prague, Czech Republic)

Room D – Session D4
Electrical Machines and Drives

Chairman: Toomas Vaimann (Tallinn University of Technology, Estonia)

L100 Sensorless Control of Permanent Magnet Synchronous Motor with High Frequency Injection and FCS-MPC

Vendula Glasbergerova, Tomas Glasberger (University of West Bohemia, Czech Republic)

L039 Luenberger Observer Application in Control of Switched Reluctance Motor

Pavel Brandstetter, Ondrej Petřtyl, Jiri Hajovsky
(VSB - Technical University of Ostrava, Czech Republic)

L005 Noise Measurement of Turbo-generators

Vladimír Zábranský (BRUSH SEM s.r.o., Czech Republic)
Olga Tůmová (University of West Bohemia, Czech Republic)

L028 Mechanical Vibration Analysis of Induction Machine Under Dynamic Rotor Eccentricity

Jan Sobra (University of West Bohemia, Czech Republic)
Toomas Vaimann, Anouar Belahcen (Tallinn University of Technology, Estonia)

L022 Induction Motor Modeling Using COMSOL Multiphysics

Stanislav Kocman, Pavel Pečínka, Tomáš Hrubý
(VŠB – Technical University of Ostrava, Czech Republic)

L061 Power System Studies of Electrical Drive Test Field Using EMTP-ATP software

Jan Dudek, Petr Orság, Stanislav Kocman (VSB - Technical University of Ostrava, Czech Republic)

12:00 – 13:30 Lunch

13:30 – 15:00 Parallel sessions 5

Room A – Session A5
Nuclear Research and Development I

Chairman: Karel Katovský (Brno University of Technology, Czech Republic)

I140 Measurement of (n,p) Cross Section for Some Structural Materials at 14.2 MeV

N. L. Singh, Rajnikant Makwana, S. Mukherjee, A. Chatterjee
(The Maharaja Sayajirao University of Baroda, India)

L099 Modelling of DD Generator Neutron Source for R&D Applications at VR-1 Reactor Facility

Tomas Bily (Czech Technical University in Prague, Czech Republic)

L091 Affecting of the Spent Fuel Parameters by Separation of Selected Nuclides

Jan Frybort, Lenka Heraltova (Czech Technical University in Prague, Czech Republic)

L129 Measurements of the Thermal Conductivity of Uranium Dioxide by the Flashing Method

Martin Sevecek (Czech Technical University in Prague, Czech Republic)
Mojmir Valach (UJV Rez, a.s., Czech Republic)

L093 Study of Doppler Broadening in Neutron Irradiated ADS Related Materials Using Positron Annihilation Spectroscopy

H. S. Palsania, Naresh Chejara, Narendra Jakhar, Dalpat Meena, S. K. Gupta, Aruna Bharti, V. Kumar
(University of Rajasthan, India)
Y. K. Vijay (Vivekananda Global University, India)

Room B – Session B5
Diagnostics and Monitoring I

Chairman: Radek Procházka (Czech Technical University in Prague, Czech Republic)

L013 Laboratory High Voltage Capacitor with Low PD Level and Low Dissipation Factor

Michal Krbal, Jan Škoda, Stanislav Sumec, Jaroslav Štěpánek
(Brno University of Technology, Czech Republic)

L134 Analysis Of Partial Discharge Signals In Medium Voltage XLPE Cables

Zeeshan Ahmed, Ghulam Amjad Hussain, Matti Lehtonen (Aalto University, Finland)
Lukas Varacka, Jozef Kudelcik (University of Zilina, Slovakia)

L043 Some Aspects of Measurement of Corona Discharge

Katerina Cerna, Jiri Laurenc (University of West Bohemia, Czech Republic)

L076 Corona Pulse Sequence Analysis at DC voltage

Josef Pihera, Rainer Haller, Ondřej Kozák, Jaroslav Hornak
(University of West Bohemia, Czech Republic)

L115 Approximation of Measurement of Leakage Current in Insulation System of Generators

Bohumil Paslavsky, Frantisek Kovac (University of West Bohemia, Czech Republic)

L064 Assessment of Insulation Resistance from Recovery Voltage Data

Vladimír Ďurman, Michal Váry (Slovak University of Technology, Slovakia)

**Room C – Session C5
Transmission and Distribution Systems**

Chairman: Jan Švec (Czech Technical University in Prague, Czech Republic)

L1010 Phase Current Asymmetry on the Double-circuit Very High Voltage Overhead Transmission Line

Tomáš Nazarčík (University of West Bohemia, Czech Republic)
Barry Rawn (Brunel University London, United Kingdom)

L152 Fault Resistance Investigations for Faults in Double-Circuit Double-Fed Transmission Lines

Mohamed F. Abdel-Fattah (Reykjavik University, Iceland)

L034 Evaluation of Power Distribution along Interconnected Middle Voltage Feeders

Roman Vykuka, Miloslava Tesařová (University of West Bohemia, Czech Republic)

L071 WAMS Hybrid Configuration for Real Time Voltage Stability Monitoring Application

Lesnanto Multa Putranto, Ryoichi Hara, Hiroyuki Kita, Eiichi Tanaka (Hokkaido University, Japan)

L035 Power Hardware-in-the-loop Test for Cyber Physical Renewable Energy Infeed

Ziqian Zhang, Lothar Fickert (Graz University of Technology, Austria)
Yongming Zhang (Shanghai Institute of Quality, China)

L092 The Effect of Conductor Diameter upon the Thickness of Icing

František Janíček, Fedor Lendák, Roman Gogola, Igor Halán
(Slovak University of Technology, Slovakia)

**Room D – Session D5
Power Systems Optimization and Planning**

Chairman: Miles A. Redfern (University of Bath, United Kingdom)

L078 Heterogeneous Ensembles for Short-Term Electricity Demand Forecasting

Grzegorz Dudek (Czestochowa University of Technology, Poland)

L126 Electricity Demand Prediction by Multi-Agent System with History-Based Weighting

Artur Opalinski (Gdansk University of Technology, Poland)
Grzegorz Dudek (Czestochowa University of Technology, Poland)

L036 Algorithm for the Adequacy Discrete Optimization by Using Dual Estimates When Planning the Development of Electric Power Systems

Dmitry Krupenev, Sergei Perzhabinsky (Melentiev Energy Systems Institute SB RAS, Russia)

L111 Load-flow and Short-circuit Calculation in Sokolnice Distribution Network over Reconstruction

Vaclav Vycital, Petr Toman (Brno University of Technology, Czech Republic)
Martin Rampl (E.ON Czech Republic, Czech Republic)

L107 The Possibilities to Improve Local Electrical Power Grid: Case of TUT Campus

Victor Astapov, Ivo Palu (Tallinn University of Technology, Estonia)

L145 The Role of Pumped Storage Power Plants in the Power System Operation

Miroslav Vítek, Tomáš Králík, Jiří Tůma (Czech Technical University in Prague, Czech Republic)

15:00 – 15:30 Coffee break

Room A – Session A6
Nuclear Research and Development II

Chairman: Filip Novotný (Brno University of Technology, Czech Republic)

I147 A Review of Nuclear Waste Transmutation Using Accelerator Beams up to Several GeV

Vinod Kumar, Ambika Tundwal (G.G.S. Indraprastha University, India)
Karel Katovsky (Brno University of Technology, Czech Republic)
Manish Sharma (S. S. Jain Subodh Post Graduate College, India)

L109 Determination of the Neutron Flux Inside Spallation Target with the Use of Threshold Activation Detectors

M. Zeman, K. Katovsky (Brno University of Technology, Czech Republic)
J. Adam, A. A. Baldin, W. I. Furman, J. Khushvaktov, A. A. Solnyshkin, M. Suchopar, P. Tichy, V. M. Tsoupko-Sitnikov, S. I. Tyutyunnikov, R. Vespalec, J. Vrzalova, V. Wagner, L. Zavorka, P. Zhivkov (Joint Institute for Nuclear Research, Russia)

L110 Determination of the Neutron Flux by the Temperature Differences at the Massive Spallation Uranium Target QUINTA

J. Svoboda, K. Katovsky, M. Zeman (Brno University of Technology, Czech Republic)
J. Adam, A. A. Baldin, J. Khushvaktov, P. Tichy, A. A. Solnyshkin, S. I. Tyutyunnikov, R. Vespalec (Joint Institute for Nuclear Research, Russia)

Room B – Session B6
Diagnostics and Monitoring II

Chairman: Radek Procházka (Czech Technical University in Prague, Czech Republic)

I148 TL Tests Results for C120 Insulators

Rafał Sobota (Czestochowa University of Technology, Poland)

L146 The Behaviour of Insulator Strings under Dry and Wet Conditions

Pavel Janyš, Radek Procházka (Czech Technical University in Prague, Czech Republic)

L052 The Benefits of Using Online Diagnostic Tools for Portable Diagnostic Device

Pavel Totzauer, Jaroslav Hornak, Pavel Trnka (University of West Bohemia, Czech Republic)

Room C – Session C6
Distribution System Operation with Distributed Renewable Sources

Chairman: Karel Noháč (University of West Bohemia, Czech Republic)

L125 Voltage Sensitivity to Power Flows Related to Distributed Generation

Tomas Kolacia, Jiri Drapela (Brno University of Technology, Czech Republic)

L120 Advanced Functions of Network Support Based on ENTSO - E NC RFG in the Czech Technical Standards

Ivan Šperlín (ČEZ Distribuce, a.s., Czech Republic)
Jiří Gurecký (VŠB – Technical University Ostrava, Czech Republic)

L123 Advantageous Positioning of Wind Turbine Generating System in MV Distribution Network

Ghaeth Fandi, Famous O. Igbinovia, Jan Švec, Zdeněk Müller, Josef Tlustý (Czech Technical University in Prague, Czech Republic)

Room D – Session D6
Electromagnetic and Heat Applications II

Chairman: Ilona Lázníčková (Brno University of Technology, Czech Republic)

L057 The Behaviour of Heating Coil During Regulation

J. Lucak, S. Jirinec, J. Kozeny (University of West Bohemia, Czech Republic)

L097 Model and Optimization of Induction Heating for Annealing Rotationally Symmetrical Bodies

Lubomír Musálek, Zdeněk Novák, Lukáš Žák, Libor Straka
(Czech Technical University in Prague, Czech Republic)

L079 The Correction of the Influence of Wind on Thermographic Measurement

Jan Kyncl, Lubomír Musálek, Lavr Vetoschkin (Czech Technical University in Prague, Czech Republic)
Jan Bryscejn (Academy of Sciences of Czech Republic, Czech Republic)
Jan Sova (Workswell s.r.o., Czech Republic)

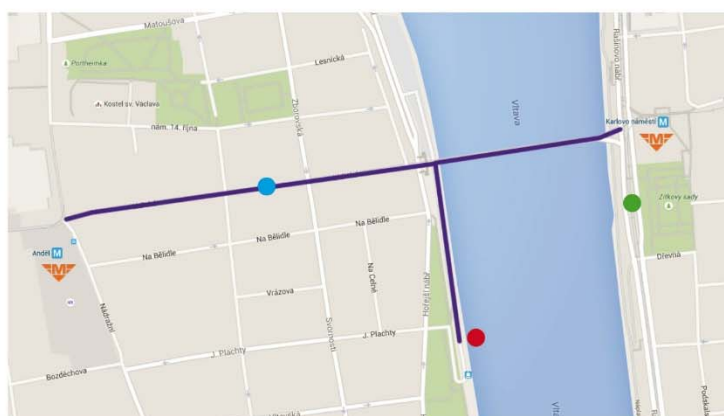
L060 Thermal Analysis of Fuel Cell NEXA Ballard Power System

Jan Vaculík, Michal Jurík (E.ON Česká republika, s.r.o., Czech Republic)

L075 Evaluation of Thermal Comfort of the Internal Environment in Smart Home Using Objective and Subjective Factors

Jan Vanus, Radek Martinek, Petr Bilik, Jan Zidek, Iveta Skotnicova
(VŠB – Technical University Ostrava, Czech Republic)

19:00 – 23:00 Social evening - Botel Admiral
(Hořejší nábřeží, Prague 5 – Smíchov)



- **Tram Stop “Palackého náměstí”**
from Bílá labuť: tram No. 3
- **Tram Stop “Zborovská”**
from Anděl: tram No. 4, 7, 10, 14, 16
from Bílá labuť: tram No. 14
- **Botel Admirál**
- M **Metro stations**
“Anděl” - exit Anděl
“Karlovo náměstí” - exit Palackého náměstí

Meeting point for interested parties: GRANDIOR hotel - reception desk at 18.20 hrs.

9:00 – 10:00 Parallel sessions 7

Room A – Session A7
Smart Grids and Automation II

Chairman: Zdeněk Müller (Czech Technical University in Prague, Czech Republic)

L014 Socio-political View of Smart Grid Implementation - a Survey

Daniela Spiesova (Czech University of Life Sciences Prague, Czech Republic)

Dusan Maga (Czech Technical University in Prague, Czech Republic)

L095 New Ways of Smart Electric Installation Control by Human Interfaces

Jaroslav Petráš, Jozef Balogh, Jaroslav Džmura (Technical University of Košice, Slovakia)

L070 Design and Simulation of Hybrid System for Public Lighting Power Supply

Martin Vojtek, Michal Kolcun, Miroslav Mikita, Michal Špes (Technical University of Košice, Slovakia)

L004 Bad Practices and Most Frequent Mistakes in IPv4 Networks Implementation in Smart Electrical and Automatic Systems. Cyber Security in Distribution Smart Grid.

Robert Czechowski (Wroclaw University of Technology, Poland)

Room B – Session B7
Power and Voltage Quality II

Chairman: Michal Váry (Slovak University of Technology in Bratislava, Slovakia)

I205 Power Quality Challenges in Future Distribution Networks

Jan Meyer (TU Dresden, Germany)

L094 Power Quality Issues Related to Power Flow Control in Systems with Renewable Energy Micro Sources

Jan Moravek, Jiri Drapela, Vojtech Wasserbauer, Petr Mastny

(Brno University of Technology, Czech Republic)

L101 Common Three Phase Active Power Definition and its Questionable Suitability for the Smart Grid Meters

Jan Kraus, Tomáš Bedrník (Technical University of Liberec, Czech Republic)

Leoš Kukačka (Université de Toulouse, LAPLACE, France)

Room C – Session C7
Lighting Systems I

Chairman: Marek Bálský (Czech Technical University in Prague, Czech Republic)

L082 Static Model of LED Behaviour Depending on Operating Conditions

Tomas Pavelka, Michal Ptacek, Petr Baxant (Brno University of Technology, Czech Republic)

L072 Power Quality Analysis in Light Emitting Diode Lamps

S. Ananwattanaporn, A. Ngaopitakkul

(King Mongkut's Institute of Technology Ladkrabang, Thailand)

L105 Comparison of Light Sources for Household Use due Circadian Effect

Jaroslav Štěpánek, Jan Škoda, Michal Krbal, Vojtěch Wasserbauer

(Brno University of Technology, Czech Republic)

L144 New Outdoor Lighting - Operation and Maintenance

Ivo Ullman (ČEPS, a.s., Czech Republic)

Petr Bos (VŠB - Technical University of Ostrava, Czech Republic)

Jiří Ullman (NPP- Temelín, Skupina ČEZ, Czech Republic)

10:00 – 10:30 Coffee break

Room A – Session A8
Power Systems Modelling and Simulations

Chairman: Mohamed F. Abdel-Fattah (Reykjavik University, Iceland)

L046 Load Flow Analysis in Alternative Tools Using Equations, Physical and Block Diagrams

Karel Nohac (University of West Bohemia, Czech Republic)

Vladislav Sitar (Jan Evangelista Purkyně University in Ústí nad Labem, Czech Republic)

Jan Veleba (ABB s.r.o., Czech Republic)

L153 Phase Shifter Models for Steady State Analysis

Tomasz Okon, Kazimierz Wilkosz (Wrocław University of Technology, Poland)

L086 The Mathematical Model of the Power Transformer Considering the Parasitic Capacitances

Michal Baherník, Martina Látková, Dávid Kaprál, Peter Bracínik (University of Žilina, Slovakia)

L117 Control Possibilities for Island Operation in City of Pilsen

Vaclav Muzik, Zdenek Vostracky, Martin Strelec (University of West Bohemia, Czech Republic)

Barry Rawn (Brunel University London, United Kingdom)

Room B – Session B8
Electromagnetic Compatibility

Chairman: Jiří Drápel (Brno University of Technology, Czech Republic)

L085 Influence of Electromagnetic Interference on Time-domain Spectroscopy of Magnetic Nanofluids

Roman Cimbala, Lukáš Kruželák, Samuel Bucko, Juraj Kurimský, Michal Kosterec

(Technical University of Košice, Slovakia)

L058 Experimental observation of interaction between radiofrequency electromagnetic field and blood tissue

Michal Kosterec, Juraj Kurimský, Roman Cimbala, Martin Folta, Lukáš Kruželák, Zsolt Čonka

(Technical University of Košice, Slovakia)

Blažena Vargová (Slovak Academy of Sciences, Slovakia)

Room C – Session C8
Lighting Systems II

Chairman: Marek Bálský (Czech Technical University in Prague, Czech Republic)

L049 Algorithmic Solution of Indoor Luminaire Placement

Rudolf Bayer, Michal Brejcha, Zuzana Panská

(Czech Technical University in Prague, Czech Republic)

L068 Suggestion of the Methodology for Verifying the Outputs of Different Measuring Groups Evaluating Light Parameters of Public Lighting

Petr Bos, Barbara Heřtýnová, Richard Baleja, Karel Sokanský, Tomáš Novák

(VŠB - Technical University of Ostrava, Czech Republic)

L116 Preparation of Light Standards in Photometry

Theodor Terrich (Czech Technical University in Prague, Czech Republic)

L113 The Evaluation of Light Parameters in the Public Lighting in the Sphere of Mesopic Vision

Richard Baleja, Petr Bos, Karel Sokanský, Tomáš Novák

(VŠB – Technical University Ostrava, Czech Republic)

11:45 – 12:00 Conference closing ceremony

Room ABCD – Plenary session

Concluding words from the Conference chair

12:00 – 13:30 Lunch

14:00 – 16:00 Walking guided city tour

(Meeting point: GrandioR hotel reception at 13:30)

Notes to presentations

Presentation types and times

K	Keynote presentation	
I	Invited presentation	20 minutes for presentation + 5 minutes for discussion
L	Standard presentation	10 minutes for presentation + 5 minutes for discussion
S	Special presentation	10 minutes for presentation + 5 minutes for discussion

We kindly ask presenting authors to be present in the room at least 10 minutes before the session starts. Please introduce yourself to the chairman and deliver your presentation (USB drive is expected).

You are invited to EPE 2017 already now.

2017 18th International Scientific Conference on Electric Power Engineering (EPE) will be held from **May 17 to May 19, 2017** at hotel **Dlouhé Stráně** in **Kouty nad Desnou**, in the Jeseníky mountains, Czech Republic.

The conference will be organized by **VŠB - Technical University of Ostrava**, Department of Electrical Power Engineering, Faculty of Electrical Engineering and Computer Science.

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