Final Programme

2025 25th International
Scientific Conference on

ELECTRIC POWER ENGINEERING (EPE)

May 27-29, 2025, Prague, Czech Republic

CZECH TECHNICAL UNIVERSITY IN PRAGUE
Faculty of Electrical Engineering
Department of Electrical Power Engineering

and

BRNO UNIVERSITY OF TECHNOLOGY
Faculty of Electrical Engineering and Communication
Department of Electrical Power Engineering

EPE 2025

Welcome

Dear Colleagues,

It is our great pleasure to welcome you to the 25th International Scientific Conference on Electric Power Engineering (EPE 2025). This conference continues its long-standing tradition as a platform for sharing research and developments in the field of energy systems, with a particular focus on electrical power engineering.

In previous years, EPE conferences have been organized in rotation by two leading technical universities in the Czech Republic: VŠB – Technical University of Ostrava and Brno University of Technology. This year, we are pleased to return to Prague, where the event is co-organized by Brno University of Technology and the Czech Technical University in Prague. We believe this collaboration offers a unique opportunity to combine professional exchange with the experience of Prague's historical city center, including UNESCO-listed landmarks.

On behalf of the organizing committee, which has been working diligently to bring this event to life, we warmly welcome all participants. Our goal is to create an inspiring and collegial environment for the exchange of scientific ideas, technological innovations, and real-world applications in the field of electric power engineering.

We hope you will enjoy both the scientific programme and the chance to explore the city of Prague. If you have any questions or need assistance during your stay, please do not hesitate to contact any member of the organizing team.

Thank you for joining us, and we wish you a successful and enjoyable conference experience.

Sincerely,
The EPE 2025 Organizing Committee

The Conference Programme

Tuesday, May 27, 2025 - 1st conference day	
10:00	participant registration
11:00 - 12:30	lunch
12:30 - 14:30	**conference opening, keynote and partners presentation**
14:30 - 15:30	session 1 **Electrical Networks**
15:30 - 16:00	coffee break
16:00 - 17:30	session 1 **Electrical Networks**
19:00 - 21:00	welcome party - *Grandior Hotel Prague*

Wednesday, May 28, 2025 - 2nd conference day	
09:30 - 10:30	session 1 **Electrical Networks**
10:30 - 11:00	coffee break
11:00 - 12:30	session 1 **Electrical Networks**
12:30 - 14:00	lunch
14:00 - 15:45	session 2 **Electrotechnology**
15:45 - 16:15	coffee break
16:15 - 17:15	session 3 **Electrical Engineering and Light**
19:30 - 23:00	social evening - *Botel Admirál, Hořejší nábřeží, Praha 5 - Smíchov*

Thursday, May 29, 2025 - 3rd conference day	
09:00 - 10:30	session 4 **Nuclear Energy and Radiation Applications**
10:30 - 11:00	coffee break
11:00 - 11:30	session 5 **Power Plants**
11:30 - 11:45	conference closing ceremony
11:45 - 13:15	lunch

the programme is subject to change

The Conference Programme in Detail

Tuesday, May 27, 2025, 12:30 - 14:30
conference opening, keynote presentation and partners presentation

	Conference opening *Zdeněk Müller, Petr Toman*
	Connection process automation – EG.D experience ***Tomáš Mendl*** *(EG.D, s.r.o.)*
	Cybersecurity in Energy Sector ***Petr Karafiát*** *(Teplárna Kladno, s.r.o.)*
	Optimization of high-voltage switchgear with regard to customer requirements and environmental impact ***Josef Černohous*** *(ABB)*

Tuesday, May 27, 2025, 14:30 - 15:30
session 1 - Electrical Networks

1	**Operational elimination of high-voltage line overloads** ***Pawel Pijarski,*** *Adrian Belowski, Lubomir Bena*
2	**PV hosting capacity of distribution networks** ***Matti Lehtonen****, Verner Puvi, Samar Fatima, Mahdi Pourakbari-Kasmaei*
4	**Enhanced Transient Control of Grid-Forming Inverters: A Dual-Objective Strategy for Power Angle Stabilization and Fault Current Limiting** *Jiawei Man, Chuang Liu, Rakhmonov Ikromjon Usmonovich, Rutian Wang, Heling Yang,* ***Junrui Chen****, Mingyao RenCong Sun, Zhenglong Sui*
6	**Impedance Analysis of Low-Frequency Oscillation in Weak Grids with Multiple Virtual Synchronous Generators** ***Heling Yang****, Youtian Ma, Cheng Zhong, Ziqian Zhang, Robert Schuerhuber, Junrui Chen*

15:30 - 16:00 coffee break

Tuesday, May 27, 2025, 16:00 - 17:30
session 1 - Electrical Networks

8	**Evaluation of Grid-Connected Converter Dynamics on DFT-Based Relay Protection** ***Mingyao Ren***, *Junrui Chen, Ziqian Zhang, Jiang Ding, Lothar Fickert, Robert Schuerhuber, Chuang Liu*
15	**Frequency control in simulated interconnected systems** ***Radoslav Strenk***, *Marek Roch*
16	**Analysis of the Fault Current Distribution Between two Ground Wires on Overhead Power Lines** ***Jozef Bendik***, *Matej Cenky, Anton Belan, Zaneta Eleschova*
21	**Grid Frequency Support from Inverter-based Resources** ***Stanislav Macejko***, *Karel Maslo, Jan Koudelka, Branislav Batora, Tomas Haba, Rui Pestana*
22	**Dynamic Model of STATCOM Devices for Damping of Power System Oscillations** *Stanislav Macejko, Karel Maslo,* ***Martin Lukes***, *Oldrich Rychly*
40	**Smart Meters in Smart Grid KRG Network An Overview** ***Dana Bahram Khudhur***, *Zdeněk Müller*

19:00 - 21:00 welcome party - *Grandior Hotel Prague*

Wednesday, May 28, 2025, 09:30 - 10:30
session 1 - Electrical Networks

23	**Advanced Energy Data Utilization for Campus Grid Analysis** ***Radim Dvorak**, Matej Vrtal, Vit Krcal, Petr Toman, Radu Plamanescu, Mihaela Albu*
27	**Analysis of Voltage Stability in the Eastern Part of the Slovak Transmission System** ***Ivan Bednárik**, Zaneta Eleschova, Anton Belan, Jozef Bendik, Matej Cenky*
28	**Simulation-based study of harmonics propagation in interconnected power grids** ***Tomas Sedivy**, Jiri Drapela, Frantisek Rajsky*
31	**Analysis of Conditions in MV Distribution Network under Simultaneous Unbalanced Faults Operation** ***Jan Koudelka**, Karel Maslo*

10:30 - 11:00 coffee break

Wednesday, May 28, 2025, 11:00 - 12:30
session 1 - Electrical Networks

33	**Transmission overhead line capacitance: Calculation approaches incorporating grounding wire** ***Tomas Sedivy**, Jiri Drapela, Vaclav Vycital*
34	**Faulted Zone Identification in Power Distribution Networks Using Synchrophasor Measurements** ***Obed Muhayimana**, Petr Toman, Silas Tuyishime*
36	**Development of PI-section-based model of transmission overhead line for disturbance propagation studies** ***Anthony Kelechi Aluge**, Tomas Sedivy, Jiri Drapela*
37	**Using Network Equivalents for Dynamic Stability Calculations** *Karel Maslo, Zsolt Conka, **Peter Kadar***
41	**The KRG GRID Network Comparison Between Two Different Years 2013 and 2024** ***Dana Bahram Khudhur**, Zdeněk Müller*

12:30 - 14:00 lunch

Wednesday, May 28, 2025, 14:00 - 15:45
session 2 - Electrotechnology

7	**Field Experience in Application of Vibroacoustics for Power Transformers Diagnostics** ***Michal Kunicki***, *Daria Wotzka, Michal Koziol, Lukasz Nagi, Sebastian Borucki, Ireneusz Urbaniec*
11	**Achievement of Fast Rise Time Pulses Using Conventional Impulse Generator** ***Tereza Krejnicka***, *Zdenka Benesova, Rainer Haller, Petr Martinek*
13	**Behavior of Chosen Environmentally Influenced Electrical Cables** *Juraj Packa,* ***Vladimir Saly***, *Vladimir Kujan*
20	**FHA-Model Based Comparison of Different Control Techniques for Wireless Power Transfer Systems** ***Martin Schmoelz***, *Michael Patt*
24	**Additional losses calculation in dry-type transformer** ***Vojtěch Vurm***, *Stanislav Kroták, Michal Svoboda, Michal Knedlík, David Rot, Tomáš Cihla*
26	**Three-Winding Transformer in Symmetrical Components** *Zaneta Eleschova, Anton Belan, Jozef Bendik, Matej Cenky, Boris Cintula,* ***Ivan Bednarik***
42	**Application of the DMDC method for a dynamic model of Water Management Infrastructure (WMI)** ***Jiří Ehrlich***, *Jakub Suchý*

15:45 - 16:15 coffee break

Wednesday, May 28, 2025, 16:15 - 17:15
session 3 - Electrical Engineering and Light

3	**Overview of Open-Source PoS Blockchain Platforms Using Smart Contracts for Energy Data Management** *Martin Vins,* ***Karel Nohac***
14	**Parking Lot Roofing with PV Panels: Solution for the Specific Use of Photovoltaic Source** *Milan Perny, Juraj Packa,* ***Vladimir Saly***, *Robert Irgel, Peter Cubon*
32	**Application of photovoltaic in renovation and modernization of school buildings and facilities** ***Lubomir Polonec***, *David Kompan*
39	**A Sequence-to-sequence LSTM Approach for Forecasting Energy Consumption and Production** ***Martin Matejko***, *Peter Bracinik, Lukas Radil*

19:30 - 23:00 social evening - *Botel Admirál, Hořejší nábřeží, Praha 5 - Smíchov*

Thursday, May 29, 2025, 09:00 - 10:30
session 4 - Nuclear Energy and Radiation Applications

9	**Optimization of Neutron Flux in Nuclear Reactors: Monte Carlo Simulations of Coolant and Moderator Admixture Effects** ***Rajnikant Makwana**, Bhargav Soni, Vishal Unagar, S. K. Mukherjeem, Karel Katovsky, Anand Purohit, N. L. Singh*
10	**Study of alpha induced nuclear reactions on nickel as a structural material for nuclear reactors** *Namrata Singh, A. Gandhi, Mahesh Choudhary, Mahima Upadhyay, J. Datta, S. Dasgupta, **Ajay Kumar***
17	**Experimental and theoretical analysis of (n,2n) reaction cross section on 58Ni for nuclear reactor and radiation shielding applications** ***N. L. Singh**, R. K. Singh, R. D. Chauhan, R. Makwana, M. Mehta, V. Vashi, Pargin Bangotra, Vandana, Shivani Sharma, B. K. Nayak, S. V. Suryanarayana, Karel Katovsky, S. Mukherjee*
18	**Measurement of 130Te(n,γ)131mTe reaction cross section at neutron energy of 14.96 ± 0.03 MeV** ***Vandana**, Shivani Sharma, Pargin Bangotra, N. L. Singh, Mayur Mehta, Mitul Abhangi, Ratnesh Kumar, Himanshu Sharma, Sudhirsinh Vala, R. K. Singh, R. Makwana, R. D. Chauhan, Karel Katovsky, S. Mukherjee*
19	**Radiative capture cross-section for 89Y at neutron energy of 14.96 ± 0.03 MeV** ***Shivani Sharma**, Vandana, Pargin Bangotra, N. L. Singh, Mayur Mehta, Mitul Abhangi, Ratnesh Kumar, Himanshu Sharma, Sudhirsinh Vala, R. K. Singh, R. Makwana, R. D. Chauhan, Karel Katovsky, S. Mukherjee*
29	**Investigation of Swift Heavy Ion Irradiation on $Gd_2Zr_2O_7$ Pyrochlore** *Asha Panghal, Yogendra Kumar, S Mukherjee, Karel Katovsky, Gagan Dhawan, Sukhvir Singh, **N. L. Singh***

10:30 - 11:00 coffee break

Thursday, May 29, 2025, 11:00 - 11:30
session 5 - Power Plants

5	**Time-Varying Sub-synchronous Oscillation Mitigation Strategy For DFIG Wind Farms Based on Adaptive Notch Filter** *Chuang Liu, Cong Sun, Rakhmonov Ikromjon, **Junrui Chen**, Heling Yang, Mingyao Ren, Jiawei Man*
25	**Determinants of Green Transition** *Miroslava Smitkova, Florinda Martins, **Jozef Bendik**, Lubomir Polonec*

11:30 - 11:45 conference closing ceremony

11:45 - 13:15 lunch

Notes to presentations

The standard presentation is 15 minutes including discussion.

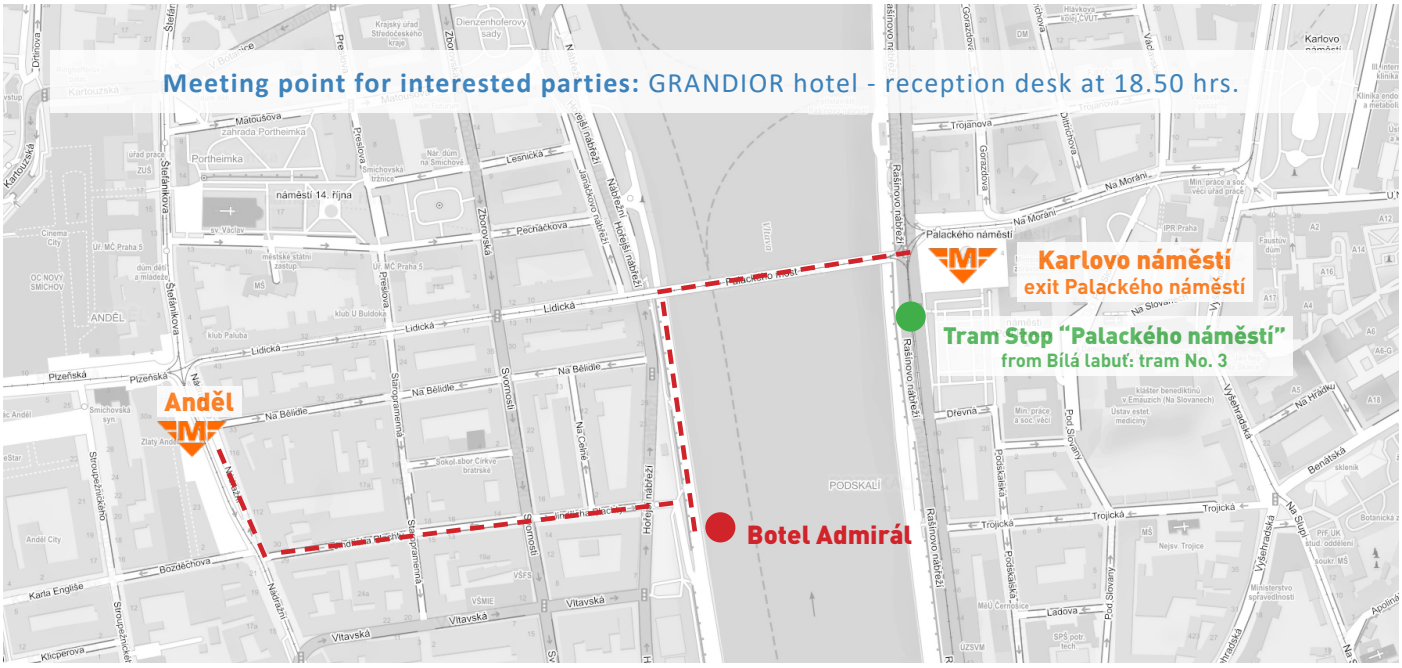
We kindly ask presenting authors to be present in the room at least 10 minutes before the session starts.
Please introduce yourself to the chairman and deliver your presentation (USB drive is expected).

WI-FI

SSID: Grandior-conference
Password: Meeting01

Social evening

Botel Admirál, Hořejší nábřeží, Praha 5 - Smíchov



EPE 2026

26th International Scientific Conference on Electric Power Engineering (EPE2026)

Opole, 18 - 20 May 2026

CALL FOR PAPERS

ORGANIZERS

Conference Chairs
Grzegorz KRÓLCZYK,
Opole University of Technology, PL
Radomír GOŇO,
VSB – Technical University of Ostrava, CZ

Technical Committee Chairs
Daria WOTZKA,
Opole University of Technology (PL)
Andrzej WAINDOK,
Opole University of Technology (PL)

Organizing Committee Chair
Michał KUNICKI,
Opole University of Technology (PL)

Important Dates

September 2025
Registration opens/initial paper submission

November 2025
Notification of acceptance

January 2026
Final paper submission/Fee payment

May 2026
Publishing of the conference program

PROGRESS AND CHALLENGES IN INSTRUMENTATION AND MEASUREMENT FOR ELECTRIC POWER ENGINEERING

The International Scientific Conference on Electric Power Engineering aims to serve as, a forum for an interchange of experience and presentations of research findings and industry applications as well as a place of meeting for scientists and engineers form universities and industry, who are devoting research and technical activities. The EPE Conference focuses on key problems of today´s power engineering that stem from both technical and economic needs of the power industry. It also deals with research activities of development institutions and universities. Through General and Special Sessions, participants can share ideas and stay updated on the latest developments in electric power engineering. A comprehensive review process for full-length submissions will be followed, thus ensuring the high quality of papers accepted and presented at the conference.

Conference topics

- ✓ Instrumentation & measurement in power engineering
- ✓ Operation & control of electric power system
- ✓ Smart grids/cities/technologies
- ✓ Reliability, maintenance & diagnostics
- ✓ Power stations
- ✓ Electrical engineering & technology
- ✓ Renewable energy
- ✓ Transmission & distribution
- ✓ Power system protection
- ✓ Materials for electric power engineering
- ✓ EMC & power quality
- ✓ Sustainability
- ✓ High voltage engineering
- ✓ Energy storage, conversion & generation
- ✓ Power electronics & components
- ✓ IT solutions & applications
- ✓ Prediction modeling & AI applications in power engineering
- ✓ Installations & intelligent buildings
- ✓ Electric machines

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