

12th International Conference and Exhibition on



Electrical
Power
Quality and
Utilization



14th-15th September, 2020, Kraków, Poland

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Conference Programme

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Conference schedule

2020 / 09 / 14		Monday
9 ⁰⁰ ÷ 9 ³⁰	Opening Ceremony	
9 ³⁰ ÷ 11 ⁰⁰	Session 1 Methods of power quality analysis, Modelling and simulation	
11 ⁰⁰ ÷ 12 ⁰⁰	break	
12 ⁰⁰ ÷ 14 ²⁰	Session 2 Power quality measurements: techniques, instruments	
14 ⁰⁰ ÷ 16 ⁰⁰	break	
16 ⁰⁰ ÷ 18 ²⁰	Session 3 Methods of power quality improvement	
2020 / 09 / 15		Tuesday
9 ⁰⁰ ÷ 11 ⁰⁰	Session 4 Influences of disturbing loads on supply networks and other electrical devices	
11 ⁰⁰ ÷ 12 ⁰⁰	break	
12 ⁰⁰ ÷ 14 ⁰⁰	Session 5 Power quality in grids with distributed generation and renewable energies	
14 ⁰⁰ ÷ 16 ⁰⁰	break	
16 ⁰⁰ ÷ 18 ⁰⁰	Session 6 EMC in electrical engineering. Energy efficiency. Education	
18 ⁰⁰ ÷ 18 ¹⁵	Closing session	

Session agenda

2020 / 09 / 14, 9 ⁰⁰ ÷11 ⁰⁰		Monday
Session 1 Methods of power quality analysis, Modelling and simulation Chairman: Zbigniew Hanzelka, AGH Moderator: Krzysztof Piątek, AGH		
9 ⁰⁰ ÷9 ⁴⁰	Opening Ceremony Prof. Irena Wasiak, Prof. Zbigniew Hanzelka IEEE speech	
1. 9 ⁴⁰ ÷10 ⁰⁰	Yuriy Varetsky, Volodymyr Konoval, Zbigniew Hanzelka: A Method of Evaluating FACTS Device Impact on Voltage Flicker in the EAF Supply System	
2. 10 ⁰⁰ ÷10 ²⁰	Dmitry Kalyuzhniy, Yuri Sayenko, Viktor Bolgov, Tatiana Baraninko: Evaluating responsibility for voltage unbalance emission in three-phase three-wire networks	
3. 10 ²⁰ ÷10 ⁴⁰	Krzysztof Piątek, Andrzej Firlit, Krzysztof Chmielowiec, Mateusz Dutka, Szymon Barcentewicz, Zbigniew Hanzelka: Optimal selection of metering points for power quality measurements in distribution system	
4. 10 ⁴⁰ ÷11 ⁰⁰	Szymon Barcentewicz, Tomasz Lerch, Andrzej Bień, Krzysztof Duda: Laboratory Evaluation of Phasor Based Islanding Detection Method	

Session 2

Power quality measurements: techniques, instruments

Chairman: Tomasz Sikorski, PWR

Moderator: Michał Jasiński, PWR

1. 12 ⁰⁰ ÷12 ²⁰	Krzysztof Duda, Andrzej Bień, Szymon Barczentewicz, Tomasz P. Zieliński: Real-time Validation of PMU Measurements
2. 12 ²⁰ ÷12 ⁴⁰	Jacek Katarzyński, Marek Olesz: Transient States during Short-circuit in a Line Powered by UPS and its Impact on Earth Fault Loop Impedance Measurement and Power Quality
3. 12 ⁴⁰ ÷13 ⁰⁰	Krzysztof Kołek, Krzysztof Piątek, Andrzej Firlit, Krzysztof Chmielowiec: Flicker Measurement Coprocessor for AMI Meters
4. 13 ⁰⁰ ÷13 ²⁰	Jarosław Rączka (PSE): Power Quality management in the Transmission System Operator's grid
5. 13 ²⁰ ÷13 ⁴⁰	Rene Kuczkowski, Maciej Śledź (ENEA): Dynamic power supply path determination of the Point of Consumption (PoC) in the Enea Operator network
6. 13 ⁴⁰ ÷14 ⁰⁰	Łukasz Kasperski (ENEA): The Use of Measurement Data From MV/LV Stations in Grid Optimization Algorithms and in Reports Supervising the Power Quality
7. 14 ⁰⁰ ÷14 ²⁰	Krzysztof Chmielowiec, Grzegorz Wiczyński, Tomasz Rodziewicz, Andrzej Firlit, Mateusz Dutka, Krzysztof Piątek: Location of power quality disturbances sources using aggregated data from energy meters

Session 3

Methods of power quality improvement

Chairman: William Howe/Marc Hallmann, EPRI

Moderator: Grzegorz Hayduk, AGH

1. 16 ⁰⁰ ÷16 ²⁰	William Howe (EPRI), Proactive PQ
2. 16 ²⁰ ÷16 ⁴⁰	Jan Geurts van Kessel, Edwin Tazelaar, Dimitri Jeltsema: Power-Efficient Grid Voltage Waveform Conditioning via Feed-Forward Compensation
3. 16 ⁴⁰ ÷17 ⁰⁰	Łukasz Topolski: Mitigation of Voltage Swells and Unbalance Caused by Photovoltaic Installations Using a Balancing Transformer and an Automatic Voltage Regulator in Low-Voltage Networks
4. 17 ⁰⁰ ÷17 ²⁰	Paweł Kelm, Ryszard Pawełek, Irena Wasiak: Effectiveness of Energy Storage Application for improving the quality of supply in Low Voltage Networks with Distributed Generation
5. 17 ²⁰ ÷17 ⁴⁰	Jerzy Mikulik, Jakub Jurasz: Net load variability with increased renewables penetration – simulation results for Poland
6. 17 ⁴⁰ ÷18 ⁰⁰	Tomasz Siostrzonek, Krzysztof Chmielowiec, Krzysztof Piątek, Mateusz Dutka, Andrzej Firlit: The use of multi-pulse systems in the power supply of hoisting machine drives to improve voltage parameters in mining plants
7. 18 ⁰⁰ ÷18 ²⁰	William Howe, Tom Cooke: Dynamic Statistical Process Control Limits for Power Quality Trend Data

Session 4
Influences of disturbing loads on supply networks
and other electrical devices

Chairman: Paweł Kelm, PŁ

Moderator: Michał Małaczek, PŁ

1. 9 ⁰⁰ ÷9 ²⁰	Maksymilian Przygodzki, Piotr Rzepka, Mateusz Szablicki, Łukasz Wakuliński: HVDC station voltage harmonic analysis in changing network conditions
2. 9 ²⁰ ÷9 ⁴⁰	Andrzej Książkiewicz: Load and current harmonics changes in industrial applications
3. 9 ⁴⁰ ÷10 ⁰⁰	Andrzej Książkiewicz: Mitigation of current harmonics in industry with active harmonic filter
4. 10 ⁰⁰ ÷10 ²⁰	Tomasz Lerch, Michał Rad, Igor Wojnicki: Selected power quality issues of LED street lighting
5. 10 ²⁰ ÷10 ⁴⁰	Tomasz Rodziewicz, Krzysztof Chmielowiec (TAURON): R&D TAURON Dystrybucja Project „System for evaluation of the propagation and improvement of PQ parameters in distribution networks
6. 10 ⁴⁰ ÷11 ⁰⁰	Tomasz Rodziewicz, Grzegorz Mudrak (TAURON): Energy storage systems in the distribution network - examples of R&D and demonstration projects in TAURON Dystrybucja

Session 5

Power quality in grids with distributed generation
and renewable energies

Chairman: Irena Wasiak, PŁ

Moderator: Michał Małaczek, PŁ

1. 12 ⁰⁰ ÷12 ²⁰	Michał Jasinski, Tomasz Sikorski, Dominika Kaczorowska, Paweł Kostyła, Zbigniew Leonowicz, Jacek Rezmer, Przemysław Janik, Daniel Bejmert: Global Power Quality Index application in Virtual Power Plant
2. 12 ²⁰ ÷12 ⁴⁰	Hubert Białas, Ryszard Pawelek, Irena Wasiak: A Simulation Model for the Analysis of Wind Farm Usage in Frequency and Voltage Regulation in an Electrical Power System
3. 12 ⁴⁰ ÷13 ⁰⁰	Paweł Dybowski, Tomasz Drabek: Control of prosumer voltage sources in distribution grids
4. 13 ⁰⁰ ÷13 ²⁰	Andreas Sumper, Sanket Puranik, Isidoros Kokos, Joaquim Meléndez, Luisa Candido: RESOLvD: ICT services and energy storage for increasing renewable hosting capacity in LV distribution grids
5. 13 ²⁰ ÷13 ⁴⁰	Andrzej Lange, Marian Pasko: Selected aspects of wind power plant operation in the power system
6. 13 ⁴⁰ ÷14 ⁰⁰	Sławomir Sowa: Lighting control system using solar energy to provide 24-hour lighting of the facility

Session 6

EMC in electrical engineering. Energy efficiency. Education

Chairman: Tomasz Sikorski, PWr

Moderator: Michał Jasiński, PWr

1. 16 ⁰⁰ ÷16 ²⁰	Jolanta Sadura, Jan Sroka, Maciej Owskiński: Rough identification of EM disturbances interfering the time-phase controller by the short circuit tests
2. 16 ²⁰ ÷16 ⁴⁰	Dimitri Jeltsema, Pablo Borja: On Linearity, Phasors and Steady-State Response of Electrical Circuits
3. 16 ⁴⁰ ÷17 ⁰⁰	Arkadiusz Kaszewski, Lech Grzesiak, Jan Sroka: Topology Optimization of RF EMI Filter Dedicated to a 3-Phase 4-Leg VSI with Sinusoidal Output Voltage Based on SiC Power Electronic Devices
4. 17 ⁰⁰ ÷17 ²⁰	Dominika Kaczorowska, Jacek Rezmer, Michał Jasiński, Paweł Kostyła, Zbigniew Leonowicz, Tomasz Sikorski, Przemysław Janik, Daniel Bejmert: Identification of Technological Limitations of the Battery Energy Storage System
5. 17 ²⁰ ÷17 ⁴⁰	Marcel Hallmann, Christoph Wenge, Przemysław Komarnicki: Evaluation Methods for Battery Storage Systems
6. 17 ⁴⁰ ÷18 ⁰⁰	William Howe, Mark Stephens, Alden Wright: Evaluation of Electromagnetic Emissions at a Photovoltaic Installation through Application of a Robotic Platform
18 ⁰⁰ ÷18 ¹⁵	Closing session