Scientific-Technical Conference

September 19-21, 2016
Szklarska Poręba, Poland

EPNet 2016

Electrical Power Networks

Technical Programme

Organizers:

Department of Electrical Power Engineering
Wroclaw University of Science and Technology, Poland

Wrocław University of Technology

Institute of Power Engineering and Control Systems
Lviv Polytechnic National University, Ukraine

In cooperation with:

Association of Polish Electrical Engineers (SEP)
Wroclaw Division

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IEEE

Conference Overview

Day 1: Monday – September 19th, 2016	
8:30 – 9:30	Breakfast
9:30 – 10:30	Registration
10:45 – 11:00	Opening Ceremony
11:00 – 12:30	Session 1: **Power Systems Control**
13:00 – 14:30	Lunch
14:30 – 16:00	Session 2: **Power System Planning and Operation**
16:00 – 16:30	Coffee Break
16:30 – 18:00	Session 3: **Identification and Diagnostics**
19:00 – 24:00	Conference Dinner
Day 2: Tuesday – September 20th, 2016	
8:00 – 9:00	Breakfast
9:00 – 10:30	Session 4: **Distribution Networks and Microgrids**
10:45 – 11:15	Coffee Break
11:15 – 12:30	Session 5: **Poster Session**
13:00 – 14:00	Lunch
14:00 – 19:00	Field trip
20:00 – 22:00	Grill
Day 3: Wednesday – September 21st, 2016	
8:30 – 9:30	Breakfast
10:00 – 11:30	Session 6: **Power Quality**
11:30 – 12:00	Coffee Break
12:00 – 13:30	Session 7: **Power System Protection**
13:30 – 14:00	Closing session
14:00 – 15:00	Lunch

Day 1:
Monday, September 19th, 2016

Session 1
Power Systems Control

Conference room, Monday, September 19th, 11:00 - 12:30
Chair: Prof. Andrzej Wiszniewski – *Wrocław University of Science and Technology, Poland*

1.1
Koordynacja przesuwników fazowych za pomocą algorytmu rojowego (ID 7)
Roman Korab, Robert Owczarek, Marcin Połomski - *Silesian University of Technology, Poland*

1.2
WLS State Estimation in Polar and Rectangular Coordinate Systems for Power System with Phase Shifter (ID 44)
Tomasz Okoń, Kazimierz Wilkosz - *Wroclaw University of Science and Technology, Poland*

1.3
Analiza rocznej zmienności inercji mas wirujących w elektroenergetycznym systemie synchronicznym kontynentalnej Europy w kontekście rozwoju i pracy OZE (ID 10)
Jacek Wasilewski - *PSE Innowacje sp. z o.o., Poland*
Zbigniew Lubośny - *Gdańsk University of Technology, Poland*

1.4
Quantum Inspired Evolutionary Algorithm to Improve Parameters of Neural Models on Example of Polish Electricity Power Exchange (ID 21)
Jerzy Tchórzewski, Dariusz Ruciński - *Siedlce University of Natural Sciences and Humanities, Poland*

Session 2
Power System Planning and Operation

Conference room, Monday, September 19th, 14:30 - 16:00
Chair: Prof. Marian Sobierajski – *Wrocław University of Science and Technology, Poland*

2.1
Signal Parameters Identification Method Used in Wide-Area Measurement Systems (ID 24)
Małgorzata Binek, Andrzej Kanicki, Piotr Korbel - *Lodz University of Technology, Poland*

2.2
Model and Simulation of Electric Power Exchange Development in Terms of Control and System Theory (ID 38)
Radosław Marlęga - *Siedlce University of Natural Sciences and Humanities, Poland*

2.3
Zdolności przyłączeniowe węzłów dystrybucyjnej sieci 110 kV (ID 15)
Henryk Kocot - *Silesian University of Technology, Poland*

2.4
Neural-evolutionary Modeling of Polish Electricity Power Exchange (ID 39)
Dariusz Ruciński - *Siedlce University of Natural Sciences and Humanities, Poland*

Session 3
Identification and Diagnostics

Conference room, Monday, September 19th, 16:30 - 18:00
Chair: Prof. Michał Zeńczak – *West Pomeranian University of Technology Szczecin, Poland*

3.1
Ocena zawodności sieci elektroenergetycznej średniego napięcia eksploatowanej na terenie przykładowego rejonu (ID 14)
Andrzej Stobiecki, Andrzej Ł. Chojnacki, Agata Kaźmierczyk - *Kielce University of Technology, Poland*

3.2
Modele obciążalności prądowej linii napowietrznych 110 i 220 kV (ID 17)
Henryk Kocot, Paweł Kubek - *Silesian University of Technology, Poland*

3.3
Zagadnienie współpracy sieci 110 kV skutecznie uziemionej z siecią skompensowaną (ID 20)
Marian Sobierajski, Wilhelm Rojewski - *Wrocław University of Science and Technology, Poland*

3.4
Identification of the Polish Power Exchange based on the Data related to the Day-Ahead Market (ID 22)
Jerzy Tchórzewski, Radosław Marlęga - *Siedlce University of Natural Sciences and Humanities, Poland*

3.5
Analiza zagrożeń powodowanych przez łuk elektryczny (ID 25)
Andrzej Kanicki - *Lodz University of Technology, Poland*

Day 2:
Tuesday, September 20th, 2016

Session 4
Distribution Networks and Microgrids

Conference room, Tuesday, September 20th, 9:00 - 10:45
Chair: Prof. Andrzej Kanicki – *Lodz University of Technology, Poland*

4.1
The Best Place for Connection of Wind Power Farms to Electric Power System in Point of view of Transmission and Distribution Systems Operators (ID 41)
Michał Zeńczak - *West Pomeranian University of Technology Szczecin, Poland*

4.2
Control of Low Voltage Microgrid in Autonomous Operation Mode (ID 31)
Michał Małaczek, Irena Wasiak - *Lodz University of Technology, Poland*

4.3
The Utilization of the Monitoring System for MV/LV Transformers in Smart Grid Application (ID 35)
Andrzej Kwapisz - *Poznań University of Technology, Poland*

4.4
Modeling of the Solar Panel Diesel-Generator System Stability (ID 50)
Julia Yamnenko, Kateryna Osypenko, Bohdan Hnatyuk - *National Technical University of Ukraine "Kyiv Polytechnic Institute", Ukraine*

4.5
Agent-based Power System Management – Concept of Grid Restoration (ID 29)
Przemyslaw Trojan, Martin Wolter - *Otto-von-Guericke University Magdeburg, Germany*

4.6
Concept of Rural Intelligent Grid Interactive Planning Methodology (ID 57)
Bartłomiej Arendarski, Pio Lombardi, Nicole Mencke, Przemysław Komarnicki - *Fraunhofer Institute for Factory Operation and Automation, IFF, Germany*
Marta Popławska, Mariusz Luto, Mariusz Piotrowski - *Electrum Ltd, Poland*
Mirosław Parol, Michał Polecki, Łukasz Rokicki - *Warsaw University of Technology, Poland*
Michał Ramczykowski - *European Copper Institute, Poland*

Session 5
Poster Session

Conference room, Tuesday, September 20th, 11:15 - 12:30
Chair: Dr. Mirosław Łukowicz – *Wrocław University of Science and Technology, Poland*

5.1
Dedicated Communication Protocols and Network Interfaces in Time Synchronization. Cyber Security in Complex Distribution Smart Grid (ID 8)
Robert Czechowski - *Wrocław University of Science and Technology, Poland*

5.2
Parametry i właściwości niezawodnościowe napowietrznych linii dystrybucyjnych 110 kV (ID 13)
Andrzej Ł. Chojnacki - *Kielce University of Technology, Poland*

5.3
Zagospodarowanie wyeksploatowanych podziemnych kopalń do celów energetycznych (ID 26)
Paweł Maślankiewicz, Henryk Wojciechowski, Robert Lis - *Wrocław University of Science and Technology, Poland*

5.4
Support the Work of Earth Fault Passage Indicator in MV Grid (ID 30)
Józef Lorenc, Jerzy Andruszkiewicz, Bogdan Staszak, Bartosz Olejnik - *Poznań University of Technology, Poland*
Przemysław Balcerek - *ABB Corporate Research Center Kraków, Poland*

5.5
Grounding Methods in Medium Voltage Networks (ID 34)
Józef Lorenc - *Poznań University of Technology, Poland*
Krzysztof Łowczowski - *Lodz University of Technology, Poland*

5.6
Issues of Inertia Response and Rate of Change of Frequency in Power Systems with Different Penetration of Variable Speed Wind Turbines (ID 47)
Mykhailo Seheda - *Lviv Polytechnic National University, Ukraine*
Oleksandra Dudurych - *MAGAL Power Inc., Canada*

5.7
Fault-Tolerant Control of an Induction Motor with Broken Stator Electric Circuit (ID 51)
Mykhaylo Zagirnyak, Andrii Kalinov, Viacheslav Melnykov - *Kremenchuk Mykhailo Ostrohradskyi National University, Ukraine*
Petro Stakhiv - *Lviv Polytechnic National University, Ukraine*

5.8
Transformer Discrete Macromodel for Simulation in ATP-EMTP Programme (ID 58)
Oksana Hoholyuk, Petro Stakhiv - *Lviv Polytechnic National University, Ukraine*
Eugeniusz Rosołowski - *Wrocław University of Science and Technology, Poland*

5.9
Effectiveness of Investigated Photovoltaic System (ID 32)
Justyna Herlender - *Wroclaw University of Science and Technology, Poland*

5.10
Characteristics of the Electrical Load on the Public Building (ID 49)
Marta Bątkiewicz-Pantuła - *Wrocław University of Science and Technology, Poland*

5.11
Distance Protection Performance Under Single Phase to Earth Faults Alone and Simultaneously with Open Conductor Failure (ID 54)
Gabriela Smętek, Jan Iżykowski - *Wrocław University of Science and Technology, Poland*

5.12
Wybrane zagadnienia komputerowego modelowania zwarć w sieciach sn dla potrzeb miarodajnego testowania algorytmów zabezpieczeniowych (ID 56)
Mirosław Łukowicz, Krzysztof Solak, Paweł Wicher, Bernard Wiecha - *Wrocław University of Science and Technology, Poland*

5.13
Możliwości sterowania rozpływem mocy biernej w Polskim Systemie Elektroenergetycznym (ID 45)
Tomasz Okoń, Kazimierz Wilkosz - *Wroclaw University of Science and Technology, Poland*

5.14
Standard IEC61850 w zastosowaniach badawczych i dydaktycznych w obszarze automatyki EAZ (ID 43)
Andrzej Kwapisz, Jacek Handke - *Poznań University of Technology, Poland*

5.15
Traveling Wave Fault Location – experiences in precise fault indication (ID 28)
Andrzej Juszczyk - *Grid Automation, GE Power, Poland*

5.16
Evaluation of the High Speed Protection Algorithm for Series Compensated Parallel Line (ID 59)
Piotr Pierz - *Wroclaw University of Science and Technology, Poland*

Day 3:
Wednesday, September 21th, 2016

Session 6
Power Quality

Conference room, Wednesday, September 21th, 10:00 - 11:30
Chair: Prof. Jerzy Tchórzewski - *Siedlce University of Natural Sciences and Humanities, Poland*

6.1
Reactive Power Compensation in a Powerful DC Drives Supply System (ID 42)
Yuriy Varetsky - *Lviv Polytechnic National University, Ukraine*

6.2
Features of Compensation of a Reactive Power at the Transient Mode (ID 40)
Valery Zhuikov, Ievgen Verbytskyi, Oleksandr Bondarenko - *National Technical University of Ukraine "Kyiv Polytechnic Institute", Ukraine*

6.3
Comparison of Reactive Power Compensation Methods (ID 48)
Bartosz Brusilowicz, Janusz Szafran - *Wrocław University of Science and Technology, Poland*

6.4
Zastosowanie macierzy transformacji napięć i prądów różnych grup połączeń uzwojeń transformatorów w analizie propagacji zapadów napięcia (ID 18)
Tomasz Sikorski, Beata Solak - *Wrocław University of Science and Technology, Poland*

6.5
Analiza skupień długoterminowych danych jakości energii elektrycznej (ID 19)
Michał Jasiński, Tomasz Sikorski - *Wrocław University of Science and Technology, Poland*
Jacek Karpiński, Marek Zenger - *Tauron Dystrybucja S.A., Poland*

6.6
Matrix Analysis of Power in 3-Phase System (ID 55)
Leszek Ładniak - *Wrocław University of Science and Technology, Poland*

Session 7
Power System Protection

Conference room, Wednesday, September 21th, 12:00 - 13:30
Chair: Prof. Tomasz Sikorski – *Wrocław University of Science and Technology, Poland*

7.1
Distance Protection Testing in an IEC 61850 Environment (ID 23)
Jan Ciechanowicz, Waldemar Rebizant - *Wroclaw University of Science and Technology, Poland*

7.2
DLR-Supported Distance Protection for Blackout Mitigation (ID 37)
Łukasz Staszewski, Waldemar Rebizant - *Wrocław University of Science and Technology, Poland*

7.3
Loss-of-mains Detection by Frequency Protection Functions (ID 46)
Daniel Bejmert - *Wrocław University of Science and Technology, Poland*

7.4
Modelowanie i analiza zabezpieczenia różnicowego linii przesyłowych dwutorowych (ID 52)
Krzysztof Solak, Waldemar Rebizant - *Wroclaw University of Science and Technology, Poland*

7.5
Wpływ uwarunkowań ekonomicznych na optymalny dobór układów do kompensacji mocy biernej (ID 53)
Kazimierz Herlender - *Wrocław University of Science and Technology, Poland*
Maciej Żebrowski - *REBUD Sp. z o.o, Poland*

Main activities:

- Manufacturing Centre for Automation BU panels in Europe
- Configuration base for Digital Control systems in Poland
- Base for LV relays manufacturing and customisation centre for Central & Eastern Europe

Other activities:

- Sales force for Automation BU products & systems over Poland, Baltic States, Ukraine, Bielarus, Stan countries, Moldovia, Georgia, Armenia
- Host unit for T&D Poland administration

Contact:

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MIKRONIKA is one of Poland's leading suppliers of system solutions for industrial automation systems based on software and hardware developed and manufactured in-house. For more than 32 years our solutions have been widely used in electric utilities, metallurgy, chemical industry and more recently in telecommunication. Innovation and superior quality of MIKRONIKA products have won universal recognition by customers and have been confirmed by numerous awards at specialist trade shows and exhibitions; it also results in constant, year-by-year increase of number of implementations. MIKRONIKA supplied and implemented several dozens large-scale, comprehensive and sophisticated SCADA systems, several thousands of systems and many pieces of high-tech equipment for various industries, with the electric utility companies being the most prominent among our customers.

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Day 0: Sunday September 18, 2016	Day 1: Monday September 19, 2016	Day 2: Tuesday September 20, 2016	Day 3: Wednesday September 21, 2016
		8:00 Breakfast	
	8:30 Breakfast		8:30 Breakfast 9:30
	9:30 Registration 10:30	9:00 Session 4: **Distribution Networks and Microgrids** 10:45	
	Opening Ceremony	Coffee Break	10:00 Session 6: **Power Quality** 11:30
	11:00 Session 1: **Power Systems Control** 12:30	11:15 Session 5: **Poster Session** 12:30	Coffee Break
			12:00 Session 7: **Power System Protection** 13:30
	13:00 Lunch	13:00 Lunch	**Closing Session**
	14:30 Session 2: **Power Systems Planning and Operation** 16:00	14:00 Wycieczka krajoznawcza 19:00 return	14:00 Lunch 15:00
	Coffee Break		
	16:30 Session 3: **Identification and Diagnostics** 18:00		
18:00 Dinner (18:00 - 21:00)			
	19:00 Gala Dinner	20:00 Grill	