

Polish Society of Theoretical and Applied Electrical Engineering (PTETiS)

and

Cracow University of Technology (PK)



FINAL PROGRAM

2019 15th Selected Issues of Electrical Engineering and Electronics (WZEE)

Poland - Zakopane 8 – 10.12.2019

Welcome to WZEE 2019

It is our great pleasure and honor to welcome you to the 15th edition of the conference **Selected Issues of Electrical Engineering and Electronics (WZEE)** in Zakopane, Poland. The organizing committee of WZEE 2019 will continue the tradition established by the previous events. We hope that the meeting in Zakopane will maintain the high level of technical content of the previous editions and will continue to serve its role as the major forum where university faculty gather together to focus on electrical problems.

The importance of WZEE technical content is under auspices of Electrotechnical Committee of Polish Academy of science and confirmed by the sponsorship from the IEEE as well as by the fact that the Symposium papers will be available on the IEEE *Xplore*.

Organizing Committee:

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<http://www.wzee2019.pk.edu.pl>

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Tadeusz JANOWSKI,
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Marian PASKO,
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Stefan Tadeusz KULIG – Prof. University of Dortmund,
Andreas AHRENS – Prof. University of Wismar,
Dieter SCHOTT – Prof. University of Wismar,
Peter HEHENBERGER – Prof. University of Applied Sciences Upper Austria.

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Mariusz MALINOWSKI – Chair of Poland Section IEEE.

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Tadeusz SKUBIS – Editor-in-Chief of Pomiary Automatyka Kontrola,
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IEEE Poland Section

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Marek JASIŃSKI – Conferences Coordinator.

IEEE Poland Joint Chapter of Industrial Electronics and Power Electronics

Sebastian STYŃSKI – Chapter Chair,
Adam MILCZAREK – V-ce Chair for PELS activities,
Robert SMOLEŃSKI – V-ce Chair for IES activities.

Venue

The official conference hotel and venue is **Conference Center „Parzenica” - Zakopane**
<http://www.okwparzenica.pl> Tel.: +48 18 33 46 765;



The hotel is situated at Ogrodowa 6 str., 34-500 Zakopane. It is perfectly located in the center near Krupówki.

Guidelines for Presentations

All papers will be orally presented. The authors are requested to prepare a Power Point presentation. Please be aware that the computer equipment only supports standard Windows fonts, and that video clips often cause trouble in a presentation. The presentation has to be transferred to a notebook computer which will be available in each of the session room.

The presenting authors are expected to upload their Power Point presentations 10 min. before their respective session starts. There will be technical staff for support. Please use a memory stick to transfer your presentation to the computers. However, your presentation will be erased from the session computer right after the session, so we do not keep your presentation.

The oral presentations are scheduled to last not longer than 10-12 minutes. There is an additional 5 minutes for discussion. The session chairs are requested to maintain the session schedule.

Guidelines for Session Chairs

The session chairs should be present in the session room 10 min. before the session starts so that they can meet the authors.

The presentations are scheduled to last not longer than 10-12 min. There is an additional 5 min. for discussion. The session chairs are requested to maintain the session schedule.

Ancillary Events

Sunday, December 8, 2019

- 13⁰⁰ - 15⁰⁰ Registration (arrival and accommodation)
- 14⁰⁰ - 16⁰⁰ Lunch
- 15³⁰ - 16³⁰ Plenary meeting of the PTETiS Board (conference room)
- 17⁰⁰ Mass in the Church Our Lady of Częstochowa (Zakopane ul. Kościeliska 4)
- 19⁰⁰ **Opening of the Conference and Christmas Eve Supper**

Monday December 9, 2019

- 8⁰⁰ - 9⁰⁰ Breakfast
- 9⁰⁰ - 10³⁰ **Session No. 1** (conference room)
- 10³⁰ Coffee break
- 11⁰⁰ - 13⁰⁰ **Session No. 2** (conference room)
- 13⁰⁰ - 14⁰⁰ Lunch
- 14³⁰ - 16⁰⁰ **Session No. 3** (conference room)
- 16⁰⁰ Coffee break
- 16³⁰ - 18⁰⁰ **Session No. 4** (conference room)
- 18⁰⁰ - 19⁰⁰ Plenary meeting of the PTETiS Board (conference room)
- 19⁰⁰ Gala dinner

Tuesday December 10, 2019

- 8⁰⁰ - 9⁰⁰ Breakfast
- 9⁰⁰ - 11⁰⁰ **Session No. 5** (conference room)
- 11⁰⁰ Coffee break
- 11³⁰ - 12³⁰ **Closing of the conference** (conference room)
- 12³⁰ Check out
- 13⁰⁰ - 14⁰⁰ Lunch
- 14⁰⁰ Departure

Session 1 - Electromagnetic Fields

Time: Monday December 9, 9:00-10:30

Chairs: Prof. Tadeusz Sobczyk, Prof. Jan Szczygłowski

Małyżko Olgierd, Zeńczak Michał	Estimation of Cumulative Action of Electric and Magnetic Fields near Electrical Objects	Zachodniopomorski Uniwersytet Technologiczny
Zurek Stan, Koprivica Branko, Chwastek Krzysztof	T(x) hysteresis model extended to take into account magnetic anisotropy	Politechnika Częstochowska
Sierżęga Michał, Warzecha Adam	Field-circuit simulations of electrical asymmetry in double fed induction generator	Politechnika Krakowska
Siedlecki Maciej, Zawada Alekander, Przybylski Marek, Ślusarek Barbara	Methods of preparing soft and hard magnetic elements by additive manufacturing – review	Instytut Tele- I Radiotechniczny
Boiko Oleksandr	Dielectric relaxation in granular metal-dielectric nanocomposites	Concept Stal S.J.

Session 2 - Power Electronics

Time: Monday December 9, 11:00-13:00

Chairs: Prof. Mariusz Korkosz, Prof. Dariusz Świsulski

Szular Zbigniew, Rozegnal Bartosz, Mazgaj Witold, Cholewa Dariusz	Limitations of control parameters of the three-phase voltage source inverter containing the soft switching system with safe connections of capacitors and inductors	Politechnika Krakowska
Knypiński Łukasz, Krupiński Jacek	The Energy Conversion Efficiency in the Trolley Travelling Drive System in Tower Cranes	Politechnika Poznańska
Podskarbi Grzegorz, Korkosz Mariusz	Analysis of selected fault states of 12/8 switched reluctance motors	Politechnika Rzeszowska
Kosiorowski Stanisław, Stobiecki Andrzej	Reduction of Total Harmonic Distortion and Effective Source Current in Circuits with Nonsinusoidal Waveforms	Akademia Górniczo- Hutnicza
Drozdowski Piotr, Cholewa Dariusz	Natural Fault Tolerance of a Nine-Phase Induction Motor Drive Operating at Variable Frequency and Switched Supply Sequence	Politechnika Krakowska
Szromba Andrzej, Sysło Bartłomiej	Unified Power Quality Conditioner Controlled With the Use of Load Equivalent Conductance Signal	Politechnika Krakowska

Session 3 - Multi-Disciplinary

Time: Monday December 9, 14:30-16:00

Chairs: Prof. Paweł Idziak, Prof. Michał Zeńczak

Gas Piotr, Miaskowski Arkadiusz	A Heating from a Standard Active Implantable Medical Device under MRI exposure	Akademia Górniczo-Hutnicza
Wantuch Agnieszka	PEF in food processing poles	Akademia Górniczo-Hutnicza
Borkowski Dariusz, Cholewa Dariusz, Natalia Radwan-Pragłowska, Tulicki Jarosław, Węgiel Tomasz	Design of a smart lock system	Politechnika Krakowska
Kluszczyński Krzysztof, Pilch Zbigniew	Basic features of MR clutches – resulting from different number of discs	Politechnika Krakowska
Bartel Sebastian, Kluszczyński Krzysztof, Pilch Zbigniew	Concept of electromagnetic periodical duty pump with programmable liquid flow	Politechnika Krakowska

Session 4 - Power Systems

Time: Monday December 9, 16:30-18:00

Chairs: Prof. Henryka Danuta Stryczevska, Prof. Barbara Ślusarek

Kusznier Jacek, Wojtkowski Wojciech	Impact of climatic conditions on PV panels operation in a photovoltaic power plant	Politechnika Białostocka
Kusznier Jacek, Wojtkowski Wojciech	Impact of climatic conditions and solar exposure on the aging of PV panels	Politechnika Białostocka
Drozdowski Piotr, Warzecha Adam	Mathematical Study and Control of Diesel Rotary Uninterruptible Power Supply	Politechnika Krakowska
Rozegnał Bartosz, Albrechtowicz Paweł, Mamcarz Dominik	The protections of the 5 – node Medium Voltage (MV) power system in case of the symmetrical faults	Politechnika Krakowska
Adrikowski Tomasz, Piwowar Anna	Distributed system for power quality improvement.	Politechnika Śląska

Session 5 - Electrical Machines

Time: Tuesday December 10, 9:00-11:00

Chairs: Prof. Krzysztof Kluszczyński, Prof. Adam Warzecha

Drabek Tomasz, Dybowski Paweł	Control of prosumer energy sources in power grid fed by three-phase distribution transformer	Akademia Górniczo-Hutnicza
Sobczyk Tadeusz	2D Discrete Differential Operators for Periodic Functions	Politechnika Krakowska
Jaraczewski Marcin, Sobczyk Tadeusz	Numerical tests of novel finite difference operator for solving 1D boundary-value problems	Politechnika Krakowska
Berhausen Sebastian	The influence of the damper cage on the waveforms and subtransient reactances calculated at a two-phase short circuit of a large hydrogenerator	Politechnika Śląska
Jarek Tomasz, Berhausen Sebastian	Analysis of the impact of an auxiliary winding of a permanent magnet synchronous machine on the generation of shaft voltages	Sieć Badawcza Łukasiewicz
Goryca Zbigniew, Pakosz Artur	Influence of selected reduction methods on the cogging torque of multipolar machines with permanent magnets	Wojskowe Centralne Biuro Konstrukcyjno-Technologiczne S.A.

Notatki: