2021 17th International Conference on Electrical Machines, Drives and Power systems (ELMA)

ELMA 2021

1 - 4 July 2021,
Technical University of Sofia, BULGARIA

Organised by:

Union of Electronics, Electrical Engineering and Telecommunications (CEEC)
IEEE Bulgaria Section

Friends of the ELMA 2021 are:

Technical Universities of Sofia, Varna and Gabrovo
University of Ruse “Angel Kantchev”
Federation of Scientific and Technical Unions
“Prof. Assen Zlatarov” University – Bourgas

PROGRAM
CONFERENCE VENUE

The 17th International Conference on Electrical Machines, Drives and Power Systems ELMA 2021 will be held in Sofia, Bulgaria, in the building of Federation of the scientific engineering unions (FNTS) in Sofia, 108 Rakovsky Str.

LANGUAGE

Official language of the Conference will be English.

ONLINE SYSTEM REGISTRATION AND CHECK

The participants will receive username and password for the online conference system (https://elma.ceec.bg/e-conf), created by the organizers, via email on Monday 28.06.2021 morning. Then the system is accessible. Please do technical check on:

- Monday 28.06.2021 16:00-17:00 Sofia local time
- Tuesday 29.06.2021 11:00-12:00 Sofia local time

PAPER PRESENTATION

Authors who will present the papers (orally or by poster) are kindly requested to prepare their presentations BEFORE the conference start and send them to elma2021@tu-sofia.bg between 25.06.2021 and 28.06.2021.

The time for the oral presentation of the regular papers including discussion is 15 minutes. Papers should be presented in English only by the registered authors.

For poster presentation, please follow the template on the site.

CONFERENCE PARTICIPATION

The participants can access the sessions via the conference system (https://elma.ceec.bg/e-conf), according the program time table, also available after system login.
<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
<th>Hall A</th>
<th>Hall B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday, 28 June</td>
<td>16:00-17:00</td>
<td>Online system registration and check</td>
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<tr>
<td>Tuesday, 29 June</td>
<td>11:00-12:00</td>
<td>Online system registration and check</td>
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<tr>
<td>Thursday, 1 July</td>
<td>9:30-10:00</td>
<td>Access to the conference system</td>
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<td></td>
<td>10:00-10:30</td>
<td>Conference opening</td>
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<td></td>
<td>10:30-12:30</td>
<td>Plenary session</td>
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<td>12:30-14:00</td>
<td>Lunch break</td>
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<tr>
<td></td>
<td>14:00-15:30</td>
<td>Oral 1</td>
<td>Oral 2</td>
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<tr>
<td></td>
<td>15:30-16:00</td>
<td>Coffee Break</td>
<td></td>
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<td></td>
<td>16:00-17:30</td>
<td>Oral 3</td>
<td>Oral 4</td>
</tr>
<tr>
<td></td>
<td>18:00-20:00</td>
<td>Welcome Cocktail</td>
<td></td>
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<tr>
<td>Friday, 2 July</td>
<td>9:00-10:30</td>
<td>Oral 5</td>
<td>Oral 6</td>
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<td></td>
<td>10:30-11:00</td>
<td>Coffee Break</td>
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<td>11:00-12:30</td>
<td>Oral 7</td>
<td>Oral 8</td>
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<td>10:00-11:00</td>
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<td>Lunch break</td>
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<td>14:00-16:00</td>
<td>Participants’ discussions on the conference topics</td>
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<tr>
<td>Sunday, 4 July</td>
<td>10:00-16:00</td>
<td>Round tables and participants’ discussions</td>
<td>Conference closing</td>
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</tbody>
</table>
CONFERENCE PROGRAM

Thursday, 1 July 2021
10:00-12:30 Hall A

CONFERENCE OPENING

Chair: V. Lazarov Co-Chairman of ELMA2021
10:00 – 10:30 Welcome addresses

10:30 – 12:30 Plenary session

"Application prospects of high-temperature superconducting materials in magnetic systems of electromechanical devices"
Presented by Pavel Kurbatov,
Co-authors: Andrey Drozdov, Ekaterina Kurbatova, Egor Kuschenko
Russian Federation

"Induction machines in automotive applications - the example of Audi and Tesla"
Presented by Robin Thomas,
Co-authors: Hugo Husson, Lauric Garbuio, Laurant Gerbaud
France

“Tilos, a small Greek island full of green and sustainable energies”
Presented by Gilles Notton
Author: Gilles Notton
France

“Complex Engineering Systems Approach in Evaluating the Recent Energy Crisis in Texas”
Presented by Martin Minchev
Author: Martin Minchev
USA

12:30-14:00 Lunch Break
Thursday, 1 July 2021

14:00-15:30 Oral Session - Hall A

Oral 1

**Chairman: George Todorov**

O1-1. Efficiency of synchronous motor with interior permanent magnets with included losses and nonlinear parameters of magnetic circuit  
Željko Hederic, Venco Ćorluka, Miralem Hadžiselimović

O1-2. Fault Diagnosis Modeling of Induction Machine  
Nikolay Djagarov

O1-3. Investigation of Thermoelectric Cooler System Effect on Induction Motor Performance  
Murat Toren, Hakki Mollahasanoglu

O1-4. Adaptive Controller for Induction Machine Direct Torque Control  
Nikolay Djagarov, Hristo Milushev, Yuri Kononov, Julia Djagarova

O1-5. Investigation of the Influence of Hysteresis on the Characteristics of Direct Torque Control of Induction Motor  
Nikolay Djagarov, Hristo Milushev, Aleksandra Varganova, Julia Djagarova

O1-6. Design of Non-Inductive Transformer With Capacitive Coupling Using Mutual Capacitance  
Necdet Kaan Onur, Gokturk Poyrazoglu

14:00-15:30 Oral Session - Hall B

Oral 2

**Chairman: Ludmil Stoyanov**

O2-1. Analysis and practical application of the regulatory requirements for coasts power stations in port complexes  
Rumen Kirov, Ginko Georgiev

O2-2. Analysis of the Energy Balance and Electric Consumption of Luxury Yacht for Charters  
Ginka Ivanova, Valentin Gyurov

O2-3. Insights Into the Urban Electric Transport System by Means of Comparative Analysis of Different Power Theories  
Nikola Makedonski, Georgi Milev
O2-4. Investigation of the Energy Losses of Supercapacitor Banks due to Self-Discharge
   Boris Evstatiev, Dimcho Kiriakov

O2-5. A “single component” approach for electronic units’ reliability prediction
   Toncho Papanchev, Angel Marinov, Julia Garipova

O2-6. Adaptive Dynamic Braking Schemes to Damp Interarea and Subsynchronous Oscillations using Deep Reinforcement Learning
   Nikita Tomin, Victor Kurbatsky, Alexey Iskakov

15:30+16:00 Coffee Break Lobby

16:00-17:30 Oral Session - Hall A

Oral 3

Chairman: Dimo Stoilov

O3-1. Analysis of short circuit currents in interface nodes of Kitka wind power park in Kosovo
   Nuri Berisha, Petrit Kastrati, Gazmend Pula, Dimo Stoilov, Rad Stanev

O3-2. Comparative Analysis of Alternatives for Bulgarian Energy System Development
   Kristina Hadzhiyska, Dimitar Tonev, Kiril Angelov, Dimo Stoilov

O3-3. Impedance determination of 400kV Overhead Lines of Kosovo Power System
   Nuri Berisha, Genc Sejdiu, Rad Stanev, Dimo Stoilov

O3-4. Water Storage Electric Power Plant with Controllable Suction Head
   Dimo Stoilov, Georgi Stoilov, Sylvia Goranova

O3-5. Reactive power of nonlinear sign – changing loads
   Dzhengiz Ibram, Vultchan Gueorgiev

O3-6. Power Quality Analyzers Calibration on Total Harmonics Distortion of Voltage and Current by Reference Square Waveform Signal and Algorithm for Measurement and Processing
   Plamen Tzvetkov, Krasimir Galabov, Andrey Serov, Ivan Kodjabashev
Chairman: Iliana Marinova

O4-1. Possibilities for Determining the Apparent Power Components When Ship Synchronous Generator is Operating
  Vladimir Chikov, Nikola Makedonski, Georgi Milev, Borislav Cvetanov

O4-2. Research on the impact of regulator functions of power transformers on power losses in electrical supply systems
  Rumen Kirov, Ginko Georgiev

O4-3. Case-study for HW accelerated FEA model for electrical machine control prototyping
  Richard B Szilagyi, Adrienn Dineva

O4-4. Construction of a three-dimensional thermal model of the stator of a turbogenerator taking into account gas dynamics
  Vitaly Ryzhov, Oleg Molokanov, Pavel Dergachev, Sergey Osipkin, Ekaterina Kurbatova, Pavel Kurbatov

O4-5. Design Variants Assessment Of Street LED Device Based On Virtual Prototyping
  Georgi Todorov, Konstantin Kamberov, Hristo Vasilev, Tsvetozar Ivanov

O4-6. Review and Conceptual Design of FPGA-based Application for Data-Driven Power Electronic Systems
  Adam Zsuga, Adrienn Dineva

18:00-20:00 Welcome Cocktail in the Lobby
**Chairman: Valentin Mateev**

O5-1. A Wireless Power Transfer Method for Electric Vehicles by Synchronization to Secondary Resonance  
Mete Cesmeci, Gokturk Poyrazoglu

O5-2. Using MBSE for Operational Analysis of Power Converter for Electric Traction  
Nasr Guennouni, Nadia Machkour, Ahmed Chebak

O5-3. Mathematical analysis of PMIC for VRM applications  
Filip Stoimenov, Vladimir Dimitrov

O5-4. Quasi-Resonant Circuitry to Improve Heat Transfer and Efficiency in Induction Cookers  
Huseyin Kucukosman, Gokturk Poyrazoglu

O5-5. Single Phase PFC Topology Selection Based on Neuron Network Algorithms  
Angel Marinov, Svetlozar Zahariev, Ivelin Ivanov, Svilen Simeonov

O5-6. Slim Design of An LLC Resonant Converter by Using Toroidal Transformer for OLED TV  
Samet Kurt, Gokturk Poyrazoglu

O5-7. The Cooling System Of High-voltage Power Rectifier  
Ilia Kirillov, Pavel Dergachev

**Chairman: Ivan Yatchev**

O6-1. Essential frequencies in the characteristics of control systems, analytical definitions, correspondences and symmetries  
Emil Nikolov

O6-2. Research of LED dimming sources and lighting systems  
Iliyan Iliev, Samet Isak, Hristian Panchev
O6-3. Fuzzy Logic Control Design Based on the Genetic Algorithm for a Modular Servo System
   Donka Ivanova, Martin Dejanov

O6-4. Data Acquisition Board for Monitoring and Analys of Electrical and Non-electrical data on Board of a Vessel
   Nikolay Djagarov

O6-5. Educational set-up for brushless motor drives
   Akin Uzel, Diego Zuidervliet, Peter van Duijsen

O6-6. Some Opportunities to Improve the Learning Process of Students Based on Computer Simulations
   Ilona Iatcheva

O6-7. Teaching Field Oriented Control using Animation
   Peter van Duijsen, Diego Zuidervliet

10:30÷11:00 Coffee Break Lobby

11:00-12:30 Oral Session - Hall A

Oral 7

Chairman: Zahari Zarkov

O7-1. Carrying Out of Strength Tests of Geared Motor Box as Part of a Frequency-Controlled Traction Electric Drive
   Genadijs Kobenkins, Marks Marinbahs, Vsevolod Burenin, Jaroslavs Zarembo, Olegs Sliskis

O7-2. Carrying Out of Tests for the Functionality of the Traction Autonomous Drives in the Conditions of Industry and Serial Production
   Ilja Dvornikovs, Marks Marinbahs, Olegs Sliskis, Karlis Ketners, Genadijs Kobenkins

O7-3. Efficiency Optimization of Electric Drives with Full Variable Switching Frequency and Optimal Modulation Methods
   Timijan Velic, Maximilian Barkow, David Bauer, Patrick Fuchs, Johannes Wende, Jan Nägelkrämer, Nejila Parspour

   ilayda Demircioglu, Gokturk Poyrazoglu

O7-5. Modelling of regenerative braking
   Valentin Totev, Vultchan Gueorgiev
O7-6. Methodology for Forecasting of Energy Consumption in Trolleybus Transport with Probabilistics Indicators
   Valentin Gyurov, Nikolay Bezhanov

O7-7. Comparative Study of the Tesla Model S and Audi e-Tron Induction Motors
   Robin Thomas, Hugo Husson, Lauric Garbuio, Laurent Gerbaud

11:00-12:30 Oral Session - Hall B

Oral 8

Chairman: Gilles Notton

O8-1. Comparison of Energy Management Strategies in a Microgrid with Photovoltaic/Battery System
   Sarah Ouédraogo, Ghuvan Antone Faggianelli, Guillaume Pigelet,
   Jean Laurent Duchaud, Cyril Voyant, Gilles Notton

O8-2. Power Transform of Solar Irradiation Time Series and Univariate Representation of Periodic AutoRegressive
   Cyril Voyant, Gilles Notton, Jean Laurent Duchaud

O8-3. A Concept for Flexible and Self-Adaptable Classification of ETIP SNET Technologies and Functionalities
   Christina Papadimitriou, Rad Stanev, Venizelos Efthymiou

O8-4. Advanced Machine Learning Approaches for State-of-Charge Prediction of Li-ion Batteries under Multisine Excitation
   Adrienn Dineva

O8-5. Renewable energy from two-stage anaerobic digestion of organic wastes
   Ivan Simeonov

O8-6. Distributed Siting of Wind Farms to Minimize Fluctuations in Generated Power
   Vladislav Shakirov, Nikita Tomin, Victor Kurbatsky

O8-7. Genetic Algorithm for Generation of PV Panel Curves From Datasheets
   Angel Marinov, Svetlozar Zahariev, Ivelin Ivanov, Toncho Papanchev

12:30-14:00 Lunch Break
Poster 1

Chairman: Zahari Zarkov

P1-1. Analysis of the Influence of NdFeB Permanent Magnet’s Grade and Volume on the Characteristics of a PM Claw-pole Alternator
   Ivan Bachev, Vladimir Lazarov, Zahari Zarkov

P1-2. Application of ANN for forecasting of PV plant output power – Case study Oryahovo
   Ludmil Stoyanov, Iva Draganovska

P1-3. Automated LabVIEW measurement LLC System Control GUI
   Nikolay Hinov, Tsveti Hranov

P1-4. Assessment of the technical condition of electric contact joints using thermography
   Yavor Lozanov

P1-5. Determination of the Periodicity for Thermographic Tests of the Electrical Equipment
   Yavor Lozanov, Svetlana Tzvetkova, Angel Petleshkov

P1-6. Axial Magnetic Gear Harmonic Spectrum Analysis
   Valentin Mateev, Miglenna Todorova, Iliana Marinova

P1-7. Ferrofluid Break Modeling
   Georgi Ivanov, Miglenna Todorova, Valentin Mateev, Iliana Marinova

P1-8. Identification of moving lightning clouds using four-dimensional electromagnetic potential
   Atanas Chervenkov

P1-9. Electromagnetic field evaluation in building located close to high-voltage overhead line
   Atanas Chervenkov

P1-10. Induction Brazing Process Control
   Dragomir Grozdanov, Nikolay Hinov

P1-11. Integrated Biologically Effective Lighting and Heating Installation for Sport Facilities
   Iva Petrinska, Dimitar Pavlov, Dilyan Ivanov

P1-12. Interruptions of the Power Supply in Low Voltage Cable Networks
   Svetlana Tzvetkova
Svetlana Tzvetkova, Angel Petleshkov, Yavor Lozanov

Martin Ralchev, Valentin Mateev, Iliana Marinova

P1-15. Experimental Verification of Hertzian Contact Model for Electric Joints  
Raina Tzeneva, Valentin Mateev, Martin Ralchev, Yanko Slavchev

P1-16. Capacitance Analysis of Multilayer HTS Power Cable  
Georgi Ivanov, Valentin Mateev, Iliana Marinova

P1-17. Study of Faults and Power Outages in Power Distribution Grids  
Mediha Mehmed-Hamza, Anton Filipov, Milena Ivanova

15:00-16:00  
Poster session - Remotely  
Poster 2

Chairman: Ivan Bachev

P2-1. Developing and Integration of New Modules for Web-based Education Platform  
Atanas Yanev

P2-2. Modeling of photovoltaic power plant electricity generation using machine learning methods  
Rad Stanev, Tanyo Tanev

P2-3. Modeling Tool For Determination Of The Available Energy In Battery Storage Systems  
Dimitar Arnaudov

P2-4. Study a Converter for Voltage Equalization of Energy Storage Systems  
Dimitar Arnaudov

P2-5. Open Source Electronic System for Controlling of Hybrid Electromagnetic Systems with Magnetic Flux Modulation  
Iosko Balabozov, Ivan Yatchev, Dimitar Karastoyanov, Nikolay Stoimenov, Hartmut Brauer

P2-6. Challenges of Online Laboratory Electrical Engineering Exercises  
Nikolina Petkova, Snejana Terzieva
P2-7. Influence of Magnet Dimensions on Torque Components and Cost of Synchronous Machine with Interior Magnets
   Zahari Zarkov, Vladimir Lazarov, Tsvetomir Stoyanov, Ludmil Stoyanov

P2-8. Arching Faults in Low-voltage Distribution Networks
   Aleksey Kulikov, Marina Rashevskaya, Michail Tibrayev, Aleksey Gudoghnikov

P2-9. Assessment and Analysis of the Reliability of Insulation System for High-Voltage Induction Motors Based on the Partial Discharge Level
   Plamen Rizov, George Todorov

P2-10. Comparison of Inductor Machines With Different Types of Excitation
   Ekaterina Kurbatova, Egor Kuschenko, Timofey Zolotarev, Pavel Kurbatov

P2-11. Comparison of Radial Forces between Double-Rotor Planetary and Coaxial Magnetic Gears
   Oleg Molokanov, Elizaveta Konyushenko, Eugene Zenko, Ekaterina Kurbatova, Nikolay Sabaykin, Pavel Kurbatov

P2-12. Control Algorytm For Bidirectional Converters In The PV Power Supply System With Intelligent PV Modules
   Konstantin Kryukov, Georgy Solovov, Nikolay Rodkin, Ekaterina Erokhina, Nikolay Baranov

P2-13. Dependence of the load capacity of installation cables
   Nikolay Khrenkov

P2-14. Development of a system for measuring body temperature and access control
   Alexander Antipin, Semen Astapchik, Ilya Balyasny, Andrey Lapin, Ekaterina Lapteva, Ilya Sorokin, Andrey Tolkachev

P2-15. Study of the Parameters of an Autotransformer Discrete Alternating Voltage Regulators Considered as a Two-Port
   Emil Panov, Milena Ivanova, Emil Barudov

P2-16. Polymeric Composite Insulators for Overhead Power Lines. A Review of In-Service Damages and Diagnostic Approaches
   Georgi Georgiev, Milena Ivanova, Rositsa Dimitrova, Yulian Rangelov
16:00-17:00  Poster session - Remotely

**Poster 3**

*Chairman: Ludmil Stoyanov*

P3-1. Modeling of Short-Term Electric Motor Load Power Supply Disturbances in the Matlab (Simulink) System  
Sergey Tsyruk, Nikolay Danilov, **Aleksandr Timonin**

P3-2. Statistical approach for designing generic 18650 battery model  
**Szabolcs Kocsis Szürke**, Adreinn Dineva, Krisztián Horváth, István Lakatos

P3-3. Using of HTS Materials in Construction of Linear Electric Vernier Machines  
Andrey Drozdov, Ekaterina Kurbatova, **Pavel Kurbatov**

P3-4. Vernier Machine with Azimuthally Magnetized Permanent Magnets  
Elizaveta Konyushenko, Ekaterina Kurbatova, Nikolay Sabaykin, **Oleg Molokanov**, Pavel Kurbatov, Eugene Zenko

P3-5. Voltage Stabilization in Current Inverters with Fully Controllable Switches  
**Ekaterina Mirgorodskaya**, Nikita Mityashin, Yuri Tomashevskiy, Yuri Golembiovsky, Ivan Artyukhov, Sergei Stepanov

P3-6. Transient Processes with Starting of a Multi-pole Asynchronous Motor with a Fan on the Shaft  
Ivan Artyukhov, Sergey Stepanov, **Ekaterina Mirgorodskaya**, Nikita Mityashin, Artem Zemtsov

P3-7. Application of Synchronous Machines’ Models for Distance Learning Purposes  
**Ivan Bachev**, Ludmil Stoyanov, Vladislav Petrov, Emilia Hadjiatanasova-Deleva

P3-8. Adapting Electrical Engineering Assessment for Online Learning  
Ilonka Lilyanova

P3-9. Analysis of the Components of the Magnetic Field Intensity According to the Rotary Theory  
Miroslava Doneva, Vyara Vasileva

P3-10. Investigating the Influence of an Electronic Device’ Properties on Its Temperature Regime  
**Boris Evstatiev**, Nadezhda Evstatieva

P3-11. A Realistic Virtual Lab for Investigation of Single-Phase Transformers  
**Boris Evstatiev**, Katerina Gabrovska-Evstatieva, Dimitar Trifonov
P3-12. Small BEV Propulsion – Problems and Solutions
   Emil Sokolov, Dilo Dilov, Yanko Takavidov

P3-13. Study of linear generators with and without rotating permanent magnets in their stator windings
   Raycho Raychev, Nikola Georgiev

P3-14. Modeling of DC Motor Fed from Photovoltaic Panel
   Dimitar Spirov

P3-15. Investigation of the possibilities for application of a basis-power model in analysing the energy efficiency of type I fluid systems
   Ognyan Dinolov, Lyudmil Mihaylov, Katerina Ilieva, Plamena Dinolova

P3-16. Adapted Algorithm and Web-Developed Software Tool for Basis Power Analysis Using Gravity-Based Model
   Ognyan Dinolov, Katerina Ilieva, Lyudmil Mihaylov, Plamena Dinolova

P3-17. Methodology for determining the socio-economic factors in the performance of Cost-Benefit Analysis for the production of electricity from biomass
   Kiril Anguelov, Kalina Kavaldzhieva

P3-18. Methodology for effectiveness in applying for grant funding for energy effectiveness of enterprises
   Kiril Anguelov, Miglena Angelova
Saturday, 3 July 2021

10:00-11:00 Poster session - Remotely

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**Poster 4**

**Chairman: Iosko Balabozov**

P4-1. A Comparison of Drain-Source Voltage Characteristics for Active and Conventional Gate Control Circuits  
   Svetoslav Ivanov, Yanka Ivanova

P4-2. A Comparison Study of Decisions for Computer Network Laboratory in Distant Learning Education  
   Aydan Haka, Veneta Aleksieva, Hristo Valchanov

P4-3. Active Learning for Teaching “Synthesis and Analysis of Counters” in the Course “Digital Electronics”  
   Adriana Borodzhieva, Ivanka Tsvetkova, Dimitar Dimitrov

P4-4. Air Object Detection Using Pulsar FSR  
   Hristo Kabakchiev, Ivan Garvanov, Vera Behar, Dorina Kabakchieva, Avgust Kabakchiev, Herman Rohling, Mark Bentum, Jorge Fernandes

P4-5. An Analysis of the Impact of the Squirrel-Cage Rotor Faults on the Electromagnetic Torque  
   Maik Sreblau, Marin Marinov, Ivan Rusev

P4-6. Analysis of the Global Solar Radiation and Solar Energy in Ruse, Bulgaria  
   Alexandra Boyadzhieva, Todor Yordanov, Nicolay Mihailov, Katerina Evstatieva

P4-7. Application of Active Methods in Learning the Topic of Diode Limiters Circuits  
   Ivanka Tsvetkova, Adriana Borodzhieva

P4-8. Application of an Inductive Power Transfer System for Charging Modern Electric Vehicles  
   Dobroslav Dankov

P4-9. Comparative Analysis in Parameter Identification of a DC Motor With Independent Excitation  
   Reneta Parvanova, Mariyana Todorova

P4-10. Comparative Assessment of Hybrid PV-Hydrogen Plant: A Case Study for Bulgaria  
   Viktor Garbev
   Prodan Prodanov, Dobroslav Dankov

P4-12. Conceptual Model of a Remote Laboratory for Investigation of DC Motors
   Teodor Nenov, Boris Evstatiev, Seher Kadirova

   Ivaylo Belovski, Kaloyan Ivanov, Analoliy Aleksandrov

P4-14. Determining the Efficiency of an Electric Oven in the Grill Heating Mode
   Yanita Slavova

P4-15. Experimental Determination of The Factors Affecting The Technological Process of Separation With Permanent Magnets
   Tatyana Dimova

P4-16. Express Method for Thermodynamic Diagnostics of Volumetric Hydraulic Systems with Rotary Machines in Operating Conditions
   Petko Petkov, Peycho Tomov, Bohos APRAHAMIAN

P4-17. Impact of Hydroxy Gas for CO₂ Emission Reduction in Diesel Car Engine
   Mihail Simov, Kalin Nikolov, Maik Sreblau

   Veselin Vasilev, Bohos Aprahamian

11:00-12:30  Poster session - Remotely

Poster 5

Chairman: Zahari Zarkov

P5-1. Investigation of Digital Protection Relay For Three-Phase Induction Motor
   Tatyana Dimova

P5-2. Magnetoelectric Structure for Energy Harvesting
   Roman Petrov, Viktor Leontiev, Evgeni Kuzmin, Mirza Bichurin, Alena Petrova, L.A. Nemtsev, Slavcho Bozhkov, Ivan Milenov, Penko Bozhkov
   Yanita Slavova, Mariya Marinova

P5-4. Method for Body Pose Recognition based on Two-Finger Touch Bezel on Wearable Device
   Yuri Dimitrov, Veneta Alekseieva, Hristo Valchanov

P5-5. Methodical Aspects of the Analysis of Non-Harmonic Periodic Signals in Linear Two-Port Circuits
   Hristo Zhivomirov, Ilonka Lilyanova

P5-6. Modeling of Hybrid System with Photovoltaic Panels-Fuel cells Generation and Hydrogen Storage Using Electrolyzer
   Ludmil Stoyanov

P5-7. New Approach for Smart Cities Transport Development Based on the Internet of Things Concept
   Ivan Garvanov, Magdalena Garvanova

P5-8. New Time Indices for the Operational Reliability Assessment Regarding Electronic Items
   Julia Garipova, Anton Georgiev, Toncho Papanchev

P5-9. Numerical Examination of the Performance of an Electrohydraulic System With Discrete Control
   Dragiya Yanulov

P5-10. Optimization of Switching Performance of Power MOSFET with Active Driver with dv/dt Feedback
   Svetoslav Ivanov, Yanka Ivanova

P5-11. Photovoltaic System for LED Lighting Based on Bidirectional Cuk-converter – Computer Research
   Hristo Antchev, Anton Andonov, Kostadin Milanov

P5-12. Project-Based Learning in the Topic of Harmonic Oscillators of Clapp
   Ivanka Tsvetkova, Adriana Borodzhieva

P5-13. PSS/E Based Subsynchronous Resonance Analysis Tool
   Nikolay Nikolaev, Konstantin Gerasimov, Yulian Rangelov, Ara Panosyan, Ngoc Tuan Trinh

P5-14. Regression Model of a Thermoelectric Generator Based on Peltier Modules
   Ivaylo Belovski, Kaloyan Ivanov, Analoliy Aleksandrov, Irina Aleksandrova

P5-15. Simulation Environment for Research of Algorithms for Traffic Prioritisation in ZigBee Network
   Aydan Haka, Veneta Alekseieva, Hristo Valchanov
P5-16. Study and Analysis of Efficiency of Recuperative Energy Utilization in Ground Urban Electric Transport
   Georgy Pavlov, Lyubomir Sekulov

P5-17. Study of the Power Modes of Skoda Solaris 26Tr and 27Tr Trolleybuses
   Ilko Tarpov, Martina Tomcheva

P5-18. Thermodynamic Modelling of the oil Tank as a Subsystem in Hydraulic Power Drives
   Peycho Tomov, Dragiya Yanulov, Petko Petkov

P5-19. Investigation of the influence of current harmonics generated by crane systems on some parameters of the power supply systems
   Neli Simeonova, Mladen Proykov

P5-20. Research, analysis and rationalization of the operating regimes of the power supply system of K.K. "Sunny Beach"
   Neli Simeonova, Mladen Proykov

P5-21. Study of the electricity efficiency in the implementation of an energy management system in an industrial site of the electrical industry
   Neli Simeonova, Mladen Proykov, Stanislav Simeonov

12:30-14:00         Lunch Break

14:00-16:00          Participants’ discussions on the conference topics

Sunday, 4 July 2021

10:00-16:00          Round tables and participants’ discussions

Conference closing