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Faculty of Electrical Engineering

IEEE

XVI

**Electrical Engineering Faculty
Conference**

BULEF 2024

Program

Bulgaria, Varna,
September 19 - 22, 2024
Resort „Golden Sands“



PROGRAM

19.09.2024

17:00-18:00 - Registration of conference participants
18:00-19:00 - "Welcome" cocktail "Belle View" terrace

20.09.2024

09:00-09:15 - Opening of the conference (hall 1)
09:15-11:00 - Sessions 1-1¹ and 2-1 (hall 1 and 2)
11:00-11:15 - Coffee break
11:15-12:45 - Sessions 2-2 and 1-2 (halls 1 and 2)
12:45-14:00 - Lunch break - "Aqua" restaurant
14:00-15:00 - Company presentations (hall 1)
15:00-17:00 - Sessions 4-1 and 1-3 (halls 1 and 2)
17:00-17:15 - Coffee break
17:15-18:45 - Sessions 1-4 and 3-1 (halls 1 and 2)
20:00-23:00 - Official dinner at the "Rustic" restaurant

21.09.2024

09:00-11:00 - Sessions 2-3 and 4-2 (halls 1 and 2)
11:00-11:15 - Coffee break
11:15-12:45 - Sessions 4-3 and 2-4 (halls 1 and 2)
12:45-14:00 - Lunch break - "Aqua" restaurant
14:00-15:00 - Presentation of SIEMENS Energy (hall 1)
15:00-16:30 - Sessions 2-5 and 4-4 (halls 1 and 2)
16:30-16:45 - Coffee break
16:45-17:45 - Sessions 2-6 (hall 1)
17:45-18:00 - Closing of the conference (hall 1)

22.09.2024

Leaving the hotel

¹ Session Number Legend "Thematic Section – Sequence session number"



Additional Information

- Thematic Section are:
 - 1 *The electrical power sector and the market*
 - 2 *Energy efficiency and renewable sources of electrical energy*
 - 3 *Lighting*
 - 4 *Studies and analyses on processes and phenomena*
- The presentations for presenting the reports should be in *.ppt or *.pptx formats. The organizers provide the necessary technical support.
- Authors will be able to present their papers in two ways: in person or online (remotely) according to the given conference program.
- Reviewers for each paper will be determined by the conference program committee.
- In order to be published in the IEEE Xplore Digital Library, the presented reports must:
 - ✓ to be formatted according to IEEE requirements - a template is given at <http://ef-conference.tu-sofia.bg/mod/page/view.php?id=8> ;
 - ✓ to upload the files with the finished reports to the [OpenConf-BuleF](#) conference management system from the main menu of the conference website;
 - ✓ to transfer copyright to IEEE;
 - ✓ according to the IEEE publication policy, papers will be double-reviewed and checked for plagiarism.

Information about remote participation

The MS Teams platform will be used for remote participation in the conference.

Each remote participant must:

- on the day and time of the program section to join the meeting, through the link provided by the organizers on the website <https://openconf.bulef.org//openconf.php> ; we recommend that the request for inclusion in the meeting be made 5-10 minutes before the start of the meeting;
- have a prepared presentation to share via MS Teams, in the order given in the conference program or determined by the meeting moderator.

From the Organizing Committee

**OPENING OF THE CONFERENCE****20.09.2024**

09:00-09:15 Hall: 1 - Opening of the conference

Session 1-1**„THE ELECTRICAL POWER SECTOR AND THE MARKET”****20.09.2024**09:15-11:00² **Hall: 1**

Chair: assoc. prof. Rad Stanev

Secretary: eng. Dimo Siderov

ID	Title	Authors	Institution
10	RES digital twin for smart energy management flexibility research and development	Metody Georgiev, Alexandra Georgieva, Desislava Stoitseva-Delicheva, Dilyana Gospodinova, Kostadin Milanov	Technical University of Sofia
44	An evaluation of humidified discharge cycle for pumped heat energy storage	Ana Borissova, Kaloyan Hristov, Stefan Todorov, Dimityr Popov	Technical University of Sofia
45	Exploring Pan-European Electricity Markets: Segments, Coupling Mechanisms and Pricing Structures	Monika Mladenova, Rad Stanev	Technical University Sofia
53	An evaluation of high temperature energy storage with humidified gas turbine discharge cycle	Ana Borissova, Kaloyan Hristov, Stefan Todorov, Dimityr Popov	Technical University of Sofia
55	Impact of Inaccurate Line Impedance Data on Distance Protection Performance in 220kV Overhead Lines. Study Case: Delayed Tripping Effects in Voltage Stability	Genç Sejdiu, Nuri Berisha, Rad Stanev	Technical University of Sofia
58	A case study: soil composition, thermal and electrical resistance in the context of cable line design	Nikolay Nikolaev, Georgi Georgiev, Yulian Rangelov, Dimitar Georgiev	Technical University of Varna

² Estimated time for presentation and questions – 12 minutes



ID	Title	Authors	Institution
59	Participation of Energy Storage Systems in the Active Power Balance for the Bulgarian Power System	Georgi Georgiev, Yulian Rangelov, Dimitar Hristov	Technical University of Varna
60	A Power System Stability Laboratory for Modern Power and Energy Systems Education, Research and Innovation using Power Hardware and Human in the Loop (PHHiL) Testing	Rad Stanev	Technical University of Sofia

Session 2-1

„ENERGY EFFICIENCY AND RENEWABLE SOURCES OF ELECTRICAL ENERGY”

20.09.2024

9:15-11:00

Hall: 2

Chair: assoc. prof. Merima Zlateva

Secretary: assistant prof. Borislav Angelov

ID ³	Title	Authors	Institution
5	Calculation of the energy efficiency of a passenger shipping company depending on the degree of occupancy of the ships	Ginka Ivanova, Ilyan Donev, Dencho Dobrev, Plamen Parushev, Valentin Enchev, Nikola Makedonski	Technical University of Varna
7	Possibilities to ensure the thermal power plant's own consumption by using solar radiation utilization technologies	Merima Zlateva, Totyo Totev, Borislav Angelov	Trakia University Stara Zagora
14	Investigation of the energy efficiency of a ship at different generator loads	Ginka Ivanova, Ilyan Donev, Dencho Dobrev, Plamen Parushev, Valentin Enchev, Nikola Makedonski	Technical University of Varna
24	Photovoltaic Panel Performance Analysis under Shading Conditions	Galina Cherneva, Simona Filipova-Petrakieva	Technical University of Sofia

³ ID is the conference management system registration number [OpenConf-BulEF](#)



ID³	Title	Authors	Institution
25	Study of the electricity consumption of TU-Varna by using a SCADA system	Hristian Panchev, Nikola Makedonski, Plamen Parushev, Milen Duganov	Technical University of Varna
27	Study of electrical losses in the operation of electric transport	Plamen Parushev, Ginka Ivanova, Nikola Makedonski, Hristian Panchev, Milen Duganov	Technical University of Varna
28	Investigation of biogas, methane, and CO ₂ production with the addition of <i>Urtica Dioica</i> (dry and fresh) in a laboratory anaerobic reactor.	Anelia Tzanova	Technical University of Sofia
29	Increasing the electrical efficiency of compressors	Plamen Parushev, Nikolay Kanchev, Ginka Ivanova, Nikola Makedonski, Hristian Panchev, Milen Duganov	Technical University of Varna

11:00-11:15 **Coffee break**

Session 2-2

„ENERGY EFFICIENCY AND RENEWABLE SOURCES OF ELECTRICAL ENERGY”

20.09.2024

11:15-12:45 **Hall: 1**

Chair: assoc. prof. Evgeniya Vasileva

Secretary: assistant prof. Mincho Velkov

ID	Title	Authors	Institution
30	Influence of Dairy Cattle Diet on Manure's Methanogenic Potential for Biogas Generation	Bozhidar Stefanov, Anelia Tzanova	Technical University of Sofia
33	Assessment of the reliability of wind farms	Evgeniya Vasileva, Ivelina Takeva- Beberova	Technical University of Sofia, Faculty of Engineering and Pedagogy, Sliven



ID	Title	Authors	Institution
34	Optimizing the operation of a photovoltaic system through fuzzy logic	Vanyo Donev, Evgeniya Vasileva	Technical University of Sofia, Faculty of Engineering and Pedagogy, Sliven
36	Thermal Management of Battery Energy Storage Systems	Alexander Rangelov, Peter Petrov, Svetlana Tzvetkova, Borislav Bojchev	Technical University of Sofia
37	Comparison of the Performance of a 30 kWp Photovoltaic Plant Depending on its Orientation.	Borislav Bojchev, Polina Petkova	Technical University of Sofia
38	Assessment of electricity production at photovoltaic power plants with optimal slope and orientation, monitoring and oriented, east – west	Mincho Velkov, Stanimir Stefanov, Vultchan Gueorgiev	Technical University of Sofia, Plovdiv Branch
39	Cost optimization for district or street lighting through a photovoltaic plant mounted above the luminaires, equipped with a hybrid inverter, batteries and connected to the public grid	Mincho Velkov	Technical University of Sofia, Plovdiv Branch

Session 1-2
„THE ELECTRICAL POWER SECTOR AND THE MARKET”

20.09.2024

11:15-12:45 **Hall: 2**

Chair: prof. Dimo Stoilov

Secretary: eng. Kristina Hadzhiyska

ID	Title	Authors	Institution
2	New goals: updates of national energy planning scenarios	Kristina Hadzhiyska, Dimo Stoilov, Konstantin-Kiril Savov	Technical University of Sofia
4	A review of interoperability challenges and solutions towards a digital twin of the European electricity grid	Stamatis Diakakis, Pencho Zlatev, Nikolay Palov, Theodoros I. Maris, Atanasios Santas, Maria Papadimitriou	Setechco Ltd



ID	Title	Authors	Institution
6	Technical economic analysis of composite elements in distribution networks	Velichko Atanasov, Nikola Nikolov, Dimo Stoilov	Technical University of Sofia
46	Comparative Analysis of Technical Solutions for Secondary Systems in Substations with a „Breaker-and-a-Half “Scheme	Lyudmil Kirilov, Daniel Dobrilov, Ivan Tenchev, Valeri Uzunov, Adelin Antonov	Technical University of Sofia
48	Configuration and Optimization of Impedance Protection for Power Transformers	Lyudmil Kirilov, Daniel Dobrilov, Ivan Tenchev, Valeri Uzunov, Adelin Antonov	Technical University of Sofia
49	Solar Power Plant Sizing according to Feed in Tariff Sales Constraints by Considering Harmonic Losses	Sait Gazi Yildirim, Ali Durusu, Oktay Arikan	Yıldız Technical University
51	Python-Based Application Development for Electrical Base Price Estimation and Bidding Based on Consumption Data for Microgrids	Kerem Görkem Kablan, Sait Gazi Yildirim, Ali Durusu	Yıldız Technical University

12:45-14:00 **Lunch break** - Aqua restaurant

14:00-15:00 **ERM Zapad EAD** - „BESS Siting” Antoaneta Kalenderova (Hall 1)

Session 4-1 **„STUDIES AND ANALYSES ON PROCESSES AND PHENOMENA”**

20.09.2024

15:00-17:00 **Hall: 1**

Chair: prof. Vasil Dimitrov

Secretary: assistant prof. Tsvetomir Stoyanov

ID	Title	Authors	Institution
1	Investigation of the cooling of a permanent magnet synchronous motor with different types of coolants	Tsvetomir Stoyanov, Plamen Rizov	Technical University of Sofia



ID	Title	Authors	Institution
3	Monitoring and digitalization technologies for HV power cable systems	Georgios Fotis, Vasiliki Vita, Valeri Mladenov	Department Fundamentals of Electrical Engineering, Technical University of Sofia
11	Analysis of transient processes during short-circuits in dc traction networks for urban transport	Vasil Dimitrov, Todor Lalev	Todor Kableshkov University of Transport – Sofia
12	Determination of relay protection settings for dc traction networks under non-standard section power supply	Todor Lalev	Todor Kableshkov University of Transport – Sofia
13	Modernization of relay protection of subway traction substation	Martin Getov, Vasil Dimitrov	Todor Kableshkov University of Transport – Sofia
15	Methods for measurement of electrical characteristics of soils. A review.	Rositsa Dimitrova, Georgi Georgiev, Milena Ivanova, Yulian Rangelov	Technical University of Varna
16	Study of the soil resistivity in field measurements and laboratory conditions.	Georgi Georgiev, Nikolay Nikolaev, Yulian Rangelov, Dimitar Georgiev, Rositsa Dimitrova, Milena Ivanova	Technical University of Varna
17	Comparison between laboratory methods for determining the specific resistance of soil samples	Milena Ivanova, Rositsa Dimitrova, Georgi Georgiev, Yulian Rangelov, Yoncho Kamenov, Mediha Mehmed- Hamza	Technical University of Varna
18	Analysis of electromagnetic fields onboard vessels with electric propulsion with operating voltage 11 kV at different loading	Emil Barudov, Milena Ivanova, Miroslava Doneva	Technical University of Varna
20	A real-life comparative analysis of an agricultural and wooden pellets	Orlin Tomov	University of Ruse "Angel Kanchev"



Session 1-3 „THE ELECTRICAL POWER SECTOR AND THE MARKET”

20.09.2024

15:00-17:00 **Hall: 2**

Chair: assoc. prof. Nikolai Vitkov

Secretary: eng. Hristo Hristov

ID	Title	Authors	Institution
8	Reliable wireless communication in the territorial distribution of power facilities part 1	Angel Tsolov, Hristo Hristov, Bozhidar Zlatanov	Technical University of Sofia
9	Reliable wireless communication in the territorial distribution of power facilities part 2	Hristo Hristov	Technical University of Sofia
19	Methods for active and passive reconnaissance in grid substation control systems	Angel Tsolov, Hristo Hristov, Bozhidar Zlatanov	Technical University of Sofia
54	The role of low carbon flexibility for the security of supply in the decarbonized power system	Irena Beloreshka, Yordanka Angelova, Vesselin Chobanov	Faculty of Management, Technical University of Sofia
56	Implementation of an electrical energy storage system in an existing small hydropower plant	Ivan Tenchev, Daniel Dobrilov, Slav Dimitrov, Valeri Uzunov, Lyudmil Kirilov	Technical University of Sofia
57	AI in modern energy systems	Samet Omar, Lyudmil Kirilov, Daniel Dobrilov	Technical University of Sofia
61	Evolution of Bulgaria's energy and climate policy in recent years	Nikolai Vitkov	Technical University of Sofia
62	Case studies of incidents with voltage up to 1000V - electrical injuries and their causes	Nikolai Vitkov	Technical University of Sofia
116	Analysis of the effect of the use of mobile bulb-turbines in the hydropower utilization of the water potential of the Danube River: Technical characteristics of the generation unit	Plamen Dilkov	Technical University of Sofia

17:00-17:15 **Coffee break**

Session 1-4
„THE ELECTRICAL POWER SECTOR AND THE MARKET”

20.09.2024

17:15-18:45⁴ **Hall: 1**

Chair: prof. Dimo Stoilov

Secretary: assoc. prof. Velichko Atanasov

ID	Title	Authors	Institution
65	Overview on contemporary constructions of high voltage cables	Nikola Nikolov, Dimo Stoilov, Velichko Atanasov	Technical University of Sofia
66	Methods for metal screens bonding of high voltage cable lines	Nikola Nikolov, Dimo Stoilov, Velichko Atanasov	Technical University of Sofia
85	Capital costs estimate method: Cost-benefit analysis	Milen Trifonov, Valentin Kolev, Iva Draganova-Zlateva	Technical University of Sofia
86	Capital and operational costs estimate methods: Benchmarking	Milen Trifonov, Valentin Kolev	Technical University of Sofia
97	A Model for Step-by-Step Implementation of Negotiation Strategies in the Energy Sector	Marina Marinova-Stoyanova	Technical University of Varna
98	Sustainable Models for the Development of the Energy Sector Post-COVID-19	Marina Marinova-Stoyanova	Technical University of Varna
110	Communication environment and protocols using in digital stations	Dinko Georgiev	Technical University of Sofia

⁴ Estimated time for presentation and questions – 12 minutes



Session 3-1 „Lighting”

20.09.2024

17:15-18:45 **Hall: 2**

Chair: assoc. prof. Ivan Angelov

Secretary: eng. Kamen Georgiev

ID	Title	Authors	Institution
21	Street lighting and renewable energy sources	Stanimir Stefanov	Technical University - Sofia, Plovdiv branch
35	Results of Reducing Energy Costs of Public Buildings by Controlling Lighting in Common Areas	Polina Petkova, Iva Petrinska	Technical University of Sofia
79	Calibration of luminance meters for lighting control in road tunnels	Dimityr Pavlov, Kamen Georgiev, Kiril Kassev, Angel Pachamanov	Technical University of Sofia
80	Polychromatic lighting system for winter sports under various weather conditions	Dimityr Pavlov, Kamelia Nikolova, Rad Stanev, Alexandar Dilchev	Technical University of Sofia
81	Fog Detector for Intelligent Control of Ski Slope Lighting Systems	Ivan Angelov, Dimityr Pavlov, Rad Stanev	Technical University of Sofia
96	Intelligent lighting system controlled by IoT	Kiril Genev, Gergana Vacheva, Nikolay Hinov	Technical University of Sofia

20:00

Official dinner - Restaurant Rustic



Session 2-3

„ENERGY EFFICIENCY AND RENEWABLE SOURCES OF ELECTRICAL ENERGY”

21.09.2024

09:00-11:00

Hall: 1

Chair: assoc. prof. Svetlana Tzvetkova

Secretary: assistant prof. Yavor Lozanov

ID	Title	Authors	Institution
41	Using battery energy storage system to shift the load schedules of consumers outside of the hours of the day with the highest prices	Ventsislav Kalpachki, Simona Seferinkina, Angel Tzolov	Technical University of Sofia
42	Assessment of sulfur oxides emissions from boilers burning Bulgarian lignite	Borislav Angelov, Totyo Totev	Trakia University
47	Photovoltaic Energy Production Modeling Using Linear Regression Models in MS Excel	Alexandra Georgieva, Metody Georgiev, Dimitar Ivanov	Technical University of Sofia
63	Optimizing OPEX for critical sites in remote desert areas	Peter Petrov, Alexander Rangelov, Svetlana Tzvetkova, Borislav Bojchev	Technical University of Sofia
67	Technological integration assessment for the available equipment of the 177 MW power units into the CCGT	Totyo Totev, Borislav Ignatov, Vasil Radenkov	Trakia University
68	Thermal design calculation of boilers type PK-38-4M in operation with gas turbines	Vasil Radenkov, Borislav Ignatov, Totyo Totev	Trakia University
69	Techno-economic and ecological assessment of power units with PK-38-4M natural gas-fired boilers	Borislav Ignatov, Vasil Radenkov, Totyo Totev	Trakia University
76	Thermographic assessment of the technical condition of photovoltaic power plants – A case study	Svetlana Tzvetkova, Yavor Lozanov, Angel Petleshkov	Technical University of Sofia
77	Model-comparative analysis of MPPT algorithms for control DC/DC converters used in PV systems	Yavor Lozanov, Svetlana Tzvetkova,	Technical University of Sofia



ID	Title	Authors	Institution
78	Management of material stocks for preventive maintenance of electrical equipment	Svetlana Tzvetkova, Yavor Lozanov, Angel Petleshkov	Technical University of Sofia

Session 4-2
„STUDIES AND ANALYSES ON PROCESSES AND PHENOMENA”

21.09.2024

09:00-11:00

Hall: 2

Chair: assoc. prof. Borislav Bojchev

Secretary: assistant prof. Polina Petkova

ID	Title	Authors	Institution
22	Driver Assistance System, based on the Convolutional Neural Network	Petar Yanev, Simona Filipova-Petrakieva	Technical University of Sofia
23	Synthesis of Linear Passive One-ports and Their Applications	Simona Filipova-Petrakieva, Yordan Shopov	Technical University of Sofia
26	An experimental study on the power conditioning in an electrical network	Nikola Makedonski, Plamen Parushev, Hristian Panchev, Milen Duganov	Technical University of Varna
31	Modeling Of Stray Currents Induced by DC Rail Transport in Sofia	Vultchan Gueorgiev, Polina Petkova	Technical University of Sofia
32	Methods For Reducing Stray Currents Due to DC Rail Transport in Sofia	Polina Petkova, Vultchan Gueorgiev	Technical University of Sofia
43	Reduction of No-Load Loss of Transformers Supplying Large Trading Centers with Installed Photovoltaic Plants for Their Own Needs	Borislav Bojchev, Nikolay Savov	Technical University of Sofia
50	An open - source solar charge controller for LVDC systems	Dimo Siderov, Rad Stanev, Kostadin Viglov, Teodora Todorova	Technical University of Sofia



ID	Title	Authors	Institution
52	Study of the reliability of railway safety systems	Emiliya Dimitrova	Todor Kableshkov University of Transport – Sofia
70	IoT system for locating destructive processes in nuclear power plants	Siya Lozanova, Chavdar Roumenin, Martin Ralchev	Bulgarian Academy of Sciences Institute of Robotics Sofia, Bulgaria
71	Application of a Cryogenic Electromagnetic System for Optimization and Analysis of Current Sensors	Siya Lozanova, Chavdar Roumenin, Martin Ralchev	Bulgarian Academy of Sciences, Institute of Robotics Sofia, Bulgaria
72	Additive digital technologies in robotics and mechatronics	Siya Lozanova, Chavdar Roumenin, Martin Ralchev, Avgust Ivanov	Bulgarian Academy of Sciences, Institute of Robotics Sofia, Bulgaria

11:00-11:15 **Coffee break**

Session 4-3
„STUDIES AND ANALYSES ON PROCESSES AND PHENOMENA”

21.09.2024

11:15-12:45 **Hall: 1**

Chair: prof. Dilyana Gospodinova
Secretary: assistant prof. Martin Ralchev

ID	Title	Authors	Institution
40	Effect of ETL and HTL Layers on The Performance of Perovskite Solar Cells Using SCAPS-1D Algorithm	Abdullah Muslim, Elif Altürk, Işıl Bilgiç	İstanbul Okan University
64	Use of Finite Element Method Computing as a Decision Aid in the Design of Transformers	Kamran Dawood	Astor Enerji



ID	Title	Authors	Institution
73	Experimental Assessment of No-Load and Load Losses in Dry-Type and Oil-Filled Transformers	Kamran Dawood, Furkan Gezer, Feyza Köse, Semih Tursun	Astor Enerji
74	Cost and Weight Comparison between Dry-Type Transformer and Oil-Type Transformer	Kamran Dawood, Furkan Gezer, Semih Tursun	Astor Enerji
75	Evaluation of electromechanical failure of nodal systems and components in wind power generation systems by neural network	Ivan Torlakov, Evgeniya Vasileva, Ekaterina Gospodinova	Technical University of Sofia, Faculty of Engineering and Pedagogy, Sliven
82	Thermal insulation properties of textile structures with the participation of nano non-woven mats	Dilyana Gospodinova, Rosen Tsekov, Margarita Neznakomova	Technical University of Sofia
83	UV modification of non-woven filters from waste wool fibers for treatment of waters polluted with oil products	Dilyana Gospodinova, Mihail Panchev, Margarita Neznakomova	Technical University of Sofia
84	A Review on Electrical Process Parameters of Electrospinning	Momchil Shopov, Dilyana Gospodinova	Technical University of Sofia

Session 2-4

„ENERGY EFFICIENCY AND RENEWABLE SOURCES OF ELECTRICAL ENERGY”

21.09.2024

11:15-12:45 **Hall: 2**

Chair: assoc. prof. Ivan Angelov

Secretary: assoc. prof. Mihaela Slavkova

ID	Title	Authors	Institution
90	Analysis of conventional and hybrid solar low-power photovoltaic systems	Tomislav Atanasov, Mihaela Slavkova	Technical University of Sofia
92	Stability analysis of parallel DC-AC converter for induction heating	Gergana Vacheva, Plamen Stanchev, Nikolay Hinov	Technical University of Sofia



ID	Title	Authors	Institution
93	Optimal load schedule in medium sized enterprises	Gergana Vacheva, Plamen Stanchev, Nikolay Hinov	Technical University of Sofia
95	Decentralized sources for charging light-duty electric vehicles with an application in a forwarding company	Andrei Borisov, Gergana Vacheva, Nikolay Hinov	Technical University of Sofia
99	Application of micro and mini photovoltaic systems in the household	Petar Stoev, Nikolay Matanov, Plamen Nankinsky	Technical University of Sofia
100	Model and simulation analysis of the performance of a micro inverter photovoltaic system for the household	Petar Stoev, Nikolay Matanov	Technical University of Sofia
101	A study of load unbalance on low voltage grid	Nikolay Matanov, Ivan Angelov, Petar Stoev	Technical University of Sofia

12:45-14:00 **Lunch break** - Aqua restaurant

14:00-15:00 **Presentation of company** (Hall 1)

Session 2-5

„ENERGY EFFICIENCY AND RENEWABLE SOURCES OF ELECTRICAL ENERGY”

21.09.2024

15:00-16:30 **Hall: 1**

Chair: assoc. prof. Iva Draganova-Zlateva

Secretary: assistant prof. Valentin Milenov

ID	Title	Authors	Institution
87	Influence of Technological Processes on the Electrical Properties of Electrotechnical Materials	Ana Dimitrova, Iva Draganova-Zlateva, Stanimir Stefanov	Technical University of Sofia, Plovdiv Branch



ID	Title	Authors	Institution
104	Assessing Battery Storage Feasibility for a 30kW PV Power Plant in the Bulgarian Electricity Market	Valentin Milenov, Zahari Zarkov	Technical University of Sofia
105	Enhancing Portable Cabin Power Supply with Bi-Facial PV Panels	Valentin Milenov	Technical University of Sofia
106	Study of process of recycle of PV panels	Mariana Mitova, Valentin Milenov	Technical University of Sofia
107	Technical and economic advantages of energy storage systems and their applicability in Bulgaria	Tomislav Atanasov	Technical University of Sofia
108	Investigation of the energy performance of a hot water production system	Tomislav Atanasov	Technical University of Sofia
109	Energy Expediency Analysis of Implementation of Solar Thermal System for Hot Water Production	Rosen Tsekov	Technical University of Sofia

Session 4-4

„STUDIES AND ANALYSES ON PROCESSES AND PHENOMENA”

21.09.2024

15:00-16:30 **Hall: 2**

Chair: assoc. prof. Kostadin Milanov

Secretary: assoc prof. Mihaela Slavkova

ID	Title	Authors	Institution
88	Modification of the Structure of Electrotechnical Aluminum Using Nanocarbon Particles	Ana Dimitrova, Boyan Dochev, Ivan Panov	Technical University of Sofia, Plovdiv Branch
89	Some peculiarities in the joint operation of a supercapacitor and a lead-acid battery	Kostadin Milanov, Dilyana Gospodinova	Technical University of Sofia
91	Influence of commutation overvoltage's on the operation of electrical converters fed by direct current buses	Kostadin Milanov, Evgenia Vasileva, Kaloyan Racev	Technical University of Sofia



ID	Title	Authors	Institution
94	Experimental studies of thermal loading of toroidal transformers	Kostadin Milanov, Georgi Tomov, Mihaela Slavkova	Technical University of Sofia
102	Analysis and optimization of training time of ML classifiers	Hristo Milushev	Nikola Vaptsarov Naval Academy
103	Optimization of bagging classifier for diagnosis of marine electric drives	Georgi Enchev	Nikola Vaptsarov Naval Academy
117	Effect of inductance on the output voltage of a frequency converter	Kostadin Milanov, Metody Georgiev, Dilyana Gospodinova	Technical University of Sofia

16:30-16:45 **Coffee break**

Session 2-6

„ENERGY EFFICIENCY AND RENEWABLE SOURCES OF ELECTRICAL ENERGY”

21.09.2024

16:45-17:45 **Hall: 1**

Chair: assoc. prof. Angel Petleshkov

Secretary: eng. Kamen Georgiev

ID	Title	Authors	Institution
111	Possibilities of optimizing the mode of operation of photovoltaic plants	Miroslav Angelov, Anton Adamov, Momchil Lukov	Technical University of Varna
112	Creation of rational technical solutions in the construction of photovoltaic systems	Miroslav Angelov, Anton Adamov, Momchil Lukov	Technical University of Varna
113	Optimal calculation and distribution of electrical energy transfer capacities in the "Day Ahead" segment	Velislav Georgiev, Momchil Lukov	Technical University of Varna
114	Increasing electrical energy efficiency by optimizing electrical load schedules in the electrical supply systems of industrial sites	Ilian Iliev, Rumen Kirov	Technical University of Varna



ID	Title	Authors	Institution
115	Application of a Dualistic Approach to Reactive Load Compensation and Voltage Regulation to Improve the Energy Efficiency of Power Supply Systems	Ilian Iliev, Rumens Kirov	Technical University of Varna

17:45-18:00 **Closing the conference (Hall 1)**

Nice and successful work to all participants and guests of the conference



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СПОНСОРИ



KWP



НАЦИОНАЛНА
ЕЛЕКТРИЧЕСКА
КОМПАНИЯ ЕАД



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