

**16-th INTERNATIONAL CONFERENCE
ON ELECTRICAL MACHINES,
DRIVES AND POWER SYSTEMS**

ELMA 2019

6-8 June 2019, Varna, Bulgaria

**Organized by:
Union of Electronics, Electrical Engineering and Telecommunications (CEEC)**

 **IEEE**
Bulgarian Section

With the support of:

Technical University of Sofia

Technical University of Varna

Technical University of Gabrovo

University of Rouse "Angel Kanchev"

Federation of Scientific and Technical Unions

Bulgarian Association on Electrical Engineering and Electronics (BASSEL)

PROGRAM

CONFERENCE VENUE

16-th International Conference on Electrical Machines, Drives and Power Systems ELMA 2019 will be held in Varna, in the "Aqua Azur" Hotel, Varna Municipality and Yunashki Salon Varna

Conference site: <http://elma.vtp-tuv.com>

e-mail: elma@vtp-tuv.com

TIME TABLE

Day	Time	
Thursday, 6 June	9:00	Registration - Varna Municipality
	10:00	Opening Ceremony (Plenary Hall) - Varna Municipality
	10:45	Plenary Session (Plenary Hall) Varna Municipality
	12:30	Lunch – Restaurant "Halbata" Varna
	14:00	Workshop – Yunashki Salon Varna (Presentations and exhibition of companies operating in the scientific domains of the conference)
	17:30	Welcome Cocktail - Yunashki Salon Varna

Day	Time	"Aqua Azur" Hotel
Friday, 7 June	9:00	Registration – Registration desk (Reception level of the hotel)
	9:30-11:00	Oral session 1 – Hall 1 Oral session 2 – Hall 2 Oral session 3 – Hall 3
	11:00-11:30	Coffee break (Lobby bar at the reception level of the hotel)
	11:00-13:00	Poster session 1 (Conference block of the hotel)
	11:30-13:00	Oral session 1 – Hall 1 (continue) Oral session 2 – Hall 2 (continue)
	13:00	Lunch (Restaurant of the hotel)
	14:00-15:45	Poster session 2 (Conference block of the hotel)
	14:30-16:00	Oral session 4 – Hall 1 Oral session 5 – Hall 2

	16:00-16:30	Coffee break (Lobby bar at the reception level of the hotel)
	16:30-18:00	Poster session 3 (Conference block of the hotel)
	20:00	Dinner (Restaurant of the hotel)

Day	Time	"Aqua Azur" Hotel
Saturday, 8 June	9:30	Oral session 6 – Hall 1
	9:30-11:30	Poster session 4 (Conference block of the hotel)
	9:30	Excursion (Aladzha monastery, departure from the hotel)
	14:00	Closing Ceremony – Hall 1

PROGRAM
16-th INTERNATIONAL CONFERENCE
ON ELECTRICAL MACHINES,
DRIVES AND POWER SYSTEMS

Thursday, 6 June

09:00

Registration
Municipality Varna

OPENING CEREMONY

Municipality Varna
10:00

PLENARY SESSION

Thursday, 6 June
Plenary Hall – Municipality Varna
10:45

Chairman: Bohos Aprahamian

- 1) CURRENT DEVELOPMENTS OF ELECTROMECHANICAL DEVICES IN NRU MPEI
Pavel Kurbatov
 - 2) ACTIVE BATTERY BALANCING VIA A SWITCHED DC/DC CONVERTER:
DESCRIPTION AND PERFORMANCE ANALYSIS
David García Elvira, Hugo Valderrama Blaví, Josep María Bosque Moncusí, Àngel Cid Pastor, Juan Antonio Garriga Castillo, Luis Martínez Salamero
 - 3) CASCADED OBSERVERS FOR THE ROTOR POSITION, SPEED AND LOAD
TORQUE OF THE PMSM USING AN EXTENDED DYNAMIC MODEL
Mihai Comanescu
-

LUNCH

Thursday, 6 June
Restaurant “Halbata” Varna
12:30

WORKSHOP

Thursday, 6 June
14:00
Yunashki Salon Varna
(Presentations and exhibition of companies operating in the scientific domains of the
conference)

WELCOME COCKTAIL

Thursday, 6 June
Yunashki Salon Varna
17:30

ORAL SESSION 1

Friday, 7 June

Hall 1

09:30

“Aqua Azur” Hotel

Chairman: Maik Streblau

9:30-9:45 INFLUENCES OF JOINING PROCESS PARAMETERS ON STATOR AND ROTOR CORES FOR ELECTRIC DRIVES

Marco Ziegler, Michael Biburger, Alexander Kuehl, Joerg Franke

9:45-10:00 INTELLIGENT CONTROL OF A WIND TURBINE BASED ON REINFORCEMENT LEARNING

Nikita Tomin, Victor Kurbatsky, Huseyngulu Guliev

10:00-10:15 SHIP POWER SYSTEM QUALITY STUDY INCLUDING PERMANENT MAGNET SYNCHRONOUS MOTOR AND INDUCTION MOTOR DRIVES

Nikolay Djagarov, Milen Bonev, Zhivko Grozdev, Hristo Milushev, Julia Djagarova, Dimitar Tsvetanov, Georgi Enchev

10:15-10:30 SHIP'S INDUCTION MOTORS FAULT DIAGNOSIS

Nikolay Djagarov, Zhivko Grozdev, Georgi Enchev, Julia Djagarova

10:30-10:45 ELECTRICAL COIL THERMAL PARAMETERS DETERMINATION BY EXPRESS EXPERIMENTAL DATA PROCESSING

Denitsa Darzhanova, Zaharinka Gergova, Petar Darjanov

10:45-11:00 IRON- CORED ELECTRICAL WINDING EQUIVALENT THERMAL PARAMETERS INVESTIGATION FOR TRANSIENT RESPONSE SIMULATION

Petar Darjanov, Denitsa Darzhanova, Zaharinka Gergova

11:00-11:30 COFFEE BREAK

Friday, 7 June

11:30-11:45 MODIFIED LOW-FREQUENCY FILTER FOR SIGNAL SPECTRUM LIMITATION AT ANALOG-DIGITAL CONVERTER'S INPUT WITH DIFFERENTIAL INPUT

Darya Yu. Denisenko, Evgeniy A. Zhebrun, Nikolay N. Prokopenko, Yuriy Iv. Ivanov

11:45-12:00 BASIC FUNCTIONAL CJFET OP-AMP NODES FOR OPERATION AT LOW TEMPERATURES AND AT CONDITIONS OF PENETRATING RADIATION

Anna V. Bugakova, Darya Yu. Denisenko, Nikolay N. Prokopenko, Alexey E. Titov

12:00-12:15 INCREMENTAL CONDUCTION METHOD BASED ON MPPT FOR DC-DC BOOST CONVERTER

Zafer Ortatepe, Ahmet Karaarslan

12:15-12:30 EXTENDED KALMAN FILTER DESIGN FOR MODEL PREDICTIVE ROTOR CURRENT CONTROLLED DFIG

Zafer Ortatepe, Ahmet Karaarslan

12:30-12:45 A REDUCED ORDER OBSERVER FOR SENSORLESS CONTROLLED
DOUBLY FED INDUCTION GENERATOR

Zafer Ortatepe, Ahmet Karaarslan

12:45-13:00 STUDY OF THE IMPACT OF INDUCTION MOTORS' STARTING ON THE
SUPPLY VOLTAGE

Nikolay Matanov

ORAL SESSION 2

Friday, 7 June

Hall 2

09:30

“Aqua Azur” Hotel

Chairman: Chavdar Alexandrov

9:30-9:45 SIMULATION BASED APPROACH FOR DETERMINING THE BATTERY
CONTROL STRATEGY OF A PV AND BATTERY PILOT SYSTEM

Vladimir Gjorgievski, Kiril Demerdziev, Bodan Velkovski, Vladimir Shokarovski, Dimitar Dimitrov, Sanja Veleva, Marija Kacarska

9:45-10:00 IMPLICATIONS OF RESIDENTIAL BATTERY CHARGE AND DISCHARGE
RATES ON SELF-CONSUMPTION AND PEAK POWER EXCHANGE

Vladimir Gjorgievski, Snezana Cundeva

10:00-10:15 OPTIMIZATION OF WIND-DIESEL POWER PLANTS PARAMETERS AND
PLACEMENT FOR POWER SUPPLY OF RUSSIA'S NORTHERN REGIONS
CONSUMERS

Viktor Elistratov, Inna Bogun, Valeriia Kasina

10:15-10:30 OPTIMIZATION OF HYBRID SYSTEMS' OPERATING MODES BASED ON
RENEWABLE ENERGY

Viktor Elistratov, Roman Denisov

10:30-10:45 ANALYSIS OF THE INTERRUPTIONS IN A SECTION OF POWER
DISTRIBUTION NETWORK MEDIUM VOLTAGE 20 KV

Angel Petleshkov, Yavor Lozanov

10:45-11:00 THERMOGRAPHIC STUDY OF THE HEATING OF A PULSE-CONTROLLED
MAGNETIC-TECHNOLOGICAL DEVICE

Angel Petleshkov, Svetlana Tzvetkova, Yavor Lozanov

11:00-11:30 COFFEE BREAK

Friday, 7 June

11:30-11:45 DISTRIBUTED GENERATION CONTROL IN ENERGY MARKET
CONDITIONS USING ADVANCED MODEL PREDICTIVE CONTROL

Valeriya Dubaylova, Nikita Mukhlynin, Olga Polyakova

11:45-12:00 COMPUTATIONAL PERFORMANCE COMPARING OF THE STATE
ESTIMATION PROBLEM STATEMENTES IN POLAR AND RECTANGULAR
COORDINATES

Ilya Polyakov, Andrey Pazderin, Olga Polyakova

12:00-12:15 IMPROVING OF THE COMBINED CYCLE POWER PLANT OPERATION UNDER ISLANDING CONDITIONS THROUGH VOLTAGE CONTROL

Olga Polyakova, Ildar Gabdulin, Pavel Chusovitin, Andrey Pazderin

12:15-12:30 A STRONG ACTION POWER SYSTEM STABILIZER APPLICATION IN A MULTI-MACHINE POWER SYSTEM CONTAINING A NUCLEAR POWER PLANT

Aya Abou-El-Soud, Sayed H. A. Elbanna, Waheed Sabry

12:30-12:45 VIRTUAL POWER PLANTS MODELING AND SIMULATION USING INNOVATIVE ELECTRO-ECONOMICAL CONCEPT

Fatma El Zahraa Magdy, Doaa Khalil Ibrahim, Waheed Sabry

12:45-13:00 INNOVATIVE WIND-CUBE TRACKING SYSTEM USING VANE CONTROL: DESIGN AND IMPLEMENTATION

Reda Y. Abdellateef, Amal Farouk Abdelgawad, Waheed Sabry, Usama Abouzayed

ORAL SESSION 3

Friday, 7 June

Hall 3

09:30

“Aqua Azur” Hotel

Chairman: Violeta Bozhikova

9:30-9:45 AN APPROACH FOR MODELING THE ELECTRONIC CONVERTER-MOTOR SYSTEM FOR ELECTRIC VEHICLES

Zahari Zarkov, Vladimir Lazarov, Plamen Rizov, Ludmil Stoyanov, Encho Popov

9:45-10:00 IMPEDANCE MATCHING FOR AN INDUCTIVE HARVESTING TRANSDUCER

Juan A. Garriga, Hugo Valderrama-Blavi, David García-Elvira, J.A. Barrado, Àngel Cid-Pastor

10:00-10:15 INVESTIGATION OF TRACTION MOTOR DYNAMIC USING COMPUTER SIMULATION AND METHOD OF MUTUAL LOADING OF TWO PAIR MOTORS

Ilya Dvornikov, Marks Marinbahs, Jaroslavs Zarembo, Edgars Groza, Karlis Ketners

10:15-10:30 INVESTIGATION OF ELECTRICAL BUS TRACTION MOTOR DYNAMIC USING METHODS OF PHYSICAL AND COMPUTER SIMULATION

Olegs Sliskis, Ilya Dvornikovs, Marks Marinbahs, Janis Marks, Edgars Groza

10:30-10:45 SIMO SYSTEM IDENTIFICATION OF TRANSFER FUNCTION MODEL FOR ELECTROHYDRAULIC POWER STEERING

Alexander Mitov, Jordan Kraley, Tsonyo Slavov, Ilcho Angelov

10:45-11:00 IMPLEMENTATION OF EMBEDDED THREE-LOOP CONTROL ALGORITHM FOR ELECTROHYDRAULIC POWER STEERING SYSTEM

Alexander Mitov

11:00-11:30 COFFEE BREAK

11:30-11:45 SIMULATION OF THE LOW-FREQUENCY ELECTROMAGNETIC
TRANSDUCER OF THE COMPENSATING SOURCE OF THE ACTIVE
VIBRATION DAMPING SYSTEM

*Vitaly Ryzhov, Oleg Molokanov, Pavel Dergachev, Sergey Osipkin, Ekaterina Kurbatova,
Pavel Kurbatov*

11:45-12:00 OPTIMIZED POWER FLOW CONTROL OF SMART GRIDS WITH ELECTRIC
VEHICLES AND DER

Metody Georgiev, Rad Stanev, Anastassia Krusteva

12:00-12:15 A SURVEY OF PERIODIC BINARY NEARLY PERFECT SIGNALS WITH
LENGTHS $N=1 \bmod 4$

Mihail Iliev, Borislav Bedzhev, Monika Bedzheva, Kaloyan Kanchev

12:15-12:30 AN ALGORITHM FOR SYNTHESIS OF MISMATCHED FILTERS FOR
PROCESSING OF APERIODIC PHASE MANIPULATED SIGNALS

Mihail Iliev, Borislav Bedzhev, Monika Bedzheva, Kaloyan Kanchev

POSTER SESSION 1

Friday, 7 June
Conference block of the hotel
11:00-13:00

Chairman: George Todorov

- 1) IMPACT OF CAPACITOR ON OPERATING CHARACTERISTICS OF SINGLE PHASE MOTOR
Vasilija Sarac, Neven Trajchevski
- 2) REVISITING THE PLOTTING OF MECHANICAL CHARACTERISTIC OF INDUCTION MOTOR WITH A WOUND ROTOR
Vasiliy Frizen, Sergey Nazarov, Viktor Denisenko
- 3) RESEARCH OF THE PROCESS HEATING OF DISPERSED STEEL LOAD
Aleksandr Antipin, Vasiliy Frizen
- 4) DETERMINATION OF PARAMETERS OF HIGH-FREQUENCY MATCHING TRANSFORMER OF INSTALLATION OF INDUCTION HEATING
Aleksandr Antipin, Vasiliy Frizen, Sergey Bychkov
- 5) STUDY OF CHARACTERISTICS OF VIBRATION SPARKING IN HV ROTATING MACHINE INSULATION
Victor Belko, Andrey Plotnikov, Yury Petrenya, Tatiana Shikova
- 6) ASPECTS REGARDING TESTS OF THREE-PHASE ASYNCHRONOUS MOTORS WITH SINGLE - PHASE SUPPLY
Sorin Enache, Aurel Campeanu, Ion Vlad, Monica-Adela Enache
- 7) PARTICULARITIES REGARDING DESIGN OF ASYNCHRONOUS MOTORS USED FOR DRIVING COAL MILLS
Sorin Enache, Aurel Campeanu, Ion Vlad, Monica Adela Enache
- 8) INFLUENCE OF SKIN EFFECT ON STATOR WINDINGS RESISTANCE OF AC MACHINES FOR ELECTRIC DRIVES
Ludmil Stoyanov, Vladimir Lazarov, Zahari Zarkov, Encho Popov
- 9) MODELING OF ELECTRICAL CHARACTERISTICS OF VARIOUS PV PANELS
Valentin Milenov, Zahari Zarkov, Boris Demirkov, Ivan Bachev
- 10)STUDY OF PHYSICAL MODEL OF WECS WITH SYNCHRONOUS GENERATOR AND BACK-TO-BACK CONVERTER
Boris Demirkov, Zahari Zarkov
- 11)PARAMETER ESTIMATION OF AN INTERIOR PERMANENT MAGNET SYNCHROUNOUS MOTOR
Emil Sokolov, Miho Mihov
- 12)ANALYSIS OF NON-UNIFORM MAGNETIC FLUX DISTRIBUTION IN CONICAL ROTOR DOUBLE-SPEED INDUCTION MOTORS
George Todorov, Dimitar Jetchev
- 13)USING OF THE DIAMAGNETIC PROPERTIES OF HTS FOR MAGNETIC SYSTEMS OF LINEAR ELECTRIC MACHINES
Ekaterina Kurbatova, Egor Kuschenko, Mikhail Sysoev, Andrey Drozdov, Pavel Dergachev and Pavel Kurbatov

- 14) NEURAL CONTROL OF TWO-LINK PLANAR ROBOT
Zhivko Zhekov, Emil Marinov
- 15) EXPLOITATION OF ADDITIONAL DEGREES OF FREEDOM OF MULTIPHASE DRIVES IN LOW FREQUENCY OPERATION OF MODULAR MULTILEVEL CONVERTERS
M. Daoud, A. Elserougi, A. Abdel-Khalik, A. Massoud, R. Bojoi, S. Ahmed
- 16) AN APPROACH TO SOLVING RAMP START ISSUES IN SENSORLESS FIELD ORIENTED CONTROL WITH SLIDING MODE OBSERVER FOR PERMANENT MAGNET SYNCHRONOUS MOTORS
Emil Rachev, Vladislav Petrov
- 17) STUDYING THE PERFORMANCE CHARACTERISTICS OF THE ELECTRIC VEHICLE
Marin Marinov, Javor Petrov, Orlin Stanchev, Pavel Andreev
- 18) ANALYSIS OF FRACTIONAL-SLOT PERMANENT MAGNET SYNCHRONOUS MACHINES USED FOR HYBRID VEHICLES
Tsvetomir Stoyanov, Radoslav Spasov, Plamen Rizov
- 19) EXPERIMENTAL SURVEY AND ANALYSIS ON THE IMPACT OF THE COMMUTATION PROCESS ON A POSITIVE DISPLACEMENT PUMP DRIVEN BY AN ASYNCHRONOUS ELECTRIC MOTOR
Peicho Tomov, Bohos Aprahamian, Krasimir Petrov, Pavel Andreev, Petko Petkov
- 20) EXPERIMENTAL STUDY AND FUNCTIONAL REGIME ANALYSIS OF AN ELECTRIC PUMP UNIT WITH A THREE-PHASE ASYNCHRONOUS MOTOR
Peicho Tomov, Bohos Aprahamian, Georgi Petkov, Pavel Andreev, Petko Petkov
- 21) MODELLING THE PROCESSES OF HYDRAULIC COMMUTATION IN A ELECTRO-HYDRAULIC PUMPING UNIT DRIVEN BY AN ASYNCHRONOUS MOTOR
Peicho Tomov, Dragiya Yanulov
- 22) METHOD FOR INVESTIGATION OF THE PRESSURE VARIATION IN THE CHAMBERS OF GEAR PUMPS WITH SYMMETRIC AND ASYMMETRIC TOOTH PROFILES USED IN ELECTROHYDRAULIC DRIVE SYSTEMS
Wesam Mhana, Gencho Popov
- 23) INVESTIGATION OF THE PRESSURE VARIATION IN THE CHAMBERS OF EXTERNAL GEAR PUMPS WITH SYMMETRIC AND ASYMMETRIC TOOTH PROFILES USED IN ELECTROHYDRAULIC DRIVE SYSTEMS
Wesam Mhana, Gencho Popov
- 24) NEURO-FUZZY CONTROL SYNTHESIS FOR ELECTRO-HYDRAULIC FOLLOW-UP SYSTEM
Krasimir Ormandzhiev, Stanimir Yordanov
- 25) STUDY OF PIEZOELECTRIC SPRING HARVESTERS
Nikola GEORGIEV, Raicho RAICHEV

13:00 LUNCH

Friday, 7 June
Restaurant of the hotel

POSTER SESSION 2

Friday, 6 June
Conference block of the hotel
14:00-15:45

Chairman: Valentin Mateev

- 1) CRANKSHAFT POSITION MAGNETOELECTRIC SENSOR FOR CONTROLLER AREA NETWORK BUS
Roman Petrov, Ivan Belov, Mirza Bichurin, Slavcho Bozhkov, Ivan Milenov, Penko Bozhkov
- 2) BAND-PASS ARC-FILTER WITH POLE FREQUENCY, POLE DECAY AND TRANSFER RATIO INDEPENDENT ADJUSTMENT
Darya Yu. Denisenko, Evgeny A. Zhebrun, Nikolay N. Prokopenko, Yuriy Iv. Ivanov
- 3) INFORMATION SYSTEM FOR COLLECTION, PROCESSING AND PRESENTATION OF DATA FROM SENSOR NODES
Yordan Sivkov
- 4) ANALYSIS OF FLUX DENSITY HARMONIC SPECTRUM OF THE COAXIAL MAGNETIC GEAR
Valentin Mateev, Miglenna Todorova, Iliana Marinova
- 5) HARMONIC SPECTRUM FILTRATION FOR CURRENT SENSOR MEASUREMENTS
Dimitar Bogdanov, Martin Ralchev, Valentin Mateev, Iliana Marinova
- 6) 3D COUPLED ELECTRIC-THERMAL-FLUID ANALYSIS OF BOLTED BUSBAR CONNECTION
Yanko Slavtchev, Valentin Mateev, Raina Tzeneva,
- 7) MODELING OF FLUID FLOW COOLING OF HIGH-SPEED ROTATIONAL ELECTRICAL DEVICES
Valentin Mateev, Georgi Ivanov, Iliana Marinova
- 8) BIORTHOGONAL WAVELET FILTRATION OF SIGNALS USED IN THE INDUSTRIAL AUTOMATION SYSTEMS
Mariyana Todorova, Reneta Parvanova
- 9) SERVO SYSTEM PARAMETER ESTIMATION BY WAVELET METHOD
Mariyana Todorova, Reneta Parvanova
- 10) GPU-IN-THE-LOOP SIMULATION OF LINEAR CONTROLLERS
Jordan Kralev
- 11) STUDY OF THE ELECTRICAL CHARACTERISTICS OF AUTOTRANSFORMER DISCRETE ALTERNATING VOLTAGE REGULATORS WITH R-L LOADS
Emil Panov, Milena Ivanova, Emil Barudov
- 12) MULTIFUNCTIONAL ELECTRONIC TRANSFORMER
Aleksandr Antipin, Vladimir Udintsev, Sergey Sarapulov

- 13)METHOD OF SOLVING THE PROBLEM OF THE REACTIVE POWER OF THE LOAD IN MULTILEVEL INVERTERS
Ekaterina Mirgorodskaya, Nikita Mityashin, Vadim Kolchev, Ivan Artyukhov, Sergei Stepanov
- 14)UNIVERSAL POWER SOURCE OF SINGLE-PHASE MULTILEVEL INVERTERS
Ekaterina Mirgorodskaya, Nikita Mityashin, Vadim Kolchev, Yuri Tomashevsky, Sergei Stepanov, Denis Artyukhov
- 15)NUMERICAL DESIGN OF COMPLEX SHAPE COILS
Dragomir Grozdanov, Nikolay Hinov
- 16)COMPARISON BETWEEN CLASICAL AND MODERN METHODS FOR OPTIMAL CONTROL OF BUCK DC/DC CONVERTER
Nikolay Hinov, Gergana Vacheva, and Bogdan Gilev
- 17)MODELLING AND CONTROL OF BIDIRECTIONAL BUCK-BOOST CONVERTER FOR ELECTRIC VEHICLES APPLICATIONS
Gergana VACHEVA, Vladimir DIMITROV and Nikolay HINOV
- 18)MODELLING AND RESEARCH OF SYNCHRONOUS CONVERTER FOR ACTIVE BALANSING SYSTEM
Dimitar Arnaudov, Krasimir Kishkin
- 19)FUELCELL POWER SUPPLY SYSTEM – MODELLING AND OPTIMIZATION
Vladimir Dimitrov, Plamen Punov, Dimitar Arnaudov
- 20)ASPECTS OF MODERN COMPUTING OF MEDIUM VOLTAGE ELECTRICAL NETWORKS WITH NEUTRAL TREATED BY COMPENSATION COILS
Silvia-Maria Diga, Nicolae Diga, Adelaida-Mihaela Duinea, Cristian Bratu
- 21)ANALYSIS OF THE OPERATIONAL PARAMETERS OF A MEDIUM VOLTAGE CABLE LINE
Dian Malamov, Ivan Hadzhiev, Vasilina Zlatanova, Albena Pavlova, Aleksandar Georgiev, Snejana Terzieva
- 22)FORECASTING THE ENERGY CONSUMPTION IN AFGHANISTAN WITH THE ARIMA MODEL
Atanas Mitkov, Najmuddin Noorzad, Katerina Gabrovska-Evstatieva, Nicolay Mihailov
- 23)METHOD OF STUDY OF THERMOELECTRIC GENERATORS
Kaloyan Ivanov, Anatoliy Aleksandrov
- 24)MULTI-MODULAR WIND GENERATOR FOR URBAN WIND POWER
Ivan Artyukhov, Sergei Stepanov, Ekaterina Mirgorodskaya, Vasilina Kovalenko, Nikita Mityashin
- 25)ELECTRIC POWER SUPPLY OF WIRELESS SENSORS BY THERMO-ELECTROCHEMICAL CELLS
Denis Artyukhov, Igor Burmistrov, Ivan Artyukhov
- 26)ULTRACAPACITOR CHARGING FROM A SOURCE WITH VARYING AND LIMITED POWER
Hristo Antchev, Anton Andonov, Kostadin Milanov

ORAL SESSION 4

Friday, 7 June

Hall 1

14:30

“Aqua Azur” Hotel

Chairman: George Todorov

14:30-14:45 WEB-BASED ENVIRONMENT FOR VIRTUAL LABORATORIES IN THE
FIELD OF ELECTRICAL ENGINEERING

Boris Evstatiev, Katerina Gabrovska-Evstatieva, Valentina Voynohovska, Ivan Beloev

14:45-15:00 UNCERTAINTY CONSIDERATIONS OF MEASURING EQUIPMENT DURING
EXPERIMENTAL RESEARCH IN MACHINING

Neven Trajchevski, Vasilija Sarac, Rose Smileski

15:00-15:15 COMPARATIVE EVALUATION OF MECHANISMS FOR TRAFFIC
PRIORITIZATION IN LTE NETWORKS

Aydan Haka, Veneta Aleksieva, Hristo Valchanov

15:15-15:30 EXPLAINING THE DLT APPLICATIONS IN THE CONTEXT OF A
CUSTOMERS, FACILITY MANagements AND UTILITY COMPANIES
RELATIONSHIP

Peyo Hristov, Teodora Hristova

15:30-15:45 NEAR REGION ACOUSTIC DRIVER CIRCULAR CONE

Georgi Markov, Ekaterinoslav Sirakov

15:45-16:00 COMPARATIVE ANALYSIS OF CONTENT-BASED IMAGE RETRIEVAL
SYSTEMS

Miroslav Marinov, Irena Valova, Yordan Kalmukov

ORAL SESSION 5

Friday, 7 June

Hall 2

14:30

“Aqua Azur” Hotel

Chairman: Zahari Zarkov

14:30-14:45 INVESTIGATION OF ONLINE CORONA LOSSES AS A FUNCTION OF
OPERATING VOLTAGE BASED ON PMU DATA

Anna Diachenko, Kirill Sidorov, Ammar Hussein, Yuri Kononov

14:45-15:00 COMPARATIVE ANALYSIS OF HV CABLES ELECTRICAL
CHARACTERISTICS

Dimitar Georgiev

15:00-15:15 TRANSIENT STABILITY ANALYSIS IN ROTOR WINDING OF
HYDROGENERATOR AT VARIOUS SHORT CIRCUIT VALUES IN POWER
GRID IN CONSIDERATION WITH AEC

S.E. Kokin, M.KH Safaraliev, Kh.N. Rasulzoda, R.A. Otashbekov, J.B. Rahimov, Sh.M. Sultonov

15:15-15:30 ELECTRICAL EQUIPMENT TECHNICAL STATE INTEGRAL ESTIMATE
BASED ON ADDITIONAL NON-DESTRUCTIVE METHODS

Alexandra Khalyasmaa, Iana Nikitina, Lina Wang

15:30-15:45 POWER SYSTEM SECTIONALIZING OPTIMIZATION USING GENETIC
ALGORITHM

Albina Gavrilova, Alexandra Khalyasmaa

15:45-16:00 THE DEVELOPMENT OF A JOINT MODELLING FRAMEWORK FOR
OPERATIONAL FLEXIBILITY IN POWER SYSTEMS

Nikolai Voropai, Christian Rehtanz, Stefan Kippelt, Nikita Tomin, Ulf Haeger, Dmitry Efimov, Victor Kurbatsky, Irina Kolosok

16:00-16:30 COFFEE BREAK

POSTER SESSION 3

Friday, 7 June
Conference block of the hotel
16:00-18:00

Chairman: Hristo Valchanov

- 1) STATE OF HUMAN CAPITAL DEVELOPMENT AND WORKING CONDITIONS IN
ELECTRICAL DISTRIBUTION COMPANIES IN BULGARIA
Kiril Anguelov
- 2) OPPORTUNITIES FOR PREVENTION OF CORRUPTION IN PUBLIC
PROCUREMENT IN ELECTRICITY DISTRIBUTION COMPANIES IN BULGARIA
Kiril Anguelov
- 3) RESEARCH STUDIES FOR THE EFFICIENCY OF MANAGEMENT IN BULGARIAN
ELECTRICITY DISTRIBUTION COMPANIES
Kiril Anguelov
- 4) A MODEL FOR DEVELOPMENT OF PROFESSIONAL COMPETENCE IN STUDENTS
OF TECHNICAL INSTITUTES OF HIGHER LEARNING
Diana Izvorska
- 5) SOME PROBLEMS IN DISTANCE LEARNING ON THEORETICAL ELECTRICAL
ENGINEERING IN TECHNICAL UNIVERSITY OF SOFIA
Simona Kirilova Filipova-Petrakieva
- 6) A NOVEL METHOD FOR DETERMINING THE MAXIMUM ENERGY FLOWS,
PASSED THROUGH THE ELECTRICAL POWER SYSTEMS UNDER INTERVAL
UNCERTAINTY
Simona Kirilova Filipova-Petrakieva
- 7) INNOVATION IN THE TEACHING METODOLOGY OF ELECTRONICS
Ilonka Lilyanova
- 8) APPLICATION OF VARIABLE FREQUENCY DRIVES (VFD) WITH LARGE 6 KV
ASYNCHRONOUS MOTORS
Valentin Kolev, Iva Draganova-Zlateva

- 9) DETERMINATION OF THE THERMAL RESISTANCE OF ALUMINUM AND COPPER HEAT SINK IN A THERMOELECTRIC PUMP
Ivaylo Belovski, Anatoliy Aleksandrov
- 10) IMPLEMENTATION OF COLLISION SENSE AND ORIENTATION SYSTEM
Stanislav Simeonov, Todor Kostadinov, Ivaylo Belovski
- 11) BIOELECTRICITY PRODUCTION AND WASTE WATER TREATMENT BY AIR CATHODE MICROBIAL FUEL CELL
Blagovesta Midyurova
- 12) PERFORMANCE ANALYSIS AND MODELLING OF GRID-CONNECTED SMALL PHOTOVOLTAIC SYSTEM
Atanas Chervenkov, Atanas Yanev, Todorka Chervenkova
- 13) EXPERIMENTAL AND NUMERICAL ANALYSIS OF THE THERMAL FIELD IN A HIGH POWER LOW VOLTAGE FUSE
Ivan Hadzhiev, Dian Malamov, Iosko Balabozov and Ivan Yatchev
- 14) COMPUTER MODELING AND EXPERIMENTAL VERIFICATION OF A HYBRID ELECTROMAGNETIC SYSTEM WITH MAGNETIC FLUX MODULATION
Ivan Yatchev, Iosko Balabozov, Hartmut Brauer, Vultchan Gueorgiev
- 15) PARAMETRIZED MODELLING OF A HYBRID ELECTROMAGNETIC SYSTEM WITH MAGNETIC MODULATION
Ilona Iatcheva, Iosko Balabozov, Elena Yankulova, Ludmil Kirilov
- 16) OPTIMAL ALGORITHMS FOR MINIMIZING OF ACTIVE AND REACTIVE POWER OF INDUCTION MOTORS TAKING INTO ACCOUNT OF IRON LOSSES
Dimitar Spirov
- 17) SIMULATION FRAMEWORK FOR BUILDING OF 6LOWPAN NETWORK
Aydan Haka, Rusen Vasilev, Veneta Aleksieva, Hristo Valchanov
- 18) AN APPROACH FOR HOST BASED BOTNET DETECTION SYSTEM
Yulia Aleksieva, Hristo Valchanov, Veneta Aleksieva
- 19) COMPARATIVE ANALYSIS OF PROTOTYPES BASED ON LI-FI TECHNOLOGY
Diyan Dinev, Veneta Aleksieva and Hristo Valchanov

20:00 DINNER

Friday, 7 June
Restaurant of the hotel

ORAL SESSION 6

Saturday, 8 June

Hall 1

09:30

“Aqua Azur” Hotel

Chairman: Valentin Mateev

9:30-9:45 DETERMINATION OF THE SYNCHRONOUS INDUCTANCES OF A CLAW POLE ALTERNATOR

Vladimir Lazarov, Zahari Zarkov, Ivan Bachev

9:45-10:00 EXPERIMENTAL STUDY OF ELECTRONICALLY CONTROLLED CLOSED-LOOP ELECTROHYDRAULIC SYSTEM WITH VARIABLE DISPLACEMENT PUMP

Ilcho Angelov, Nikola Stanchev, Alexander Mitov

10:00-10:15 FACTOR ANALYSIS OF THE QUALITY OF ELECTRICITY

Vania Rangelova, Vasil Drambalov

10:15-10:30 ASSESSMENT OF CONDITIONS FOR THE APPLICATIONS OF DLT FOR SMART METERING IN BULGARIA ACCORDING TO THE EUROPEAN REQUIREMENTS

Teodora Hristova, Peyo Hristov

10:30-10:45 MODULE FOR TAXIMETER USE OF CAN INTERFACE IN CAR

Nikolay Valov, Irena Valova, Donka Ivanova, Daniel Chervenski

10:45-11:00 ROBUST CONTROL APPLICATION POSSIBILITIES FOR MACHINING ROBOTS

Sasho Guergov, Nina Nikolova, Grigor Stambolov

11:00-11:15 PID CONTROL OF ANALOG THREE-DIMENSIONAL PLANT

Bozhidar Rakov, Georgi Ruzhekov

11:15-11:30 REAL TIME MONITORING OF HV ELECTRICAL MACHINES DRIVING POWERFUL PUMP AGGREGATES

Vultchan Gueorgiev, Plamen Rizov,

11:30-11:45 WEARABLE DEVICE INTERFACE COMPARISON

Yuri Dimitrov, Veneta Aleksieva, Hristo Valchanov

POSTER SESSION 4

Saturday, 8 June

Conference block of the hotel

9:30-11:30

Chairman: Maik Streblau

- 1) SIZING OF PV BASED POWER SUPPLY FOR IRRIGATION SYSTEM – APPLICATION IN SANDANSKI, BULGARIA

Ludmil Stoyanov, Ivan Govedarski, Vladimir Lazarov

- 2) FORECASTING THE PRODUCTION OF ELECTRICAL ENERGY FROM PHOTOVOLTAICS
Marya Marinova, Bohos Aprahamian, Tatyana Dimova, Pavel Andreev
- 3) COMPARISON OF WIND DATA MEASUREMENT RESULTS OF 3D ULTRASONIC ANEMOMETERS AND CALIBRATED CUP ANEMOMETERS MOUNTED ON A MET MAST
Dmitriy Dubov, Bohos Aprahamian, Meline Aprahamian
- 4) REGRESSION ANALYSIS OF EXPERIMENTAL DATA FOR ELECTRICAL PARAMETERS OF WATER AT A HIGH VOLTAGE PULSE DISCHARGE
Milena Ivanova
- 5) A STUDY OF ANODIZING OF TI-6AL-7NB ALLOY
Ivaylo Nedelchev, Deyan Veselinov, Hristo Skulev
- 6) SIGNAL PROCESSING AT ANODIZING OF TI-6AL-7NB ALLOY
Ivaylo Nedelchev
- 7) SOME ASPECTS OF LASER CUTTING OF THICK-WALLED WORKPIECES FROM PHASE-SHIFTING STEELS
Vladimir Shtarbakov, Maik Streblau
- 8) ON DETERMINING THE ENERGY EFFICIENCY OF THE ELECTRIC OVEN
Yanita Slavova, Mariya Marinova
- 9) RESEARCH OF THE MAGNETIC FIELD INSIDE A DRUM SEPARATOR WITH PERMANENT MAGNETS
Tatyana Dimova, Bohos Aprahamian and Mariya Marinova
- 10) ELECTROMAGNETIC PROCESSES IN A THREE-PHASE INDUCTION DEVICE UNDER LOAD
Georgi Zhelev, Marin Marinov, Maik Streblau
- 11) A MODEL FOR SIMULATION OF NONLINEAR INDUCTORS IN VIRTUAL ENVIRONMENTS
Boris Evstatiev, Dimcho Kiriakov, Dimitar Trifonov
- 12) DEVELOPMENT OF A VIRTUAL LABORATORY IN LOGIC DESIGN
Boris Evstatiev, Nadezhda Evstatieva and Dimitar Trifonov
- 13) DENOISING OF PULSAR SIGNAL USING WAVELET TRANSFORM
Ivan Garvanov, Ruska Iyibor, Magdalena Garvanova, Nikolay Geshev
- 14) ONE APPROACH TO IMPROVE THE SOFTWARE QUALITY BY APPLYING SOFTWARE DESIGN PATTERNS
Dimitrichka Nikolaeva, Violeta Bozhikova
- 15) A METHOD OF BINARY COMPRESSION
Gergana Spasova
- 16) REDUCED DATABASE FOR VOICE COMMANDS RECOGNITION USING CLOUD TECHNOLOGIES, ARTIFICIAL INTELLIGENCE AND DEEP LEARNING
Snezhana Pleshkova, Aleksander Bekyarski, Zahari Zahariev
- 17) QR CODE'S MAXIMUM SCANNING DISTANCE INVESTIGATION
Pavel Andreev, Bohos Aprahamian, Marin Marinov

- 18)AN APPROACH FOR ANALYSIS OF THE MAGNETIC FIELD OF INDUCTION MOTOR WITH A SQUIRREL-CAGE ROTOR
Marin Todorov, Marin Marinov, Maik Streblau
- 19)SENTINEL-1 SAR SLC IMAGE SHIP DETECTION AND MOTION ESTIMATION
Nikolai Kolev, Miroslav Tsvetkov, Chavdar Alexandrov
- 20)SENTINEL - 1 SAR IMAGE PROCESSING FOR TARGET DETECTION AND EVALUATION BY USING BULGARIAN VTMIS
Chavdar Alexandrov, Miroslav Tsvetkov, Nikolay Kolev, Yordan Sivkov, Avgustin Hristov
- 21)COMPARISON BETWEEN INFORMATION PROVIDED BY RADAR AND AIS IN THE INTEGRATED VESSEL TRAFFIC SYSTEMS
Aleksandrina Angelova, Chavdar Alexandrov
- 22)LIFE DATA ANALYSIS AND OPERATIONAL RELIABILITY POINT ESTIMATION RELATED TO MEDICAL ELECTRONIC DEVICES
Julia Garipova, Anton Georgiev, Toncho Papanchev, Dimitar Zlatev
- 23)AN APPROACH TO STORING REAL-TIME SENSOR READINGS BASED ON NOSQL DATABASE SYSTEMS
Georgi Georgiev, Milko Marinov
- 24)MICROPROCESSOR BASED ELECTRONIC SYSTEM FOR CONTROL OF INDUCTION HEATING IN MACHINE INDUSTRY
Seher Kadirova, Ivan Evstatiev, Daniel Kajtsanov, Teodor Nenov

EXCURSION

Saturday, 8 June
9:30
(departure from the hotel)

CLOSING CEREMONY

Saturday, 8 June
Hall 1
14:00

