

**XVIII-th International Symposium on
Electrical Apparatus and Technologies**

SIELA 2014



P R O G R A M M E

29-31 May 2014

Hotel Bulgaria

Bourgas, Bulgaria

Notes

- Oral presentations – up to 15 min including discussions (laptop and multimedia projector available)
- Invited paper presentations – up to 30 min including discussions
- Poster size: 0.8x1.2 m

Information and registration desk

The Information and Registration desk will be open at Hotel Bulgaria as follows:

- Thursday, 29 May - from 17:00 to 19:00
- Friday, 30 May - from 8:30 to 16:00
- Saturday, 31 May - from 8:30 to 13:00

Phones: (+359) 896 803 915; (+359) 895 588668

Symposium dinner

The Symposium Dinner will be in restaurant “Bulgaria” on Thursday, 30 May 2014.

Cultural programme

Visiting the ancient town of Nessebar – Sunday, 01 June

Enrolment – at the registration desk.

Day	Hour	Event
Thursday 29 May	17:00 - 19:00	Registration
Friday 30 May	9:30 - 11:00	Opening Session, Compass Hall
	11:00 - 11:30	Coffee Break
	11:30 - 12:30	Invited Papers 1, Compass Hall
	13:45 - 15:30	Oral Session O1 , Compass Hall
	15:30 - 16:00	Coffee Break
	16:00 - 17:30	Poster Session P1 , Captain's Hall
	17:30 - 18:30	Oral Session O2 , Compass Hall
	19:30	Symposium Dinner
Saturday 31 May	9:00 - 9:30	Invited Papers 2, Compass Hall
	9:30 - 11:00	Oral Session O3 , Compass Hall
	11:00 - 11:30	Coffee Break
	11:30 - 13:00	Poster Session P2 , Captain's Hall
	14:00 - 16:30	Oral Session O4 , Compass Hall
	16:30 - 17:00	Closing Session, Compass Hall
Sunday 1 June	9:00 - 14:30	Excursion to Nessebar

INVITED PAPERS 1

Friday, 30 May, 11:30 - 12:30, COMPASS Hall

David LOWTHER Canada
Knowledge based techniques for electromagnetic device design and analysis

Jan SYKULSKI United Kingdom
New challenges in design optimisation of electromagnetic devices

ORAL SESSION O1

Friday, 30 May, 13:45 - 15:30, COMPASS Hall

Shunichi HAMANAKA, Iliana MARINOVA, Yoshifuru SAITO,
Manabu OHUCHI, Hideo MOGI and Yoshiro OIKAWA Japan, Bulgaria
Backside defect searching by means of the low frequency coil excitation

Roman PETROV, Nikita YEGEREV, Gennady SEMENOV,
Mirza BICHURIN and Slavoljub ALEKSIC Russia, Serbia
Current sensor based on magnetoelectric effect

Bojana NIKOLIC, Bojan DIMITRIJEVIC, Slavoljub ALEKSIC,
Mico GACANOVIC Serbia, Bosnia and Herzegovina
Implementation and accuracy analysis of ETD method in FDTD simulation environment

M. STRUPINSKIY, N. KHRENKOV, A. KUVALDIN, M. FEDIN Russia
Development and application of induction-resistive heating systems for pipelines

Nikolay KHRENKOV Russia
Simulation and calculation of temperature conditions of electrical heating of steel and plastic pipelines

Hideaki NEMORI, Iliana MARINOVA, Yoshifuru SAITO Japan, Bulgaria
Efficiency evaluation of an air solenoid in a capacitor discharge magnetizer

Miodrag MILUTINOV, Anamarija JUHAS, Neda PEKARIC-NAD Serbia
Magnetic field in vicinity of buss-bars with unbalanced currents

POSTER SESSION P1

Friday, 30 May, 16:00 - 17:30, Captain's Hall

Mirjana PERIC, Sasa ILIC, Slavoljub ALEKSIC, Nebojsa RAICEVIC,
Farid MONSEFI, Milica RANCIC, Sergei SILVESTROV Serbia, Sweden
Analysis of shielded coupled microstrip line with partial dielectric support

Roman PETROV, Vladimir PETROV, Mirza BICHURIN,
Denis Kovalenko, Yuan ZHOU and Shashank PRIYA Russia, USA
Bending modes of two-phase magnetoelectric structure

Pavel KURBATOV, Ekaterina KURBATOVA Russia
Calculation of the magnetic bearing with HTS elements for flywheel energy storage system

Juliano R. da SILVA, Joao P. A. BASTOS, Nelson SADOWSKI, Jean V. LEITE Brazil
Electromagnetic and thermal simulation of an oil insulated power transformer

Alexander KUVALDIN, Alexander LEPESHKIN, Stepan LEPESHKIN Russia
Modelling of heating of rotating disks in electromagnetic field using special inductors

Valentin MATEEV, Rosen TANEV, Iliana MARINOVA Bulgaria
3D simulation of electric and thermal fields of high voltage vacuum interrupter chamber

Valentin MATEEV, Aneliya TERZOVA and Iliana MARINOVA Bulgaria
Design analysis of electromagnetic actuator with ferrofluid

Dragana ZIVALJEVIC, Negovan STAMENKOVIC, Jeroslav ZIVANIC Serbia
Sharp cutoff filters with monotonic pass-band response

Oleg MOLOKANOV, Pavel DERGACHEV, Vladimir KIRUHIN, Pavel KURBATOV Russia
Analyses and prototyping of magnetic harmonic gear

Maxim RUMYANTSEV, Vladimir GLUSHENKOV Russia
General design principles for electric equipment of vehicles with hybrid power units

Tatyana DIMOVA, Bohos APRAHAMIAN, Maria MARINOVA, Maik STREBLAU Bulgaria
Raising the efficiency of permanent magnet separators by maintenance of certain functional state of the object of separation

Maik STREBLAU, Bohos APRAHAMIAN, Mihail SIMOV, Tatyana DIMOVA Bulgaria
The influence of the electrolyte parameters on the efficiency of the oxyhydrogen (HHO) generator

Emil PANOVA, Marinela YORDANOVA Bulgaria
Investigation of the possibilities of using abbreviated methodology for determining separation distances for external lightning protection system

Julian RANGELOV, Marinela YORDANOVA Bulgaria
Risk assessment of operational switches in medium voltage indoor switchgear

Stoil STANNEV, Rad STANNEV Bulgaria
Some shortcomings of the IEC 60214-1:2003 standard, regarding type tests of tap-changers and drive units

Rositsa DIMITROVA, Margreta VASILEVA and Krassimira KARDJILOVA Bulgaria
Influence of frequency on resistivity and dielectric permittivity of multilayer soil

Andrey ANDREEV Bulgaria
Analysis of a contact flow meter with exciting electric field

Angel MARINOV Bulgaria
Specialized power electronics convertor for channel-type industrial induction heating furnaces

Negovan STAMENKOVIC, Dragana ZIVALJEVIC, Ivan KRSTIC, Vidosav STOJANOVIC Serbia
The implementation of two channel IIR quadrature mirror filter bank based on residue arithmetic

Ivan HADZHIEV, Dian MALAMOV, Ivan YATCHEV Bulgaria
Influence of overall dimensions and materials of a switchboard on the thermal field distribution

Mediha MEHMED-HAMZA, Nikolay NIKOLAEV Bulgaria
Using Simulink models for education purposes in the subject automation of electric power systems

ORAL SESSION 02

Friday, 30 May, 17:30 - 18:30, COMPASS Hall

Elissaveta GADJEVA, Marin HRISTOV Bulgaria
Development of empirical SPICE models of photovoltaic panels

Hristo ZLATANOV, Dimitar BOGDANOV Bulgaria
Magnetic characteristics of ferromagnetic shielding material

Rad STANEV Bulgaria
A primary power control of small hydro power plants in autonomous, micro and minigrids

Rad STANEV Bulgaria
Estimation of the impact of distributed energy resources on electrical network power losses

INVITED PAPERS 2

Saturday, 31 May, 9:00 - 9:30, COMPASS Hall

Yoshifuru SAITO

Japan

Modelling of ferromagnetic fields

ORAL SESSION O3

Saturday, 31 May, 9:30 - 11:00, COMPASS Hall

Sergey RYVKIN, Miroslav CHOMAT

Russia

Sliding mode as a tool for elimination of the influence of the renewable energy source on the control quality of a synchronous drive

Julian WOSIK, Piotr WOJTAS, Artur KOZLOWSKI and Bogdan MIEDZINSKI

Poland

Comparative study of performance of low-voltage air contactors with silver based and/or Cu-Mo composite contact materials

Ivan GARVANOV, Ivan ZAREV and Bozidar RAKOVIC

Bulgaria, Serbia

The influence of temperature to the regularity of life cycle

Stoil STANNEV

Bulgaria

Simulated circuits for switching tests of on-load tap-changers with a single auxiliary contact

Andon LAZAROV, Dimitar MINCHEV and Todor KOSTADINOV

Bulgaria

SAR triangle CW LFM signal formation and imaging

Chavdar ALEXANDROV

Bulgaria

Radar target signatures evaluation using numerical deconvolution

POSTER SESSION P2

Saturday, 31 May, 11:30 - 13:00, Captain's Hall

- Sergei RYVKIN, Danil DROZHZHIN Russia
Network voltage distortion by arc furnace and its mitigation
- Alin-Iulian DOLAN, Lucian MANDACHE Romania
FEM-based optimization of the airgap of smoothing inductors
- Ioan POPA, Alin Iulian DOLAN, Doina GHINDEANU, Catalin BOLTASU Romania
Thermal modeling and experimental validation of an encapsulated busbars system
- Grigore CIVIDJIAN Romania
Optimal shading coil cross-section for minimal ripple factor of AC electromagnet attracting force
- Nicolae DIGA, Constantin GHITA, Ion VLAD, Silvia-Maria DIGA, Dorinel CONSTANTIN Romania
Considerations on modelling and simulation of stator winding distribution of a permanent magnet synchronous motor for driving a bicycle
- Nikolay KARADZHOV, Georgi GANEV, Krastjo HINOV, Dinjo KOSTOV Bulgaria
Design on nonsuperconducting inductive fault current limiter
- Georgi GANEV, Krastjo HINOV, Nikolaj KARADZHOV, Dinjo KOSTOV Bulgaria
Solid-state switches for fault current limiter control
- Peter DINEFF, Ivaylo IVANOV, Dilyana GOSPODINOVA, Lucien VELEVA Bulgaria, Mexico
Thermal behavior indicators of flame retarded wood obtained by simultaneous thermal analysis: I. New thermal behaviour indicators of wood
- Peter DINEFF, Ivaylo IVANOV, Dilyana GOSPODINOVA, Lucien VELEVA Bulgaria, Mexico
Thermal behavior indicators of flame retarded wood obtained by simultaneous thermal analysis: III. Thermal behavior criteria of plasma-aided flame
- Velislava RAYDOVSKA, Petar NAKOV, Victor RAICHEV Bulgaria
Implementation of a methodology for on-line monitoring of the tangent of the angle of dielectric losses in bushings in laboratory conditions
- Nikolina PETKOVA, Petar NAKOV and Viktor RAYCHEV Bulgaria
Monitoring of incipient faults in power transformer
- Dimitar ARNAUDOVS, Nikolay HINOV, George KRAEV and Ivan NEDYALKOV Bulgaria
Simulation study of serial ZVS DC - DC converter
- Borislav DIMITROV Bulgaria
Methodology for adjustment of thermoregulators of chamber electroresistive furnaces using mathematical modeling and simulation of a complex setting furnace-heated element-regulator

- Milena GORANOVA, Borislav DIMITROV Bulgaria
Experimental study of flexible photovoltaic cells and a comparative analysis of the performance of different technologies
- Milena GORANOVA, Borislav DIMITROV Bulgaria
Applications of super capacitors in standalone photovoltaic systems
- Ludmil STOYANOV Bulgaria
Modeling of proton exchange membrane fuel cell for simulation of hybrid systems with renewable energy sources
- Ludmil STOYANOV Bulgaria
Implementation of Matlab/Simulink model of induction motor in students laboratory works - performance characteristics and transient processes simulation
- Hristo NENOV, Galina HRISTOVA, Borislav DIMITROV, Angel MARINOV Bulgaria
Influence of the content and the structure of the Matlab code on the performance in GPU using
- Daniela OROZOVA and Evdokia SOTIROVA Bulgaria
Modeling of a learning management system
- Vultchan GUEORGIEV, Borislav BOJCHEV Bulgaria
Accuracy in measurement of reactive power and energy

ORAL SESSION 04

Saturday, 31 May, 14:00 - 16:30, COMPASS Hall

- Ivan GARVANOV, Ljubomir DIMITROV, Zoran MILOJEVIC Bulgaria, Serbia
Corona EHV AC transmission lines as noise source in environment
- Dimitar BOGDANOV Bulgaria
Redundant design of relay protection system for power plant unit with synchronous generator
- Lyuben ILIEV, Daniel TODOROV, Petko MASHKOV, Nikola MIHAILOV Bulgaria
Controller for intelligent management of industrial and consumer lighting
- Nikolay MIHAYLOV, Petko MASHKOV, Daniel TODOROV, Lyben ILIEV Bulgaria
Investigation an efficient poultry lighting solution
- Georgi KUNOV Bulgaria
MATLAB-SIMULINK model of solid-state transformer realized with matrix converters
- Ivaylo IVANOV, Peter DINEFF, Dilyana GOSPODINOVA, Lucien VELEVA Bulgaria, Mexico
**Thermal behavior indicators of flame retarded wood obtained by simultaneous thermal analysis:
II. Flame retardancy criteria of wood**
- Ivanka STAMOVA USA
Fractional-order delay neural networks: impulsive effects on the Mittag-Leffler stability and synchronization
- Daniela MAREVA, Dimitar JUDOV, Emil MAREV Bulgaria
Single-ended inverters for induction heating of fluids
- Lenko ERBAKANOV, Sotir SOTIROV Bulgaria
Modeling the eCompass based area scanning
- Iliana MARINOVA, Peter IGNATOV Bulgaria
Measurement system for dynamic testing of BLDC motors



The SIELA 2014 symposium will be held in hotel Bulgaria.