

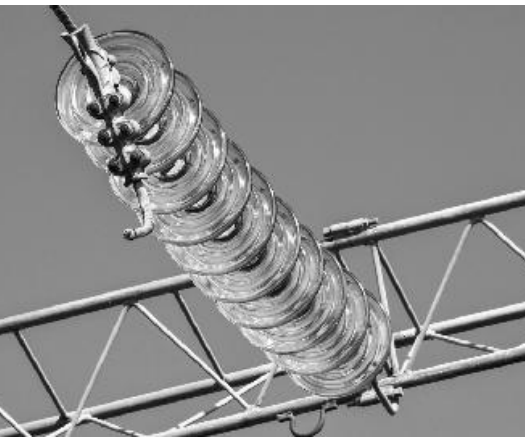


International Scientific Electric Power Conference

ISEPC • 2021

Conference Schedule

17-19th of May, 2021

Schedule of Events

Time (GMT +3) / Topic / Person

10:00-10:03 Opening of the Conference / **Yury V. Murashov**

10:03-10:17 Circular Economy for Sustainable Development / **Vitaly V. Sergeev**, Corresponding Member of the Russian Academy of Sciences, Vice-Rector of SPbPU

10:20-10:50 Energy Transition supported by a framework of the CPSS in Energy / **Xue Yusheng**, Academician of the Chinese Academy of Engineering

10:50-11:00 Discussion, Answers & Questions

11:00-11:20 Renewable energy and energy storage systems / **Nikolay V. Korovkin**, a full member of Academy of Electrotechnical Sciences of the Russian Federation, Professor of SPbPU

11:25-11:45 Dielectric materials properties investigations for condition assessment and lifetime prediction of electrical insulation systems / **Viktor O. Belko**, Director of Higher School of High Voltage Energy

11:50-12:10 Validation and implementation of new controlled equipment in electric power systems within the framework of smart grid concept / **Andrey N. Belyaev**, Professor of SPbPU

12:15-12:35 Development of modern electric power and electrotechnological equipment / **Vladimir Frolov**, a full member of Academy of Electrotechnical Sciences of the Russian Federation, Professor of SPbPU; Dmitriy Ivanov, PhD, Docent of SPbPU

12:35-12:45 Discussion, Answers & Questions

12:45-13:05 The actual situation of the German Power System Transformation / **Harald Schwarz**, Professor of Brandenburgische Technische Universität Cottbus-Senftenberg

13:05-13:10 Closing of the Plenary Session / **Yury V. Murashov**

13:05-13:30 BREAK

Section 2: EE EM ET – Electrical Engineering, Electromechanics and Electrotechnology (in ENGLISH)

13:30-13:40 Synthesis of a tunable band-stop filter / **Elena Solovyeva and Yury Inshakov**

13:43-13:53 Numerical simulation of the arc extinguishing process in a low-voltage AC circuit breaker / **Muhammed Enes Koca, Svetlana Averyanova, Feride Nida Agca, Kazim Yilmaz and Ilshat Asee**

13:56-14:06 Simulation of heat transfer processes in the VR32 breaker contact system with rated current of 100A / **Elif Basak Gunay, Nikita Basov and Victoriya Golovanova**

14:09-14:19 Experimental study of VR32 breaker thermal state with rated current of 100A / **Elif Basak Gunay, Nikita Basov and Muhammed Enes Koca**

14:22-14:32 Calculation Method of the Thermal Field of a Power Toroidal Transformer / **Liudmila Sakhno, Olga Sakhno, Pavel Fedorov, Roman Zaryvaev, Mikhail Krylov and Evgenii Paramonov**

14:35-14:45 Experimental study of impact of magnetostriction on operation of Mn-Zn ferrite core based resonant circuit / **Yuri Adamyan, Sergey Krivosheev and Sergey Magazinov**

14:48-14:58 Arc spot movement and its effect on flow in an AC plasma torch / **Alexander Surov, Nikita Obraztsov, Nikolay Bykov and Ghennady Nakonechny**

May, 18th

Section 1: PGTD – Power Generation, Transmission and Distribution (in RUSSIAN)

10:05-10:15 Design Aspects for Permanent Magnet Synchronous Wind Power Generators / **Viktor Antipov, Andrei Grozov and Anna Ivanova**

10:18-10:28 Isolated Power Supply System with Energy Routers and Renewable Energy Sources / **Yuri Bulatov, Andrey Kryukov and Konstantin Suslov**

10:31-10:41 Multilevel Approaches for Power Flexibility Assessment and Enhancement / **Nikita Tomin, Voropai Nikolai, Victor Kurbatsky, Elena Korkina and Irina Kolosok**

10:44-10:54 Increasing the efficiency of solar power plant in a tropical climate / **Emiliia Iakovleva, Daniel Guerra and Anna Turysheva**

10:57-11:07 Synthesis of Electric Power System Models According to Real Signal Samples / **Marina Altukhova, Maria Lyulina, Dmitrii Makarov, Irina Ryndina and Vladimir Chudny**

11:10-11:20 Study and development of the energy complex of Iraq by using solar power plants / **H. J. Mohammed, N.V. Korovkin, F. M. Al-Rufaee, L. M. Abd Ali, Q. A. Ali and H.A. Issa**

11:23-11:33 Evaluation of three Consumers' Contribution to the Current and Voltage Distortions at the PCC / **Yaroslav Shklyarskiy and Iuliia Dobush**

11:36-11:46 Coordination of power overload emergency automatics with the stability control system of Unified Power System of Russia / **Konstantin Goriachevskii, Ivan Sinianskii and Maxim Popov**

11:49-11:59 Determination of the Redundancy Level of Generating Capacities in the Long-term Development Planning of Modern Electric Power Systems / **Dmitry Krupenev, Nikolay Belyaev and Nikolay Korovkin**

May, 18th

Section 1: PGTD – Power Generation, Transmission and Distribution (in RUSSIAN)

12:02-12:12 Use of a static synchronous series compensator to increase the efficiency of parallel operation of power grid / **Artem I. Denisenko, Sergey V. Smolovik, Vladimir S. Chudny and Aleksandr S. Liamov**

12:15-12:25 Digital models of electromagnetic signal converters for diagnostic systems / **Popov Stanislav, Antonov Artem, Yuzhakov Valeriy, Popov Maksim and Zakharova Elena**

12:28-12:38 System transient parameters fluctuations under network reduction / **Sergey Kasyanov, Evgeniy Sheskin and Irina Lozhnikova**

12:41-12:51 Power system model development experience in RTDS with the example of Park's synchronous generator model / **Dmitry Gerasimov and Alexander Zelenin**

12:54-13:04 Existing electric vehicles charging infrastructure in case countries: USA, Norway, Russia; China, India / **Konstantin Vostrov and Dmitrii Ivanov**

Section 1: Power Generation, Transmission and Distribution & Section 3: High Voltage Technique & Section 4: Development Trends of the Modern Electric Power Industry (in ENGLISH)

10:05-10:15 Optimal Scheduling of Micro-grid Based on Energy Storage Control with Flexible Regulating Boundary / **Zhiyuan Qi, Ruyi Zhang and Xiaowen Li**

10:18-10:28 Characteristics of Self-Healing Processes in Metallized Film Capacitors with All-over and Segmented Electrodes / **Ivan Ivanov, Victor Belko and Dmitry Glivenko**

10:31-10:41 Application of magnetic pulse method for uniaxial high strain rate tension of different metals / **Dmitrii Alekseev, Sergey G. Magazinov, Sergey Krivosheev, Maksim Manzuk and Yuriy Adamian**

10:44-10:54 Mechanical characteristics investigation of mica-containing insulation for stator bars of HV rotating machines / **Ivan Ivanov, Marina Lavrent'eva, Alexandr Reznik, Efrem Feklistov, Tatiana Shikova and Andrey Kosteliov**

10:57-11:07 Investigation of the electro physical properties of the components of modern paper-impregnated insulation / **Dmitry Kiesewetter, Natalia Zhuravleva, Alexandr Reznik, Danila Litvinov and Denis Trubin**

11:10-11:20 Modeling of the Magnetic Field and Current Density Distributions in HTS SMES Systems / **Vladislav M. Govor, Alexander G. Kalimov and Evgenii N. Kobzar**

11:23-11:33 Definition of Critical Currents in Superconducting Magnetic Energy Storage Systems / **Steve Bagan, Alexander Kalimov and Sergey Vazhnov**

Section 1: Power Generation, Transmission and Distribution & Section 3: High Voltage Technique & Section 4: Development Trends of the Modern Electric Power Industry (in ENGLISH)

11:36-11:46 Influence of technological deviations on discharge activity /**Emil Mannanov, Victor Belko, Andrey Kostelov, Alexander Andreev and Ivan Andreev**

11:49-11:59 Adaptive neuro-fuzzy inference system based maximum power point tracking of a PV System / **Mohamed H. Osman, Mohamed A. Abdallah, Mamdouh K. Ahmed and Ahmed Refaat**

12:02-12:12 Single and multi-objective optimal power flow of power system incorporating renewable energy sources / **Mamdouh K. Ahmed and Mohamed H. Osman**

12:15-12:25 New Heuristic Hybrid Algorithm for Optimal Allocation of FACTS Controllers in Power Systems / **Ahmed A. Shehata, Mohamed Elgamal, Abdulla H. Ebrahim and Ahmed Refaat**

12:28-12:38 Optimal installation of SVC using an Analytical-based Approach for Improving Power System Performance / **Ahmed A. Shehata, Mohamed Elgamal and Nikolay V. Korovkin**

May, 19th

Section 2: Electrical Engineering, Electromechanics and Electrotechnology (in RUSSIAN)

10:05-10:15 Development of radiation-resistant induction motors for use in the equipment of hydrometallurgical processing of spent nuclear fuel in the processing module of the pilot demonstration energy complex / **Vitalii Smetanin, Victor Denisenko and Victor Lytkin**

10:18-10:28 Anti-fluxes in a power transformer / **Mansur Shakirov**

10:31-10:41 Modern Methods Of Electrodynamic Forces Calculation In Power Transformers / **Ivan Popov, Georgy Evdokunin and Vladislav Popov**

10:44-10:54 Switched Reluctance Motor Models Using Artificial Intelligence Methods and Techniques / **Viktor Antipov, Andrey Grozov and Anna Ivanova**

10:57-11:07 Analysis of the properties of a thin copper-graphite coating of arcing contacts for protection against erosion / **Pavel Derevyankin, Boris Yushin and Dirk Uhrlandt**

11:10-11:20 Induction Motors Rotor Parameter Identification Using Neural Networks / **Denis Ustinov and Bulat Garipov**

11:23-11:33 Macromodel of twelve-phase valve machine excited by permanent magnets and its application for studying a powerful electric drive / **Aleksey Adalev, Aleksandr Feshin, Vladimir Kuchinskiy, Georgiy Pershikov and Evgeniy Popkov**

11:36-11:46 Mathematical modeling of a flow-through induction water heater with a thermal power of 2 kW / **Matvey Apolinskiy, Alexander Chistyakov and Vladimir Skornyakov**

May, 19th

Section 2: Electrical Engineering, Electromechanics and Electrotechnology (in RUSSIAN)

11:49-11:59 3.3 kV 3.3 kA Integrated Thyristor Chip for Pulse Power Applications / **Evgeniy Mikhailov, Alexander Lyublinskiy, Alexander Zhmodikov and Igor Grekhov**

12:02-12:12 Digital model of induction furnace for carbon graphitation / **Yuriy Perevalov and Victor Demidovich**

12:15-12:25 Electroplasma technologies for cleaning, polishing and welding of metals / **Fivzat Gaysin, Liliya Bagautdinova, Almaz Gaisin, Azat Gaisin, Dzhaudat Zakirov and Kamil Mastyukov**

12:28-12:38 The application of PTC-thermistors for generator circuit breaker / **Evgeniy Safonov and Denis Shidlovskiy**

12:41-12:51 Investigation of the power source parameters influence for the plasma jet of DC plasma torch / **Iurii Murashov, Nikita Obraztsov, Arslan Kadyrov and Ruslan Zhiligotov**

12:54-13:04 Simulation the operation electrotechnological equipment taking into account the mutual influence of ICP plasma torch and HF generator/ **Sergey Zverev, Iurii Murashov, Nikita Obraztsov, Ruslan Zhiligotov and Natalia Kurakina**

13:07-13:17 Modeling power nonlinear transformers in MatLab simulink / **Maksim Sitnikov, Lavrov Anatoliy and Ilyashov Dmitriy**

13:20-13:30 Research of a high frequency contactless battery charger for the marine industry / **Andrey Churkin, Boris Churkin and Vladimir Frolov**

13:33-13:43 Investigation of the power source parameters influence for the plasma jet of DC plasma torch / **Iurii Murashov, Arslan Kadyrov and Ruslan Zhiligotov**

May, 19th

Section 2: Electrical Engineering, Electromechanics and Electrotechnology (in RUSSIAN)

13:46-13:56 Pilot-testing of the coordinated control algorithm on the robot arm model / **Valeriy Lyubich, Marianna Sochava and Nina Khomitsevich**

13:59-14:09 Uneven Load Distribution between the rectifier units / **Sergey Chervonchenko**

14:19-14:29 Development of a three-phase AC/DC converter for charging batteries including electric vehicles / **Vladimir Frolov, Dmitriy Ivanov and Alexandr Ivanovsky**

14:32-14:42 Development of a vacuum tube generator1 MW, 0.44 MHz for ICP torch with parallel operation of two vacuum tubes / **Dmitriy Ivanov, Sergei Zverev, Sergei Grachev, Irina Savelieva, Darya Timokhina and Artem Grudin**

14:45-14:55 Investigation of the process of obtaining metal powders by the method of plasma spraying of a rotating electrode / **Arslan Kadyrov, Boris Yushin, Vladimir Frolov and Milada Bartlova**

14:58-15:08 Development of control, protection and alarm systems for rectifier units for traction substations with modern telemechanics protocols / **Dmitry Lantsev and Vladimir Frolov**

Section 3: High Voltage Technique & Section 4: Development Trends of the Modern Electric Power Industry (in RUSSIAN)

10:05-10:15 Small-sized generator of nanosecond high voltage pulses built on the basis of shock ionization dynistors and drift step-recovery diodes / **Sergey Korotkov and Yury Aristov**

10:18-10:28 Increasing the cybersecurity of data collection and processing systems in an intelligent power system using state estimation methods / **Irina Kolosok and Elena Korkina**

10:31-10:41 The investigation of effect of a multi-chamber arrester mechanical properties on the efficiency of arc extinction / **Alexander Chistyakov, Matvey Apolinskiy, Anna Rogozhina and Alexander Chusov**

10:44-10:54 Cyber resilience analysis of electric power system for state estimation / **Liudmila Gurina**

10:57-11:07 Research on energy characteristics of surge arresters with external series gap for protection of insulation of overhead lines 110 kV / **Alexander Gulov and Alexander Kolychev**

11:10-11:20 Electric field optimization of high voltage electrode / **Kirill Voloshin, Vasily Titkov and Yuri Bocharov**

11:23-11:33 Evaluation of The Influence of The Transformer-Based Current-Limiting Device's Core Material On The Current Limiting Efficiency / **Konstantin Vostrov and Evgeniy Safonov**

11:36-11:46 Study of the MPPT by using simulation methods in the MATLAB /Simulink for PV systems / **H. J. Mohammed, N.V. Korovkin, L. M. Abd Ali, H.A. Issa, M. N. Al-Maliki and A. M. Al-Antaki**

11:49-11:59 Carbon footprint of electrotechnical complexes used to combat paraffin deposits in oil wells / **Alexey Belskiy, Andrey Shrkyarskiy and Valeriia Starshaia**

Section 3: High Voltage Technique & Section 4: Development Trends of the Modern Electric Power Industry (in RUSSIAN)

12:02-12:12 Some electrophysical aspects of induced overvoltage on high voltage overhead power lines / **Alexander Kolychev, Vasiliy Titkov and Alexander Gulov**

12:15-12:25 On the issue of evaluating the resonance properties of external and internal oscillatory circuits of power autotransformers / **Nikolay Silin, Valentin Chaika and Tatiana Minevich**

12:28-12:38 Research of the optimal extraction factor of a TPP operating on alternative fuel / **Daria Kolbantseva, Dmitriy Treshchev, Irina Anikina and Milana Treshcheva**

12:41-12:51 Water-alcohol synthesis of catalytically active palladium nanoparticles for electrode / **Nadezhda Gubanova, Alexandra Ivanova, Vasily Matveev, Elena Ivankova, Olga Shilova and Irina Kruchinina**

12:54-13:04 A research of a possibility to use reversely switched dinistors for commutation of power current pulses with a submicrosecond rise time / **Sergey Korotkov and Alexander Zhmodikov**

13:07-13:17 Accounting for harmonic distortion in electromagnetic field simulation of multi-wire lines / **Natalia Buyakova, Vasily Zakaryukin and Andrei Kryukov**