

5th 2023 International Youth Conference on Radio Electronics, Electrical and Power Engineering (REEPE), IEEE

The Official Language of Conference is English.

Both the Russian Federation and the Arab Republic of Egypt will host the conference for all participants. Online format is only available for plenary speakers and international participants.

Registration of Participants – (March 16, 2023)

(“10:30 – 11:40”, Cairo time/ “11:30 – 12:40”, Moscow time)

«MPEI», Moscow, Krasnokazarmennaya st. 17, Room Г-200 (G-200), Russia;
Gamal Mokhtar Hall, College of Engineering and Technology, Heliopolis Campus,
AASTMT, Egypt.

Opening the Conference Event

(March 16, 2023) (“13:00 – 15:00”, Moscow time/ “12:00 – 14:00”, Cairo time)

1. **Rector:** Dr. Nikolay Rogalyov, Professor, Moscow Power Engineering Institute, Moscow, Russian Federation.
2. **Russian Embassy in Cairo, Egypt.**
3. **Vice-Rector for Scientific Work:** Dr. Viktor Karpovich Dragunov, Professor, Moscow Power Engineering Institute, Moscow, Russian Federation.
4. **Vice-Rector for International Relation:** Dr. Alexander Tarasov, Associate Professor, Moscow Power Engineering Institute, Moscow, Russian Federation.
5. **Dean of the College of Engineering and Technology- Heliopolis:** Dr. Yasser Galal Mostafa, Professor, College of Engineering and Technology, Cairo Campus, AASTMT, Egypt.
6. **Dean of Education - Cairo:** Dr. Rania El-Sharkawy, Professor, College of Engineering and Technology, Cairo Campus, AASTMT, Egypt.
7. **Head of the Department of Science and Innovation under the Ministry of Education and Science:** Dr. Niyozzi Sirojiddin Rajabboki, Associate Professor, Dushanbe, Republic of Tajikistan.
8. **Vice-Rector for science and innovation:** Dr. Abdullozoda Ramazon Tolibjon, Professor, Tajik Technical University named after academician M.S. Osimi, Dushanbe, Republic of Tajikistan.

9. **General Chair of the IEEE-REEPE conference:** Dr. Rinat Nasirov, Associate Professor, Electrical Power System department, Moscow Power Engineering Institute.

10. **Co-Chair and Technical Program Chair of the IEEE-REEPE conference:** Dr. Mohamed A. Tolba, Assistant Professor, Egyptian Atomic Energy Authority, Cairo, Egypt. Assistant Professor, Electrical Power System department, Moscow Power Engineering Institute.

11. **Plenary Speaker (Introduce Lecture “15 minutes”):** Dr. Mostafa F. Shaaban, Associate Professor, Department of Electrical Engineering, American University of Sharjah, Sharjah, Emirates.
<https://www.scopus.com/authid/detail.uri?authorId=26434445500>

12. **Plenary Speaker (Introduce Lecture “15 minutes”):** Dr. Sameh Shaaban, Assistant professor. College of Engineering and Technology, Cairo Campus, AASTMT, Egypt.
<https://scholar.google.com.eg/citations?user=gHoD7rEAAAAJ&hl=en>

Coffee Break 15:00 – 15:35

Conference Program (March 16, 2023)

Directors of the sections are as follows:

For section A: Dr. Mohammed Alhasheem;

For section B: Dr. Ylia Sergeevna Valeeva;

For section C: Dr. Artem Vanin;

For section D: Dr. Ansar R. Safin, Dr. Maria I. Fedorova;

For section E: Dr. Roman S. Kulikov, Eng. Maxim V. Burmeyster

Start the participants program

{Each Participant has 10 minutes for introducing presentation and questions by attendees}

**Starting the international participants' presentations
(15:45-18:00 "Moscow time") & (14:45-17:00 "Cairo time")**

Section A: Power, Energy and Industry Applications; Room (Egy-01)

{Each Participant has 10 minutes for introducing presentation and questions by attendees}

1.	Adaptive Protection Scheme for Overcurrent and Directional Overcurrent Relays In Distribution Networks with Distributed Generation	<i>Mona K. Elmahgoub, Mohamed Ezzat, Amr Magdy</i>
2.	Optimal Overcurrent Relay Coordination For Small Scale Microgrid	<i>Mahmoud Gamal Ali ElSamahy, Eman Beshr, Khaled El Bahrawy</i>
3.	Design and Analysis of Control Strategies for a Stand-Alone VSI with LC Output Filter	<i>Abdulrahman Gamal, Mohamed A. Tolba, Mohammed Alhasheem</i>
4.	Smart Charging of Electric Vehicles in Charging Stations	<i>Doaa Abubakr Hussien, Walid A.Omran, R. M. Sharkawy</i>
5.	Design of a Compact, Dual-band, and Single-Fed Patch Antenna for 5G Applications	<i>Rodina Hassan, Sherif K. Eldayasti, Mohamed A. Aboul-Dahab</i>
6.	Islanded microgrid with robust power sharing and voltage stabilization control structure using model predictive control	<i>Zahwa Khaled, Mohammed Alhasheem, Hadi M. Elhelw</i>

7.	Microgrid Applications: Effects of Communication Systems on Secondary Control Performance	<i>Karim Elewa, Mohammed Alhasheem, Hadi M. Elhelw</i>
8.	LQR Stability Control of Scissor Pair Gyro-Stabilized Two Wheel Robot	<i>Ahmed Amin, Moustafa A. Fouz, Ahmed Elsayaf</i>
9.	Phasor Measurement Unit Optimal Allocation Utilizing Discrete Water Cycle Optimization	<i>Noha M. Tawfik, Noha H. El-Amary, Loai Nasrat</i>
10.	Wind Turbines Analysis and Analytics of Power Generation by using Long Short Term Memory	<i>Shady A. Nagy, Ziad O. Yousef</i>
11.	Two-Stage Single-Phase EV On-Board Charger Based on Interleaved Bridgeless AC-DC Converter	<i>Mahmoud Sameh Abdelmomen, Ibrahim Abdelsalam, Mostafa S. Hamad</i>

Starting the participants' presentations (15:45-18:00)

{Each Participant has 10 minutes for introducing presentation and questions by attendees}

Section B: Power, Energy and Industry Applications. Nuclear and Mechanical Science Applications. Components, Circuits, Devices and Systems. Computing, Signal Processing and Analysis. General Topics for Engineers. Fields, Waves and Electromagnetics. Room (KU-02)

1.	Thermodynamic characteristics of the processing of gaseous hydrocarbons in the SOFC reforming system	<i>Antonina A. Filimonova, Egor S. Mayorov</i>
2.	Impact of water coolant flow on thermal characteristics of hybrid cooling tower	<i>Vitaly V. Kharkov, Ilnur N. Madyshev, Anna O. Mayasova, Vadim E. Zinurov</i>
3.	The Influence of Working Fluid on Stirling Engine Performance	<i>Sajjad A. Salih, Baseem A. Aljashaami, Mohammed A. Qasim, Ahmed H. Mola, Sergey. E. Shcheklein, Alexey M. Dubinin</i>
4.	Classification of vibration diagnostic systems Brush-collector assembly	<i>Olga Filina, Azat Khusnutdinov, Khalil Vakhitov, Aida Abdyllina, Olga Salnikova</i>
5.	Investigation of bacterial contamination of a mixed-bed filter of a TPP water treatment plant by IR spectroscopy	<i>Vlasova A.Y., Babikov O.E.</i>
6.	Software and algorithmic support for online assessment of transformer substation technical condition 35/6(10) kV	<i>Alsu R. Galyautdinova, Igor V. Ivshin, Oleg V. Vladimirov, Marat F. Nizamiev, Albert H. Safiullin</i>
7.	Computer simulation of the biomorphic neuroprocessor	<i>Abdulla Ebrahim, Alexander Busygin, Sergey Udovichenko</i>
8.	Decarbonization methods of electric energy production in a solid oxide fuel cell	<i>Filimonova A.A. , Vlasova A.Y., Kamalieva R.F., Babikov O.E.</i>
9.	Application of numerical simulation methods to improve the efficiency of cooling systems	<i>Andrey Ermakov, Rishat Salakhov, Renat Khismatullin</i>

10. The Effect of New Specific Electrical Loads on Residential Complexes	<i>Yuriy I. Soluyanov, Alexander I. Fedotov, Azat R. Akhmetshin, Vladimir I. Soluyanov</i>
11. Development and research of the current measurement circuit protection of a resonant test device	<i>Regina T. Khazieva, Andrey V. Mukhametshin</i>
12. Research of a multifunctional integrated electromagnetic component as an LC filter in DC/DC converters	<i>Robert R. Sattarov, Regina T. Khazieva, Maksim D. Ivanov</i>
13. Determination of the Damage Location on Multiphase and Multi-Wire Power Transmission Lines	<i>Stepan G. Tiguntsev, Saidjon B. Usmonov, Konstantin V. Shafarevich</i>
14. Improving the information veracity of the complex of multiparametric control of the relaxometer based on a neural network	<i>Galina A. Ovseenko, Rustem S. Kashaev, Oleg V. Kozelkov, Tamara K. Filimonova, Tatyana S. Evdokimova, Aliya M. Mardanova</i>
15. The possibility of artificial neural network application in prototyping in instrument making industry	<i>Galina A. Ovseenko, Rustem S. Kashaev, Irina A. Koshkina, Valera V. Kosulin, Gulia A. Khamatgaleeva, Ruslan A. Ulengov</i>
16. Analysis and optimization of the operation of deaeration devices on heat sources	<i>Olga V. Pazushkina, Maksim V. Zolin</i>
17. Justification of the scope of competitive application of liquefied natural gas	<i>Oksana N. Medvedeva, Sergey D. Perevalov</i>
18. Convolutional Neural Network to Detect Support and Suspend Insulators on Infrared Images	<i>Alina D. Zaripova</i>
19. Analysis of energy transformer efficiency in heat supply system	<i>Radik Valiev, Roman Ponomarev, Alik Mukatdarov</i>
20. Effect of Impact Damages on the Strength of Wind Turbine Blade	<i>Victor I. Mitryaykin, Tatiana A. Zaitseva, Oleg N. Bezzametov, Mikhail E. Kuznetsov</i>

Section C: Power, Energy and Industry Applications; Room (G-200)

1. Simulation of the Condensed Phase Particles Electrization in Combustion Products of the Model Hybrid Rocket Engine	<i>A.V. Rudinskii, A.V. Kravchenko, V.E. Evstigneeva</i>
2. Methods and Principles of Carbon Footprint Calculation. Relevance of Application of these Approaches in Russia and the World	<i>Tuchin Mikhail Vitalievich, Kalistratova Alina Aleksandrovna, Chekryzhov Arkadiy Kirillovich, Ivanov Mikhail Vitalievich, Rozhok Anastasiia Pavlovna</i>
3. Development of a distributed digital microgrid generation system and features of its application in the retail electricity market	<i>Maksim S. Ivanitckii, Mahsud M. Sultanov, Elena V. Kuryanova</i>
4. Modeling of the work of the UFLS using the new component of the UFLS in the PSCAD/EMTDC software	<i>Borbad M. Giyoev, Bakhtiyor F. Ibragimov, Abduvakil M. Rasulov, Manizha M. Mahmadsaidzoda, Bahodur A. Gayurov</i>
5. Development of a comprehensive cybersecurity solution for an automated process control system of a digital substation	<i>Vladimir Shikhin, Olga Trutneva</i>
6. Influence of nonlinear load on the	<i>Aleksandr N. Skamyin, Iuliia V. Dobush,</i>

7.	A Comparison Between the use of High and Low Pass Filters in VSC-MTDC Systems	<i>Ibrahim Alwazah, Ahmed S. Al-akayshee, Ramis V. Bulatov, Rinat R. Nasyrov</i>
8.	Hybrid Solar Thermal Power Plant Potential in Bangladesh	<i>Ani A. Alam, Dudolin A. Anatolevich</i>
9.	Development of model for optimizing thermal power plant operation regimes while taking into account the criteria of efficiency and reliability	<i>Mahsud M. Sultanov, Anatoly A. Konstantinov</i>
10.	Economic assessment of the prospects for the use of CAES to maintain the modes of the power system	<i>Daniil V. Semin, Aleksandr V. Fedukhin, Stanislav A. Dronov, Dmitry P. Medov</i>

Section D: Components, Circuits, Devices and Systems. Computing, Signal Processing and Analysis. Room (D-209)

1.	Calculation, modeling and programming of a three-link manipulator robot	<i>Svetlana Vtyurina, Denis Shilin</i>
2.	Compact modeling and digital twins of capacitive fractal microsystems: characteristics variations caused by heavy charged particles	<i>Vladimir V. Terekhov, Andrey A. Glushko, Vladimir V. Makarchuk, Elena V. Rezhikova, Vadim A. Shakhnov, Lyudmila A. Zinchenko</i>
3.	Autoregressive Models for Solving the Problem of Forecasting Active Energy Complexes	<i>M.A. Durova, A.N. Zein, S.V. Borisova, A.A. Mishin, D. Kan, S.K. Osipov</i>
4.	Investigation of the Correlation Method Accuracy for Measuring Time Intervals in Ultrasonic Flowmeters	<i>Sergey I. Gerasimov, Vladimir D. Glushnev</i>
5.	Model of the conductivity of a composite material on a dielectric matrix and a conductive filler	<i>Anton Matasov, Arsenii Evsiukov, Roman Shcherbakov</i>
6.	Designing the system for detecting unsuitable marble stones for an industrial process using convolutional neural networks	<i>Shubin Ivan, Denis Shilin</i>
7.	Development of the digital twin for a multi-purpose processing plant training simulator	<i>Ilya Zabarin, Denis Shilin</i>
8.	Equivalent Number of Bits of Major ADC Types Considering the Evaluation of Their Dynamic Error	<i>Leonty K. Samoilo, Nikolay N. Prokopenko, Vladislav E. Chumakov, Anna V. Bugakova</i>
9.	Occurrence of fatigue cracks on the surface of aluminum wire	<i>Kul'kov V.G., Norov D. Sh., Likhachev A.I., Blagochinnov A.V.</i>
10.	Thermal stresses using Finite Elements Method	<i>Majd A. Raad, Alexey Y. Popov</i>

Section E: Nuclear and Mechanical Science Applications. Components, Circuits, Devices and Systems. Computing, Signal Processing and Analysis. General Topics for Engineers. Fields, Waves and Electromagnetics. Room (D-2/10)

1.	Evaluation of the Informative Value of ECG Fiducial Points in Identification Tasks	<i>Svetlana V. Mezentseva, Aleksey N. Tikhomirov</i>
2.	Synchronous execution of program instructions in a distributed data transmission network based on FPGA	<i>Alexander A. Deev, Andrei A. Kalshchikov</i>
3.	Malicious Node Detection in Wireless Sensor Networks: Comparative Study	<i>Lara Darwish, Mohammad Nassr, Fadi Ghosna, Habib M. Fardoun, Daria K. Voronkova, Mohammad Anbar</i>
4.	Synthesis of the UWB signal processing algorithm on an artificial neural network	<i>Sergey A. Serov, Alexander A. Chugunov, Roman S. Kulikov, Alexander P. Malyshev, Oleg V. Glukhov, Tatiana A. Brovko</i>
5.	Loosely Coupled UWB/Stereo Camera Integration for Mobile Robots Indoor Navigation	<i>Oleg V. Glukhov, Ivan A. Akinfiyev, Andrey D. Razorvin, Alexandr A. Chugunov, Dmitriy A. Gutarev, Sergey A. Serov</i>
6.	Diamond-Like Silicon-Carbon Films Preparation at Different Frequencies of Plasma-Chemical Decomposition	<i>Tatiana Chukanova, Alexei Barinov, Vladimir Yemets, Denis Zezin, Anatoly Popov</i>
7.	Mathematical model of deformations of the antenna frame for space communications	<i>Artem D. Ivanitskii, Mikhail N. Kirsanov</i>
8.	Assessment of Students' Performance According to the Characteristics of the Respiratory Cycle	<i>S.A.Andreeva, V.S.Malyshev, E.V.Fedorova, A.M.Borovkova</i>

Conference Program (March 17, 2023)

Directors of the sections are as follows:

For section A: Dr. Artem Vanin;

For section B: Dr. Ansar R. Safin, Dr. Maria I. Fedorova;

For section C: Dr. Roman S. Kulikov, Eng. Maxim V. Burmeyster

Start the participants program

Starting the participants' presentations (10:30-12:45)

{Each Participant has 10 minutes for introducing presentation and questions by attendees}

Section A1: Power, Energy and Industry Applications; Room (D-213)

1. A Novel Model of Integrated Combined Cycle Power Plants with ORC, ABRC and Hydrogen	Baydaa Bo Dakkah, Ildar A. Sultanguzin, Yury V. Yavorovsky, Nadezhda A. Belekhova
2. The Research on Heat Loss Reduction of Prefabricated Building in Ulan-Bator	Tserendorj Tsetsgee, Vladislav Y. Chaikin, Ildar A. Sultanguzin, Ivan D. Kalyakin, Yuriy V. Yavorovsky, Nerbaatar Batbayar
3. Estimation of the Effect of Non-Synchronization of Voltage and Current Samples on the Active Power Measurement Error	Andrey N. Serov, Kirill A. Ivanenko, Sergey A. Podobuev, Liliya S. Serdyukova, Alexander A. Shatokhin
4. Comparative analysis of evaluation approaches for the climatic factors influence on power grid facilities reliability	Oleg A. Loktionov, Mikhail A. Zabelin, Ekaterina A. Belova
5. Effective Numerical Solution to the Problem of Temperature Oscillations in an Isolated Heat Accumulator	Michail Purdin, Renata Magomedova
6. A study of an approach to the construction of high-power with high-voltage supplies	Dmitry A. Seregin, Igor P. Voronin, Maria S. Pavlova, Dmitry V. Mostovoy, Vladislav D. Gromov, Ann M. Stoynova
7. A Review of Robotic Gloves Applied for Remote Control in Various Systems	Gasan R. Saypulaev, Igor V. Merkurjev, Musa R. Saypulaev, Victor K. Shestakov, Nikita V. Glazkov, Danil R. Andreev
8. Parallel Connection of Voltage Inverters Stability Analysis	Dmitry A. Seregin, Vladislav D. Gromov, Artush V. Badalyan, Maria I. Fedorova, Maria S. Pavlova, Anna M. Stoynova

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| 9. Numerical Simulation of the Gas Cooling Turbogenerator System with the Gap-Pickup Rotor | <i>Dmitry Verkhovtsev, Stanislav Gulay, Anton Permut, Maksim Maiantcev, Andrei Liamin</i> |
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| 10. Optimal Configuration of Stand-Alone Hybrid Energy System in New Tiba City, Luxor, Egypt | <i>Zakaria Abd El-Aziem, Salah Kamel, Hoda Abd El-Sattar, Loai Nasrat, Mohamed A. Tolba</i> |

Coffee Break 12:45-13:30

Continuing the participants' presentations (13:45-15:45)

Section A2: Power, Energy and Industry Applications; Room (D-213)

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| 1. Probabilistic-statistical analysis of the maximum electrical load of apartment | <i>Vasily A. Khomichev, Galaktion V. Shvedov</i> |
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| 2. The Hybrid Method for Parameters Estimation of a Single-loop Equivalent Circuit of Induction Motors | <i>V. A. Pavlukov, S. N. Tkachenko</i> |
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| 3. Digital Infrastructure Development for Semiconductor Devices Controlling for Electric Power Complex | <i>Maria I. Fedorova, Ivan I. Zhuravlev, Denis P. Khmelyuk, Andrey E. Bannov, Igor B. Yakovlev</i> |
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| 4. The SCADA System Digital Infrastructure Implementation in Distribution Networks | <i>Maria I. Fedorova, Ivan I. Zhuravlyov, Dmitry S. Kuzenev, Andrey E. Bannov, Denis P. Khmelyuk</i> |
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| 5. Reliability analysis of power distribution network in urban area | <i>Dmitry Gabdushev, Artem Vanin</i> |
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| 6. Lightning direction finding system as a tool to improve reliability | <i>Andrey G. Gruzdov, Alexander A. Voloshin, Evgeniy A. Voloshin, Ekaterina E. Pashkovskaya</i> |
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| 7. Analysis Of The Three-Phase AC Short-Circuit And The DC Short-Circuit in a VSC-MTDC System | <i>Ibrahim Alwazah, Maxim V. Burmeyster, Mohamed A. Tolba, Rinat R. Nasyrov</i> |
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| 8. Methodology for determining the optimal configuration of a wind farms complex and its approval | <i>Galina V. Deryugina, Evgeniy V. Ignatiev, Nikita V. Sychev</i> |
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| 9. Fruit Fly Optimization Technique Based Regulator for LFC of Conventional Power System with the Integration of Plugin Electric Vehicles | <i>Ch. Naga Sai Kalyan, B. Srikanth Goud, Ch. Rami Reddy, Mohit Bajaj, Vladimir N. Tulsy, Salah Kamel</i> |
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| 10. Stationary Component of Heat Losses from Ground Heat Accumulators and Heat Exchangers | <i>Michail Purdin, Renata Magomedova</i> |

Starting the participants' presentations (10:30-12:45)

{Each Participant has 10 minutes for introducing presentation and questions by attendees}

Section B1: Components, Circuits, Devices and Systems. Computing, Signal Processing and Analysis. Room (D-209)

1. Active Content Publication System for STEM Education	Gaik G. Ambarjian, Alexandra A. Lipskya, Valery F. Ochrov, Anton I. Tikhonov.
2. Metallized film capacitors operation under the ramp voltage test	Dmitry Y. Glivenko, Ivan O. Ivanov, Ahmet A. Hojamov, Alexey V. Pechnikov
3. Evaluation of Multiple Bioradar-based Fall Detection System's Performance on a Test Sample including Recordings with Pets, moving Appliances and Household Activity	Dmitry Bezdetnyy, Valeriy Slizov, Lesya Anishchenko
4. Optimisation of the CFD-model calculation method for natural convection in large volume	Leonid O. Iakovlev, Ian O. Morozov
5. High-Speed Operational Amplifiers Based on the Advanced Derivatives of the Class AB Intermediate Stage	Nikolay Prokopenko, Vladislav Chumakov, Dmitriy Kleimenkin
6. Application of machine vision technology for video recordings of the combustion process of energetic materials	Anastasiia Kaida, Fedor Gubarev, Andrei Mostovshchikov
7. Reducing odd-order nonlinear distortions in a low noise amplifier	Anvar M. Ibragimov, Mikhail N. Mikhailov, Evgeniy P. Smirnov
8. Equivalent Number of Bits of the ADC in the Implementation of Its Input Driver Based on High-Speed Operational Amplifiers	L.K. Samoilov, Nikolay Prokopenko, Vladislav Chumakov
9. High-Precision Computing based on the CUDA Architecture in Residual Number Systems	Vladimir A. Chumychkin, Nataliya A. Galanina
10. Estimation of the optimal record interval of the technological parameters	Mahsud M. Sultanov, Ilya A. Boldyrev, Kirill V. Evseev, Nikita S. Khlyustov
11. Investigation of the effect of multiple oxidation and ion sputtering on the formation of inhomogeneous oxide layers on the surface of an ultrathin metal film	Alexandr V. Lubenchenko, Dmitry A. Ivanov, Denis S. Lukiantsev, Mikhail B. Smirnov, Oleg N. Pavlov

Coffee Break 12:45-13:30

Continuing the participants' presentations (13:45-15:45)

Section B2: Components, Circuits, Devices and Systems. Computing, Signal Processing and Analysis. Room (D-209)

1. Modeling the Algorithm for Determining the Coordinates of Radio Radiation Sources Using the Maximum Likelihood Method in TDoA Systems	Alexander A. Chugunov, Roman S. Kulikov, Nikita I. Petukhov, Alexander P. Malyshev, Sergey A. Serov, Oleg V. Glukhov
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2.	Optimization of navigation algorithms parameters in fingerprint method by received Wi-Fi signal	<i>Alexander P. Malyshev, Stepan A. Chuykin, Nikita I. Petukhov, Pavel Yu. Anuchin, Tatiana A. Brovko, Artyom D. Evseev</i>
3.	Hardware optimized digital resamplers based on half-band filters	<i>Bakholdin Nikita, Alexander Degtyarev, Sergey Bakhurin</i>
4.	Analysis of EKF, SR-UKF and Particle filter for ToF/AoA Local Navigation System and IMU Measurements	<i>Nikita I. Petukhov, Kirill V. Kochka, Artyom D. Evseev, Tatiana. A. Brovko, Stepan V. Orobchenko, I. V. Korogodin</i>
5.	Optimization of the algorithm for the placement of reference points in the positional local navigation system	<i>Roman S. Kulikov, Stepan V. Orobchenko, Mikhail M. Zainutdinov, Sofia S. Erochkina, Anna O. Zhirnova, Alexander V. Pavlovsky</i>
6.	Quality Assessment of a Satellite Communication System Using a Weather-Dependent Parametric Model	<i>Makar E. Korchagin, Grigoriy M. Seregin</i>
7.	Pressure influence on morphological and functional changes in forearm tissues research	<i>Ekaterina Romanova, Elizaveta Leontyeva, Vladislava Kapravchuk, Tatiana Goidina, Andrey Briko, Alexander Kobelev</i>
8.	Aspects of effective planning of electroporation procedure using finite element analysis methods	<i>Andrey Briko, Vladislava Kapravchuk, Ekaterina Sorokina, Maria Baryshnikova, Vladislav Kosyrev, Vyacheslav Kosorukov</i>
9.	Determination of Deformations of Transport Infrastructure Objects Using Optical Information Technologies	<i>Daniil A. Loktev, Alexey A. Loktev, Konstantin A. Izotov</i>
10.	Machine Learning approach for predicting suitable wavelengths in OFDM-FSO system	<i>Ranim Younes, Mohammad Nassr, Mohammad Anbar, Fadi Ghosna, Hamid Ali Abed Alasadi, Daria K. Voronkova</i>

Starting the participants' presentations (10:30-12:45)

{Each Participant has 10 minutes for introducing presentation and questions by attendees}

Section C1: Nuclear and Mechanical Science Applications. Computing, Signal Processing and Analysis. General Topics for Engineers. Fields, Waves and Electromagnetics. Room (D-2/10)

1.	Extract-Load-Transform (ELT) Process Runtime Analysis and Optimization	<i>Aleksei E. Zvonarev, Dmitriy S. Gudilin, Dmitriy A. Lychagin, Boris S. Goryachkin</i>
2.	Research of Respiratory Waves in Space Flight and Liquid Respiration	<i>Alexander E. Larionov, Peter V. Luzhnov</i>
3.	An Approach to Eye-Brain-Computer Interface Development	<i>Leonid R. Kondaurov, Ekaterina A. Baykova, Alexander N. Dmitriev, Elizaveta S. Boeva, Ekaterina A. Romanova, Nekoula Haddad</i>
4.	Estimation of rotation measurement error of objects using computer simulation	<i>Ekaterina V. Shmatko, Nikita Yu. Sivov, Anton Yu. Poroykov</i>

5.	Design of compact ultra-wideband spiral antenna for ground-penetrating radar	<i>Andrey B. Borzov, Konstantin P. Likhoedenko, Victor B. Suchkov, Maxim V. Artyushkin, Grigory M. Seregin</i>
6.	Determination of Indicators for Calculating Environmental Risk	<i>Anastasia M. Borovkova, Daria D. Volkova, Elena V. Fedorova, Natalia V. Zvonkova</i>
7.	Impact of the “well-being” system indicators on the safety culture level and health of power industry employees	<i>Oleg A. Loktionov, Natalya V. Vasileva, Olga E. Kondrateva</i>
8.	Calculation of individual elements of enclosing structures of a continuous steelmaking unit	<i>Konstantin V. Strogonov, Andrey A. Borisov, Viacheslav A. Murashov, Dmitry D. Lvov</i>
9.	Simulation of energy absorption in a device for microwave heating of liquid	<i>Natalia N. Kisel, Anastasia A. Vaganova, Andrey I. Panychev</i>

Coffee Break 12:45-13:30

Continuing the participants’ presentations (13:45-15:45)

Section C2: Nuclear and Mechanical Science Applications. Computing, Signal Processing and Analysis. General Topics for Engineers. Fields, Waves and Electromagnetics. Room (D-2/10)

1.	Investigation of the influence of the CSRR resonator parameters on the characteristics of a Ku-band microstrip SIW antenna	<i>Natalia N. Kisel, Andrey I. Panychev, Anastasia A. Vaganova</i>
2.	Solving the problem of emergency protection to install a nuclear reactor to subcritical mode	<i>Nikolay Oshkanov, Maria Metelnikova, Gleb Vaulin</i>
3.	Electrochemical determination of silver nanoparticles on flexible laser reduced graphene oxide sensor	<i>Shojaa A. Aljarar, Ekaterina S. Marchenko</i>
4.	Design and Optimization of Helmholtz Coils For Magnetic Fields	<i>Muhammad Saqib, Yubin Xu, Shojaa A. Aljarar, Amrit L. Hui</i>
5.	Mathematical Model of Electric Arc in Low-voltage DC Contactors	<i>A. Y. Verstunin, N.A. Vedeshenkov</i>
6.	Simulation of the two-phase flow through the hole of the submerged perforated sheet	<i>Alexander S. Nikulin, Sergey A. Tokarev, Vladimir I. Melikhov</i>
7.	Development of a Method for Calculating ASW Frequencies in VVER-440 pressurizer	<i>K. N. Proskuryakov, R.M. Ismail, A.V. Anikeev</i>
8.	On the feasibility of evaluating the performance of strain gauge force sensors using open FEM software Code_Aster	<i>Sergei I. Gavrilencov</i>
9.	Digital technology for constructing the acoustic field of reactor plants of the VVER type	<i>K. N. Proskuryakov, A.V. Anikeev, R.M. Ismail</i>

Conference Program (March 18, 2023)

Directors of the sections are as follows:

For section A: Dr. Artem Vanin;

For section B: Dr. Ansar R. Safin, Dr. Maria I. Fedorova;

For section C: Dr. Roman S. Kulikov, Eng. Maxim V. Burmeyster

Start the participants program

Starting the participants' presentations (10:30-12:45)

{Each Participant has 10 minutes for introducing presentation and questions by attendees}

Section A1: Power, Energy and Industry Applications; Room (D-213)

1.	Configuring an Off-Grid Hybrid Renewable Energy System in the Arctic Zone	<i>Alexander Klokov, Egor Loktionov</i>
2.	Impact of Dopants Incomplete Ionization on Resistivity Profiles in Triple-Doped Multicrystalline Silicon	<i>Radchenko I</i>
3.	Energy Theft Detection in Smart Grids via Explainable Attention Maps	<i>Denis O. Ishkov, Konstantin S. Myshenkov, Valery I. Terekhov</i>
4.	A Coordination of the Capacities of the Hybrid Renewable Energy System and the Seasonal Variable Load Following the Intermittent Generation	<i>Alexander Tutunin, Egor Loktionov</i>
5.	The concept of a software and technological platform for digital twins based on energy dynamics methods	<i>Igor E. Starostin, Alexey A. Druzhinin</i>
6.	Permanent Magnet Wind Generator with Double Excitation for Smart Grids	<i>L. L. Amuhaya, E. S. Obe, Nicasio M. Muchuka, Udochukwu B. Akuru, M. J. Kamper</i>
7.	The need for using various interpretation methods for power transformer DGA results	<i>Vladislav Dm. Bitney, Vitaly Yu. Ulyanov, Michael An. Moiseev</i>
8.	Effect of the Reactive Power Consumption Mode on the Technical Condition of the T3FP-110-2MU3 Turbogenerator	<i>Vladislav Dm. Bitney, Nickolay N. Smotrov, Alexander An. Timofeev, Andrey Vl. Okhlopov</i>
9.	Data processing model for equipment monitoring and diagnostics systems	<i>Mahsud M. Sultanov1, Ilya A. Boldyrev2, Pavel D. Menshikov</i>

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| 10. CES and TCSC based Supplementary Controller for Stability of Renewable Energy Integrated Nonlinear Power System | <i>CH. Naga Sai Kalyan, Ch. Rami Reddy, B. Srikanth Goud, Mohit Bajaj, Mohamed A. Tolba, Salah Kamel</i> |
| 11. Revealing the Significance of Time Delays on the Performance of Diverse Source Power Systems under Fruit Fly Optimization Tuned 3DOFTID Regulator | <i>CH. Naga Sai Kalyan, B. Srikanth Goud, Ch. Rami Reddy, Mohit Bajaj, Vladimir N. Tulsy, Salah Kamel</i> |

Coffee Break 12:45-13:30

Continuing the participants' presentations (13:45-15:45)

Section A2: Power, Energy and Industry Applications; Room (D-213)

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| 1. Investigation of fault location on extra-high voltage lines with synchrophasors based on real transient waveforms | <i>Andrey A. Yablokov, Igor E. Ivanov, Filipp A. Kulikov, Anton V. Panaschatenko, Yaroslav A. Umnov, Andrey R. Tychkin</i> |
| 2. Experimental Study on Torrefaction of Food Waste on The High-temperature Furnace HT 08.17 | <i>Nguyen D. Khuong, Stepanova T. Aleksandrovna</i> |
| 3. Protection of power facilities personnel from electric fields of industrial frequency | <i>Ilya V. Korolev, A. A. Zakrevsky, N.V. Vasileva</i> |
| 4. Influence of the placement of buildings outside the territory of the thermal power station sanitary protection zone on noise reduction | <i>V.B Tupov, A.B. Mukhametov</i> |
| 5. Effect of hydrogen pressure on the electrochemical hydrogen pump performance | <i>Boris V. Ivanov, Nataliya A. Ivanova, Ruslan M. Mensharapov, Dmitry D. Spasov, Victoria V. Shkandybina, Matvey V. Sinyakov</i> |
| 6. Mathematical modeling of methane-hydrogen fuel combustion processes in Aspen Plus | <i>Stanislav A. Dronov, Alexander V. Fedyukhin, Daniil V. Semin, Aleksei S. Malenkov, Aleksei G. Gusenko</i> |
| 7. Production, storage and use of hydrogen for seasonal accumulation in energy efficient house | <i>Nadezhda A. Belekhova, Ildar A. Sultanguzin, Yury V. Yavorovsky, Baydaa Bo Dakkah, Vladislav Y. Chaikin</i> |
| 8. Application of Dissipative Variable Cross-Section Noise Silencers at Industrial Facilities | <i>A.A Taratorin, A.B. Mukhametov</i> |
| 9. Annual cycle of a seasonal heat accumulator of thermal energy of an energy-efficient house | <i>Vladislav Y. Chaikin, Tserendorj Tsetsgee, Baydaa Bo Dakkah, Ildar A. Sultanguzin, Yuri V. Yavorovsky, Andrey N. Nechaev</i> |
| 10. Air cooling simulation in an apartment building premises | <i>Anastasia A. Nikaeva, Artem A. Vorobyov, Mikhail V. Gorelov</i> |
| 11. Producing hydrogen by electrolysis to ensure passage of the minimum electrical load | <i>Evgeny T. Ilyin, Diana. I. Levenok, Dmitry A. Lymarev</i> |

Starting the participants' presentations (10:30-12:45)

{Each Participant has 10 minutes for introducing presentation and questions by attendees}

Section B1: Components, Circuits, Devices and Systems. Computing, Signal Processing and Analysis. Room (D-209)

1. Determining the Dynamic Characteristics of Moving Vehicles Using Image Blur Analysis	<i>Daniil A. Loktev, Alexey A. Loktev, Vadim V. Korolev, Andrey A. Linenko</i>
2. Determining the DOA of jamming signals using Root-MUSIC and MVDR algorithms for planar elliptical digital antenna array	<i>Alexey Propastin, Vladimir Prokhorenko</i>
3. On-board intelligent decision support system development for aviation complexes using machine-oriented methods	<i>Alexander Vorobev, Ilya Elesin, Alexander Shevadronov</i>
4. Parameter Optimization of Broadband Interference-Suppressing Filters of High-Performance Power Supplies	<i>Igor V. Chukhraev, Vladimir E. Drach</i>
5. Accuracy of Feature Extraction Approaches in the Task of Recognition and Classification of Isolated Words in Speech	<i>Aleksandr Messerle, Yury Gorshkov</i>
6. Burning Gas Sensor Module Adapter Development and Test Operation Results Processing	<i>Andrey Anatolievich Ivantsov, Elizaveta Andreevna Mironova, Mariya Yurievna Ryakhina</i>
7. MARLMUI: Multi-Agent Reinforcement Learning Approach In Mobile Adaptive User Interface	<i>Dmitry A. Vidmanov, alexander N. Alfimtsev</i>
8. Decision Making for Advanced Driver Assistance Systems for Public Transport	<i>Yazan Wassouf, Vladimir V. Serebrenny, Arkady S. Yushinko</i>
9. Procedure for Locating Trees and Estimating Diameters Using LiDAR Data	<i>Ilya A. Grishin A., Valery I. Terekhov</i>
10. Research of Different Neural Network Architectures for Audio and Video Denoising	<i>Anton I. Kanev, Maksim M. Nazarov, Vladislav O. Terentyev, Daniel Y. Uskov</i>

Coffee Break 12:45-13:30

Continuing the participants' presentations (13:45-15:45)

Section B2: Components, Circuits, Devices and Systems. Computing, Signal Processing and Analysis. Room (D-209)

1. Software Development Methodologies: Analysis and Classification	<i>Dmitrii A. Gurianov, Konstantin S. Myshenkov, Valery I. Terekhov</i>
2. Relational Database Performance Comparison	<i>Dmitrii S. Gudilin, Aleksey E. Zvonarev, Boris S. Goryachkin, Dmitry A. Lychagin</i>

3.	Development of an Algorithm for Optimal Encoding of WAV Files Using Genetic Algorithms	<i>Mikhail V. Belodedov, Roman V. Fonkants, Rustam R. Safin</i>
4.	The Robot-Guide for Indoor Navigation	<i>Volgina A.D., Kirillov D.S., Kravtsov A.N., Dyakonova S.S., Kanev A.I.</i>
5.	Automation of the Behavioral Safety Audit of a Transport Operator Based on the Recognition of His Emotional State in Real Time	<i>Daniil A. Loktev, Liliya A. Illarionova, Alexey A. Loktev</i>
6.	The Choice of the Cost Parameter in the PELT Method for Determining the Change Points for Time Series Parameters in the Hidden Channel Model	<i>Alexander N. Smirnov</i>
7.	Equivalence of Logical Operations and Other Operations in Python Programming Language	<i>Vladislav S. Popov</i>
8.	Transcription of Arabic and Turkish Music Using Convolutional Neural Networks	<i>Ibrahim S. Wahbi, Hussein T. Bahbouh, Khalil M. Yahia</i>
9.	Optical Properties of MoS₂ Films Fabricated on Ceramic Substrates by Pulse Laser Deposition (PLD) Method	<i>A.A. Pospelov, A.E. Shupenev, K.V. Zayats, Bychkov S.B., Dunaev A.Yu., Grigoriants A.G.</i>
10.	Estimating Chest Geometry Assumptions in Modeling Precordial Measurements	<i>Alexandra Kozlova, Svetlana Mezentseva, Alexey Tihomirov</i>

Starting the participants' presentations (10:30-12:45)

{Each Participant has 10 minutes for introducing presentation and questions by attendees}

Section C1: General Topics for Engineers. Fields, Waves and Electromagnetics. Transportation. Room (D-2/10)

1.	Neuro-fuzzy approach to identification of electromagnetic fields of electrostatic discharge	<i>Aina B. Bakasova, Asan uulu Askat</i>
2.	Reducing Delay for Delay-Sensitive Applications in Smart Home Networks Using Openflow Protocol	<i>Mothanna Alkubeyly, Sergey A. Sakulin, Bushra Hasan</i>
3.	Design an Adaptive Trajectory to Support UAV Assisted VANET Networks	<i>Mothanna Alkubeyly, Sergey A. Sakulin, Bassam Hasan</i>
4.	A New Approach for Evaluating the Topological Accuracy of Circuit Boards Made by 3D Printing	<i>Olga N. Smirnova, Juilia S. Bobrova, Konstantin M. Moiseev</i>
5.	Problems and Measures Ensuring Further Utilization of the Russian Segment of the International Space	<i>Nikita O. Romanov, Darya A. Skvortsova</i>

Station	
6.	Application of Island Thin Films for Microelectronics Devices
<i>Sergey V. Kiryanov, Nikita O. Yurkin, Aleksey D. Kouptsov, Svetlana V. Sidorova</i>	
7.	Research of the Characteristics of the Parabolic Reflector During Its Natural Oscillations
<i>Pyatibratov Konstantin Alekseevich, Seregin Grigory Mikhailovich</i>	
8.	Comparative Analysis of Deuterium Interaction with a Target Made of Steel and Doped Tungsten
<i>Nikita Batrak, Nikita Kopaleishvili</i>	
9.	Analysis of Solar Refrigeration Systems and Development of a Combined Absorption Cooling Installation
<i>Izzatilla R. Juraev, Sergey S. Dorzhiev</i>	

Coffee Break 12:45-13:30

Continuing the participants' presentations (13:45-15:45)

Section C2: General Topics for Engineers. Fields, Waves and Electromagnetics. Transportation. Room (D-2/10)

1.	Social Dilemma in a Heterogeneous Traffic Flow Consisting of Personal and Public Transport
<i>Bykov N.V., Kostrov M.A.</i>	
2.	Characteristics of Polymetallic Structures Obtained by Direct Metal Deposition of Stainless Steel, Chromium Bronze and Lead for Antifriction Parts
<i>Ivan A. Lomakin, Andrey A. Kholopov, Dmitrii O. Bogatyrev, Igor N. Shiganov</i>	
3.	First-order Logical Equations with Parameter and their Exhaustive Search Solutions
<i>Vladislav S. Popov</i>	
4.	Detecting and Mitigating Wormhole Attack Effect in MANETs Based on Hop Count Technique
<i>Marah Knaj, Mohammad Anbar, Mohammad Nassr, Fadi Ghosna, Daria K. Voronkova</i>	
5.	Features of Approaches to Information Educational Components Design for Energy Universities
<i>Nikolay N. Tsybov, Zhalalidin T. Galbaev, Maxim V. Burmeyster</i>	
6.	Nanostructured coatings of TiCxNy as a sublayer of electrodes for devices with a proton exchange membrane
<i>Matvey V. Sinyakov, Dmitry D. Spasov, Ruslan M. Mensharapov, Adelina A. Zasykina, Yuri S. Pak, Nataliya A. Ivanova</i>	
7.	General Analytical Solution to the Problem of Propagation of Thermal Oscillations in Semi-bounded Solids of Various Shapes
<i>Michail Purdin, Renata Magomedova</i>	
8.	Description of nonlinear deformation diagrams of electrotechnical materials
<i>T.B. Duishenaliev, T.N. Dogadina, D.S. Dikarev</i>	
9.	Comparison of the dynamic and static measurements of hydrophobicity
<i>Karina D. Poluektova, Ivan A. Gulenko, Sergei A. Vasilkov</i>	

10. **Numerical Simulation of Non-coalescence Regime for Two Conducting Droplets at High Voltage Electrostatic Separation of Water-in-oil Emulsion**

*V.A. Chirkov, D.D. Saifullin, G.O. Utiugov,
A.V. Samusenko*

The End of Conference, Discussions, Certificates (15:45-16:45)