



**when**

23<sup>rd</sup>-25<sup>th</sup>  
September, 2024



**where**

Palanga  
Lithuania

# electronics

28<sup>TH</sup> INTERNATIONAL CONFERENCE

2024



## programme



faculty of electrical  
and electronics  
engineering

technical sponsor



# Conference-at-a-Glance

Monday, 23<sup>rd</sup> September, 2024

room A 

Day 1 

Room A		Room B	
10 <sup>00</sup> -10 <sup>15</sup>	<b>1A</b>	<b>Opening Ceremony and Welcome</b>	
10 <sup>15</sup> -11 <sup>00</sup>	<b>2A</b>	<b>Invited Speaker</b> Dr. Mindaugas Varanauskas	
11 <sup>00</sup> -11 <sup>45</sup> COFFEE BREAK			
11 <sup>45</sup> -12 <sup>30</sup>	<b>3A</b>	<b>Invited Speaker</b> Dr. Andrius Vilkauskas	
12 <sup>30</sup> -13 <sup>30</sup> CONFERENCE LUNCH			
13 <sup>30</sup> -15 <sup>00</sup>	<b>4A</b>	Electrical Engineering	<b>1B</b> Poster Session of KTU Excellence Center of Technological and Physical Sciences (TiFEC)
15 <sup>00</sup> -15 <sup>30</sup> COFFEE BREAK			
15 <sup>30</sup> -17 <sup>00</sup>	<b>5A</b>	Electronics	<b>2B</b> Poster Session of KTU Excellence Center of Technological and Physical Sciences (TiFEC)
18 <sup>00</sup> -22 <sup>00</sup> WELCOME PARTY			

Tuesday, 24<sup>th</sup> September, 2024

room A



Day 2

Room A			Room B		
9 <sup>00</sup> -10 <sup>30</sup>	<b>6A</b>	System Engineering, Computer Technology	<b>3B</b>	Poster Session of KTU Excellence Center of Technological and Physical Sciences (TiFEC)	
10 <sup>30</sup> -11 <sup>00</sup> COFFEE BREAK					
11 <sup>00</sup> -12 <sup>30</sup>	<b>7A</b>	Signal Technologies	<b>4B</b>	Poster Session of KTU Excellence Center of Technological and Physical Sciences (TiFEC)	
12 <sup>30</sup> -13 <sup>30</sup> CONFERENCE LUNCH					
13 <sup>30</sup> -15 <sup>00</sup>	<b>8A</b>	Telecommunications Engineering	<b>5B</b>	Poster Session of KTU Excellence Center of Technological and Physical Sciences (TiFEC)	
15 <sup>00</sup> -15 <sup>30</sup> COFFEE BREAK					
15 <sup>30</sup> -17 <sup>00</sup>	<b>9A</b>	Automation, Robotics	<b>6B</b>	Poster Session of KTU Excellence Center of Technological and Physical Sciences (TiFEC)	
18 <sup>00</sup> -22 <sup>00</sup> CONFERENCE DINNER					

Wednesday, 25<sup>th</sup> September, 2024

room A



Day 3

Room A		Room B	
10 <sup>00</sup> -12 <sup>00</sup>	<b>10A</b>	Renewable Energy	<b>7B</b> Poster Session of KTU Excellence Center of Technological and Physical Sciences (TIFEC)
12 <sup>00</sup> -12 <sup>30</sup> ELECTRONICS 2024 Closing Session			
12 <sup>30</sup> -13 <sup>30</sup>		CONFERENCE LUNCH	



Conference Venue

Hotel “**Grand Baltic Dunes**” is located in the centre of the resort.

Address: Hotel “Grand Baltic Dunes”

26 Birute avenue, LT-00135, Palanga, Lithuania

Mob. phone +370 615 22255

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<http://www.grandbalticdunes.com/en/>



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# Programme Events

## ↓ Invited Speaker



### Dr. Mindaugas Varanauskas

Baltic Viper, JSC  
Kaunas, Lithuania

#### Drones in Modern Warfare

Monday, 23<sup>th</sup> September, 10:15–11:00, Room A

**Mindaugas Varanauskas** received his PhD degree in technology from Kaunas University of Technology. He has more than 20 years of experience in the mobile telecommunications area. Since 1997, he has worked at Omnitel/Telia in various management positions, including CTO at Omnitel and Head of Networks at Telia Lithuania. He has also held several managerial positions in Telia's global organization. Since 2022, he has been involved as a volunteer in the "Maži bet Stiprūs" organization, helping Ukrainian army troops. He is currently working at UAB "Dangolakis" under the brand name Baltic Viper, producing different types of FPV drones for the Ukrainian army.

Drones in Ukraine have completely changed the way we use them on battlefields. This area is developing rapidly, similar to planes or tanks during the First World War. First-person view (FPV) drones have evolved significantly during the last years of conflict in Ukraine. The presentation will describe the major impact of drones on modern warfare, anti-drone guns and jamming systems, and new drone developments.

 **Invited Speaker****Dr. Andrius Vilkauskas**

Kaunas University of Technology  
Kaunas, Lithuania

**From Defence Capabilities requirements to Research and Development and Innovations in Defence Technologies**

Monday, 23<sup>rd</sup> September, 11:45–12:30, Room A

Dr **Andrius Vilkauskas** holds a PhD in Technological Sciences, Mechanical engineering. Before serving as a dean Andrius took various positions in Defence technologies industries at Giraite Armament Factory later he was sharing his experience in NATO Industrial Advisory Group representing Lithuanian delegation as a Head of Delegation and Deputy Head. In parallel with academic activities Andrius was working in Power and District heating manufacturing industry (CHP, Combined Heat and Power Plant) taking a part in Waste to Energy plant development from the green field till commercial operations and since 2016 till 2024 taking a position as a Chairman of the Board at Kaunas Cogeneration Plant. Never less he also represents research and studies competences at Engineering and Technology Industries Association of Lithuania LINPRA taking a part as a board member and since 2020 he holds Vice President position at LINPRA. Since 2024 Andrius Vilkauskas holds senior researcher position at Institute of Mechatronics at Kaunas University of Technology and also, he manages Aviation Specialist Training Center at Faculty of Mechanical Engineering and Design at Kaunas University of Technology.

As researchers with general and civilian applications experience very often, we look in defense technologies, products and solutions from the research domain and from the perspective of exploitation of the new possible inventions, a little bit less from innovations capabilities and just few form capabilities requirements and demands. In this presentation we will discuss translation challenges from military language of defence capabilities to the researcher language of R&D and switching to entrepreneurial language of Defence Innovations.

# Information for Participants



## Time Zone

The time zone for all Sessions is set to EEST (Eastern European Summer Time) i.e. UTC +03:00.



## Presentation Time

**Invited papers:**

45 minutes, including discussion.

**Contributed oral papers:**

18 minutes, including discussion.



## Registration (for oral presenters)

**Starts on Monday  
23rd August, 2024  
9:00.**

**Conference Desk Working Hours:**

**Monday  
23rd September, 2024  
9:00–12:30.  
16:30–17:15.**

**Tuesday  
24th September, 2024  
9:00–10:00.  
12:00–12:30.**

**Wednesday  
25th September, 2024  
9:30–10:00.**



## Entrance (for oral presenters)

**To the Conference Events:**

Each participant will receive a name tag and tickets at the Conference Desk for entry to the Conference events.

Presenters will be registered by a Session Chair before each session.



## Entrance (for video presenters)

### To the Conference Video Room A:

Presenters are invited to check their internet and Zoom connection prior to the Conference via: <https://zoom.us/test>

To allow for a smooth implementation of the Conference, a microphone of each presenter's will be set to mute and video will be turned off by default. But presenter must turn on its video during the presentation.

A link for entry to the Conference Video Room is given in the Conference Programme.

Each Session will be opened 10 minutes prior to the starting time to clarify technical issues.

Each Session will be moderated by a particular Session Chair.

Presenters will be registered by the Session Chair before each session once they join to the particular Conference Video Session.



## Language

The official language of the ELECTRONICS 2024 Conference is English.



## Social Events

### Welcome Party

Monday  
23rd September, 2024  
18:00–22:00.

### Conference Dinner

Tuesday  
24th September, 2024  
18:00–22:00.



## Equipment

1. PC  
Microsoft Windows and MS Office.
2. Projector  
You may bring your presentation on a USB stick and use our PC.



## Live Broadcast

Non-presenters are welcome to join the conference and listen oral & live video presentations of sessions in Room A. A Zoom link for entry to the Conference Video Room is given in the Conference Programme.



## Poster Sessions

The poster sessions are free of charge and open to the public community in Room B.



## Messages

Please check the Conference bulletin board from time to time for possible changes to the program and for other announcements.

# Conference Programme



Monday, 23<sup>rd</sup> September, 2024

room A



## ROOM A

10:00 **SESSION 1A**  
– Chairs: Algimantas Valinevičius, Darius Andriukaitis

10:15 **OPENING CEREMONY AND WELCOME**

10:15 **SESSION 2A**  
– Chairs: Algimantas Valinevičius, Darius Andriukaitis

11:00 **Invited Speaker** Dr. Mindaugas Varanauskas (Lithuania)  
**Drones in Modern Warfare**

11:00–11:45 COFFEE BREAK

11:45 **SESSION 3A**  
– Chairs: Algimantas Valinevičius, Darius Andriukaitis

12:30 **Invited speaker** Dr. Andrius Vilkauskas (Lithuania)

**From Defence Capabilities requirements to Research and Development and Innovations in Defence Technologies**

12:30–13:30 CONFERENCE LUNCH

13:30 **SESSION 4A | ELECTRICAL ENGINEERING**  
– Chair: Jožef Ritonja (Slovenia)

15:00 **4A.1. Determination of Optimal Locations and Parameters of Passive Harmonic Filters in Unbalanced Systems Using the Multiobjective Genetic Algorithm**

Milos J. Milovanovic, Svetlana S. Raicevic, Dardan O. Klimenta, Nebojsa B. Raicevic, Bojan D. Perovic (Serbia)  
Presenter: Nebojša B. Raičević (Serbia)

**4A.2. The Frequency Regulation Control Method of Large-Scale Distributed Energy Storage Systems in the Smart Grid**

Yong Sun, Yuchen Hao, Xiao Li, Bo Ding, Hao Li, Jianwei Guan (China)  
Presenter: Yong Sun (China)

**4A.3. Airborne Wind Energy in Türkiye with Focus on Wind Resource Life Cycle Assessment and Techno-Economic Analysis**

Ahmet Emre Onay, Emrah Dokur, Mehmet Kurban (Türkiye)  
Presenter: Emrah Dokur (Türkiye)

13:30 **4A.4. An Enhanced FFT Based Algorithm for Improved Phasor Estimation**  
–  
15:00 Gul said, Anwar Ali, Musaed Alhussein, Khursheed Aurangzeb, M. Naveed Aman, Anas Khan (Kingdom of Saudi Arabia, United Kingdom, USA, India)  
*Presenter: Khursheed Aurangzeb (Kingdom of Saudi Arabia)*

**4A.5. Low-Frequency Electromagnetic Measurements of Spread Spectrum Modulated Brushless Direct Current Motors for Educational Purposes**  
Kornél Illyés, István Balajti, Géza Husi (Hungary)  
*Presenter: István Balajti (Hungary)*

15:00–15:30 COFFEE BREAK

15:30 **SESSION 5A | ELECTRONICS**  
–  
Chair: Mario Vražić (Croatia)

17:00 **5A.1. Robustness Stability Analysis of Higher-Order DPCM Prediction Filters**  
Nikola B. Dankovic, Zoran H. Peric, Dragan S. Antic, Aleksandar V. Jovic, Sasa S. Nikolic, Petar B. Djekic (Serbia)  
*Presenter: Nikola B. Dankovic (Serbia)*

**5A.2. Mutator Circuit for Memcapacitor Emulator Using Operational Transconductance Amplifiers**  
Mustafa Konal, Fırat Kaçar (Türkiye)  
*Presenter: Mustafa Konal (Türkiye)*

**5A.3. Modeling Solar Irradiance Data for Energy Harvesting IoT Sensors**  
Jan Choutka, Jiri Konecny, Miroslav Mikus, Kamil Bancik, Michal Prauzek, Jaromir Konecny (Czech Republic)  
*Presenter: Jan Choutka (Czech Republic)*

**5A.4. A Raspberry Pi Based Hardware Implementation of Various Neuron Models**  
Vedat Burak Yucedag, Ilker Dalkiran (Türkiye)  
*Presenter: Vedat Burak Yucedag (Türkiye)*

**5A.5. A New Meta-Heuristic Approach for Diagnosing Parkinson's Disease Over Audio Signals**  
Ozer Oguz, Hasan Badem (Türkiye)  
*Presenter: Hasan Badem (Türkiye)*

18:00–22:00 WELCOME PARTY

**ROOM B****13:30** **SESSION 1B****Chairs:** Algimantas Valinevičius, Darius Andriukaitis

–

**15:00****Poster Session of KTU Excellence Center of Technological and Physical Sciences (TiFEC)****15:00–15:30 COFFEE BREAK****15:30** **SESSION 2B****Chairs:** Algimantas Valinevicius, Darius Andriukaitis

–

**17:00****Poster Session of KTU Excellence Center of Technological and Physical Sciences (TiFEC)**



Tuesday, 24<sup>th</sup> September, 2024

room A



ROOM A

9:00

**SESSION 6A | SYSTEM ENGINEERING, COMPUTER TECHNOLOGY**

–

10:30

Chair: Renát Haluška (Slovakia)

**6A.1. COLFSR – A Hybrid Random Number Generator Based on Chaos Optimization and Linear Feedback Shift Register**

Eyüp Eröz, Erkan Tanyıldızı, Fatih Özkaynak (Türkiye)

Presenter: *Fatih Ozkaynak (Türkiye)*

**6A.2. NFT Cryptopunks Generation Using Machine Learning Algorithm**

Pooja Singhal, Deepak Aneja, Musaed Alhusein, Ritu Gupta, Khursheed Aurangzeb, Nitish Pathak (Saudi Arabia, India)

Presenter: *Khursheed Aurangzeb (Saudi Arabia)*

**6A.3. A Classifier for Automatic Categorisation of Chronic Venous Insufficiency Images**

Talha Karadeniz, Gül Tokdemir, H. Hakan Maraş (Türkiye)

Presenter: *Talha Karadeniz (Türkiye)*

**6A.4. Assistive Robots: A User-Centric Evaluation Framework for Human-Robot Interaction Systems**

Arthur M. Alonso, Husam A. Neamah (Hungary)

Presenter: *Arthur Alonso (Hungary)*

**6A.5. Detection of OSA Through the Application of Deep Learning on Polysomnography Data**

Hasan Ulutas, Recep Sinan Arslan, Muhammet Emin Şahin, Halil Ibrahim Cosar, Çağrı Arisoy, Ahmet Sertol Koksall, Mehmet Bakir, Bülent Çiftçi (Türkiye)

Presenter: *Halil Ibrahim Cosar (Türkiye)*

10:30–11:00 COFFEE BREAK

11:00

**SESSION 7A | SIGNAL TECHNOLOGIES**

–

12:30

Chair: Nebojša B. Raičević (Serbia)

**7A.1. Concept of Speaker Age Estimation Using Neural Networks to Reduce Child Grooming**

Renát Haluška, Monika Badovská, Matúš Pleva (Slovakia)

Presenter: *Renát Haluška (Slovakia)*



11:00 – 12:30 **7A.2. Evaluation and Implementation of EMI/EMC Compliance for A Proposed Power Electronics-based Converter Topology for Electric Vehicles**

Hakan Tekin, Seyit Vatansever, Davut Ertekin (Türkiye)  
*Presenter: Hakan Tekin (Türkiye)*

**7A.3. Logical Resonance in Izhikevich Neuron**

Vedat Burak Yuucedag, Ilker Dalkiran, Arash Ahmadi (Türkiye)  
*Presenter: Vedat Burak Yuucedag (Türkiye)*

**7A.4. Pistachio Classification Based on Acoustic Systems and Machine Learning**

Yavuz Türkay, Zekiye Şeyma Tamay (Türkiye)  
*Presenter: Yavuz Türkay (Türkiye)*

**7A.5. Voltage Differencing Buffered Amplifier Realization Using 32nm FinFET Technology and Universal Filter Applications**

Sevda Altan Yağci, Mustafa Konal, Firat Kaçar (Türkiye)  
*Presenter: Mustafa Konal (Türkiye)*

12:30–13:30 CONFERENCE LUNCH

13:30 – 15:00 **SESSION 8A | TELECOMMUNICATIONS ENGINEERING**

**Chair:** István Balajti (Hungary)

**8A.1. Paramounts of Intent-Based Networking: Overview**

Martins Mihaeljans, Andris Skrastins, Jurgis Porins (Latvia)  
*Presenter: Martins Mihaeljans (Latvia)*

**8A.2. Comparative Performance Analysis of Two Novel Design MIMO Antennas for 5G and Wi-Fi 6 Applications**

Noora Salim, Amer T. Abed, Hayder Dibs (Iraq)  
*Presenter: Noora Salim (Iraq)*

**8A.3. Enhancing Maritime Communication Security with Blockchain Technology**

Georgi Dimitrov, Ivaylo Mitishev (Bulgaria)  
*Presenter: Georgi Lyubomirov Dimitrov (Bulgaria)*

**8A.4. Educational Issues of LiDAR sensors functioning and impact in ADAS technology**

Zsombor Lajos Osváth, András Kovács, István Balajti (Hungary)  
*Presenter: Zsombor Lajos Osváth (Hungary)*

13:30 **8A.5. A Deep Learning Application for Dolph-Tschebyscheff Antenna  
– Array Optimization**

15:00 Mustafa Öner Dikdere, Yasin Genc, Cagatay Korkuc, Ahmet Akkoc,  
Erkan Afacan, Erdem Yazgan (Türkiye)  
*Presenter: Mustafa Öner Dikdere (Türkiye)*

**8A.6. Improving the Operation of a Distribution Network by Optimal  
Siting and Sizing of Photovoltaic-Battery Energy Storage Systems**

Nikola N. Krstic, Dragan S. Tasic, Dardan O. Klimenta,  
Milos J. Milovanovic (Serbia)  
*Presenter: Dardan O. Klimenta (Serbia)*

15:00–15:30 COFFEE BREAK

15:30 **SESSION 9A | AUTOMATION, ROBOTICS**

– *Chair: Wlodek J. Kulesza (Sweden)*

17:00 **9A.1. Risk Assessment of the Bird Collisions with a Wind Turbine Based  
on Flight Parameters**

Rafał Tkaczyk, Grzegorz Madejski, Dawid Gradolewski, Damian Dziak,  
Wlodek J. Kulesza (Poland)  
*Presenter: Grzegorz Madejski (Poland)*

**9A.2. Relative Position Detection of Clustered Tomatoes Based on  
BlendMask-BiFPN**

Caiping Guo, Can Tang, Yehong Liu, Xin Wang, Shumao Wang (China)  
*Presenter: Caiping Guo (China)*

**9A.3. Design and Analysis of a 3-DOF Cartesian Robot**

Taleb Mayar Abdullah, Korsoveczki Gyula, Géza Husi (Hungary)  
*Presenter: Mayar Abdullah Taleb (Hungary)*

**9A.4. A Mobile Deep Learning Classification Model for Diabetic  
Retinopathy**

Daniel Rimaru, Antonio Nehme, Musaed Alhussein, Khaled Mahbub,  
Khusheed Aurangzeb, Anas Khan (Kingdom of Saudi Arabia,  
United Kingdom, India)  
*Presenter: Khursheed Aurangzeb (Kingdom of Saudi Arabia)*

**9A.5. Kinematic Representation of Industrial Delta-Parallel Robot  
Mechanism**

Lili Sára Lakatos, Gyula Korsoveczki, Géza Husi (Hungary)  
*Presenter: Gyula Korsoveczki (Hungary)*

18:00–22:00 CONFERENCE DINNER

**ROOM B****09:00** **SESSION 3B**

Chairs: Algimantas Valinevičius, Darius Andriukaitis

–  
**10:30****Poster Session of KTU Excellence Center of Technological and Physical Sciences (TiFEC)****10:30–11:00 COFFEE BREAK****11:00** **SESSION 4B**

Chairs: Algimantas Valinevičius, Darius Andriukaitis

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**12:30****Poster Session of KTU Excellence Center of Technological and Physical Sciences (TiFEC)****12:30–13:30 CONFERENCE LUNCH****13:30** **SESSION 5B**

Chairs: Algimantas Valinevičius, Darius Andriukaitis

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**15:00****Poster Session of KTU Excellence Center of Technological and Physical Sciences (TiFEC)****15:00–15:30 COFFEE BREAK****15:30** **SESSION 6B**

Chairs: Algimantas Valinevičius, Darius Andriukaitis

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**17:00****Poster Session of KTU Excellence Center of Technological and Physical Sciences (TiFEC)**



Wednesday, 25<sup>th</sup> September, 2024

room A



ROOM A

10:00 **SESSION 10A | RENEWABLE ENERGY**

– **Chair:** Dardan O. Klimenta (Serbia)

12:00

**10A.1. Optimal Design and Techno-Economic Analysis of a Hybrid System to Supply a Remote Fishpond with Electricity and Heat**

Milan V. Tomovic, Dardan O. Klimenta, Milos J. Milovanovic,  
Bojan D. Perovic, Nikolay L. Hinov (Serbia)

*Presenter: Dardan O. Klimenta (Serbia)*

**10A.2. A Vine-Copula Method for Outlier Identification in Photovoltaic Arrays**

Haitao Li, Weiqiong Song, Le Zhao, Shuai Guo, Wei Song, Li Huang (China)

*Presenter: Li Huang (China)*

**10A.3. Current Control of Battery Pack Modules in Parallel Connection According to SoC**

Mario Vrazic, Antonio Persic, Peter Virtic, Tomislav Ivanis (Croatia)

*Presenter: Mario Vražić (Croatia)*

**10A.4. Risk Assessment Method for Distributed Power Distribution Networks Considering Network Dynamic Reconstruction**

Tangyong Teng, Yu Huang, Juan Wang, Zhukun Li, YongHua Chen (China)

*Presenter: TangYong Teng (China)*

**10A.5. A Study for Hybrid Renewable Energy Production Scenarios Using Long Short-Term Memory Method. A Case Study of Göksun**

Habibe Karayığit, Aykan Bölükbaşı, Kadir Abacı, Ali Akdağlı (Türkiye)

*Presenter: Aykan Bolukbasi (Türkiye)*

**10A.6. A Review on Convolutional and Recurrent Artificial Neural Networks for the Smart Grid Applications**

Živilė Vilkelėytė, Jonas Vanagas, Saad El Fallah, Jaouad Kharbach,  
Mohammed Ouazzani Jamil, Piotr Bojarczak, Jerzy Wojciechowski  
(Lithuania, Morocco, Poland)

*Presenter: Zivile Vilkelyte (Lithuania)*

12:00–12:30 ELECTRONICS 2024 Closing Session

12:30–13:30 CONFERENCE LUNCH

**ROOM B**10:00  
–**SESSION 7B**

Chairs: Algimantas Valinevičius, Darius Andriukaitis

12:00

**Poster Session of KTU Excellence Center of Technological and Physical Sciences (TiFEC)****12:00–12:30 ELECTRONICS 2024 Closing Session****12:30–13:30 CONFERENCE LUNCH**

# Contacts

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