


# ELECTRONICS 2024 | Conference-at-a-Glance

🕒 Monday – 23<sup>rd</sup> September, 2024 (Day 1)

	 <a href="#">Link to zoom room</a>	Room A
10:00–10:15	<b>1A</b>	Opening Ceremony and Welcome
10:15–11:00	<b>2A</b>	Invited Speaker Dr. Mindaugas Varanauskas
11:00–11:45		COFFEE BREAK
11:45–12:30	<b>3A</b>	Invited Speaker Prof., Dr., Habil. Gintaras Valušis
12:30–13:30		CONFERENCE LUNCH
13:30–15:00	<b>4A</b>	Electrical Engineering
15:00–15:30		COFFEE BREAK
15:30–17:00	<b>5A</b>	Electronics
18:00–22:00		WELCOME PARTY

# ELECTRONICS 2024 | Conference-at-a-Glance

🕒 Tuesday – 24<sup>th</sup> September, 2024 (Day 2)

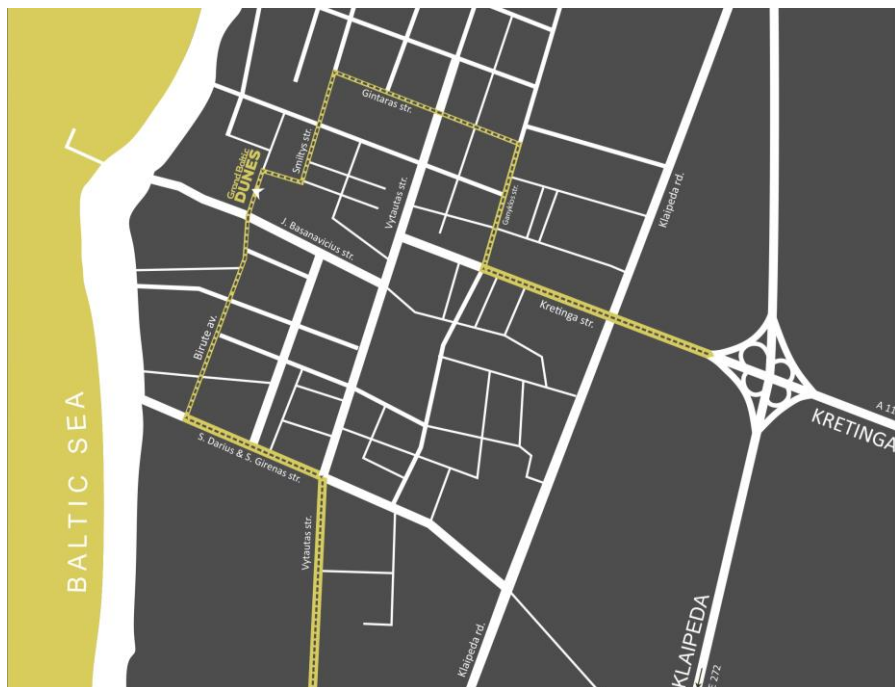
	<a href="#">link to zoom room</a>	Room A
9:45–10:30	<b>6A</b>	System Engineering, Computer Technology
10:30–11:00		COFFEE BREAK
11:00–12:30	<b>7A</b>	Signal Technologies
12:30–13:30		CONFERENCE LUNCH
13:30–15:00	<b>8A</b>	Telecommunications Engineering
15:00–15:30		COFFEE BREAK
15:30–17:00	<b>9A</b>	Automation, Robotics
18:00–22:00		CONFERENCE DINNER

# ELECTRONICS 2024 | Conference-at-a-Glance

📅 Wednesday – 25<sup>th</sup> September, 2024 (Day 3)

	<small>link to</small> <b>zoom</b> <small>room</small>	Room A
10:00–12:00	<b>10A</b>	Renewable Energy
12:00–12:30	<b>ELECTRONICS 2024 Closing Session</b>	
12:30–13:30	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  
[hotel@grandbalticdunes.com](mailto:hotel@grandbalticdunes.com)  
<http://www.grandbalticdunes.com/en/>

## Programme Events

### ↳ Invited Speaker



#### **Dr. Mindaugas Varanauskas**

**Baltic Viper, JSC / Kaunas, Lithuania**

*Drones in Modern Warfare*

**Monday, 23<sup>rd</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



## **Prof., Dr., Habil. Gintaras Valušis**

**Center for Physical Science and Technology (FTMC) / Vilnius University / Vilnius, Lithuania**

*Terahertz Frequencies and Semiconductor Chips: Integrated Solutions and Applications*

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

**Gintaras Valušis** graduated from the Vilnius University, Physics Faculty, in 1985. He acquired his PhD and habilitation at the Vilnius University in 1992 and 2007, respectively. 1995 – 1996 he obtained post-doc in ultrafast spectroscopy of semiconductor nanostructures at Institute of Applied Photo Physics, Dresden University of Technology, Germany. In 2000 and 2003 he was Alexander von Humboldt fellow in topic of terahertz physics at Physics Institute, J. W. Goethe University, (Frankfurt/M, Germany).

Currently, Gintaras withholds positions of director at the Center for Physical Science and Technology (FTMC), Vilnius, Lithuania, head of the Optoelectronics Department at FTMC, and professor in Institute of Photonics and Nanotechnology of Physics Faculty at the Vilnius University. Gintaras is academician of the Lithuanian Academy of Sciences (since 2017).

His scientific interests cover terahertz physics and spectroscopy, optoelectronics and physics of semiconductor devices.

Terahertz (THz) frequencies remain as one of the most dynamic topics in physics research. It is defined by the particular place of THz range in the electromagnetic spectrum – as it is sandwiched between microwaves and the infrared one, a development of devices and components requires to merge or combine together different concepts or approaches. On the other hand, promising applications in imaging, material diagnostics, communication systems, etc. stimulates an intensive search for new solutions in design and fabrication of compact emitters and detectors as well as possible solutions in making systems compact and convenient in use.

In the given talk, THz imaging solutions using semiconductor chips (nanometric field effect transistors and bow-tie diodes) will be considered, integration of optical components will be discussed. A particular focus will be given on design principles

and assembling of silicon diffractive optics components allowing their integration directly on a chip. Applications in imaging and communications will be revealed.



Monday, 23<sup>rd</sup> September, 2024 | Room A

**10:00–10:15**      **Session 1A**  
**Chairs: Algimantas Valinevicius, Darius Andriukaitis**  
**OPENING CEREMONY AND WELCOME**

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**10:15–11:00**      **Session 2A**  
**Chairs: Algimantas Valinevicius, Darius Andriukaitis**  
**Invited speaker *Dr. Mindaugas Varanauskas (Lithuania)***  
**Drones in Modern Warfare**

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**11:00–11:45**      **COFFEE BREAK**

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**11:45–12:30**      **Session 3A**  
**Invited speaker *Prof., Dr., Habil. Gintaras Valušis (Lithuania)***  
**Terahertz Frequencies and Semiconductor Chips: Integrated Solutions and Applications**

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**12:30–13:30**      **CONFERENCE LUNCH**

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**13:30–15:00**      **Session 4A | Electrical Engineering**  
**Chair: Jožef Ritonja (Slovenia)**  
**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)

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	<p><b>4A.2. The Frequency Regulation Control Method of Large-Scale Distributed Energy Storage Systems in the Smart Grid</b>  Yong Sun, Yuchen Hao, Xiao Li, Bo Ding, Hao Li, Jianwei Guan (China)  <i>Presenter: Yong Sun (China)</i></p> <p><b>4A.3. Airborne Wind Energy in Türkiye with Focus on Wind Resource Life Cycle Assessment and Techno-Economic Analysis</b>  Ahmet Emre Onay, Emrah Dokur, Mehmet Kurban (Türkiye)  <i>Presenter: Emrah Dokur (Türkiye)</i></p> <p><b>4A.4. An Enhanced FFT Based Algorithm for Improved Phasor Estimation</b>  <b>Gul said, Anwar Ali, Musaed Alhusein, Khursheed Aurangzeb, M. Naveed Aman, Anas Khan (Kingdom of Saudi Arabia, United Kingdom, USA, India)</b>  <i>Presenter: Khursheed Aurangzeb (Kingdom of Saudi Arabia)</i></p> <p><b>4A.5. Low-Frequency Electromagnetic Measurements of Spread Spectrum Modulated Brushless Direct Current Motors for Educational Purposes</b>  Kornél Illyés, István Balajti, Géza Husi (Hungary)  <i>Presenter: István Balajti (Hungary)</i></p>
<p><b>15:00–15:30</b></p>	<p><b>COFFEE BREAK</b></p>
	<p><b>Session 5A   Electronics</b>  <b>Chair: Mario Vražić (Croatia)</b></p> <p><b>5A.1. Robustness Stability Analysis of Higher-Order DPCM Prediction Filters</b>  Nikola B. Dankovic, Zoran H. Peric, Dragan S. Antic, Aleksandar V. Jovic, Sasa S. Nikolic, Petar B. Djekic (Serbia)  <i>Presenter: Nikola B. Dankovic (Serbia)</i></p>
<p><b>15:30–17:00</b></p>	<p><b>5A.2. Mutator Circuit for Memcapacitor Emulator Using Operational Transconductance Amplifiers</b>  Mustafa Konal, Fırat Kaçar (Türkiye)  <i>Presenter: Mustafa Konal (Türkiye)</i></p>

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### **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 Yuicedag, Ilker Dalkiran (Türkiye)

*Presenter: Vedat Burak Yuicedag (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)*

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**18:00–22:00**

**WELCOME PARTY**

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**Session 6A | System Engineering, Computer Technology**

**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)*

**9:00–10:30**

**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**

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## **Session 7A | Signal Technologies**

**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)*

### **7A.2. Evaluation and Implementation of EMI/EMC Compliance for A Proposed Power Electronics-based Converter Topology for Electric Vehicles**

Hakan Tekin, Seyit Vatansver, Davut Ertekin (Türkiye)

*Presenter: Hakan Tekin (Türkiye)*

**11:00–12:30**

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

Vedat Burak Yuicedag, Ilker Dalkiran, Arash Ahmadi (Türkiye)

*Presenter: Vedat Burak Yuicedag (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)*

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**12:30–13:30**

**CONFERENCE LUNCH**

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## **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)*

**13:30–15:00**

### **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)*

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**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)*

**8A.5. A Deep Learning Application for Dolph-Tschebyscheff Antenna Array Optimization**

Mustafa Öner Dikdere, Yasin Genc, Cagatay Korkuc, Ahmet Akkoc, Erkan Afacan, Erdem Yazgan (Türkiye)

*Presenter: Mustafa Oner Dikdere (Türkiye)*

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**15:00–15:30**    **COFFEE BREAK**

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**Session 9A | Automation, Robotics**

**Chair: Wlodek J. Kulesza** (Sweden)

**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)*

**15:30–17:00**

**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)*

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**18:00–22:00**    **CONFERENCE DINNER**

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**Session 10A | Renewable Energy**

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

**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)*

**10:00–12:00**

**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 Gökşun**

Habibe Karayığit, Aykan Bölükbaşı, Kadir Abacı, Ali Akdağlı (Türkiye)  
*Presenter: Aykan Bolukbasi (Türkiye)*

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<b>10:00–12:00</b>	<p><b>10A.6. A Review on Convolutional and Recurrent Artificial Neural Networks for the Smart Grid Applications</b> Živilė Vilkelė, Jonas Vanagas, Saad El Fallah, Jaouad Kharbach, Mohammed Ouazzani Jamil, Piotr Bojarczak, Jerzy Wojciechowski (Lithuania, Morocco, Poland) <i>Presenter: Živilė Vilkelė (Lithuania)</i></p> <p><b>10A.7. Improving the Operation of a Distribution Network by Optimal Siting and Sizing of Photovoltaic-Battery Energy Storage Systems</b> Nikola N. Krstić, Dragan S. Tasić, Dardan O. Klimenta, Milos J. Milovanović (Serbia) <i>Presenter: Dardan O. Klimenta (Serbia)</i></p>
<b>12:00–12:30</b>	<b>ELECTRONICS 2024 Closing Session</b>
<b>12:30–13:30</b>	<b>CONFERENCE LUNCH</b>

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