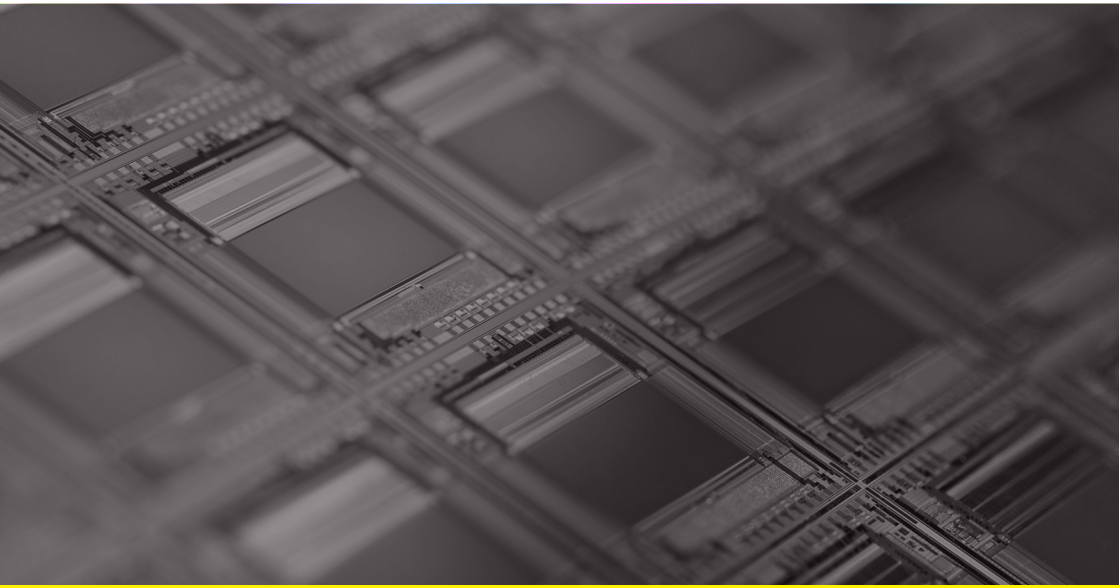
when
19th–21st
June, 2023

where
Lithuania

electronics

27TH INTERNATIONAL CONFERENCE 2023



programme

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27TH INTERNATIONAL CONFERENCE 2023

Monday, 19th June, 2023

Day 1

		Room A
10^{00}–10^{15}	1A	Opening Ceremony and Welcome
10^{15}–11^{00}	2A	**Invited Speaker** Jose A. Carrasco
		11^{00}–11^{45} TECHNICAL BREAK
11^{45}–12^{30}	3A	**Invited Speaker** Paulius Kozlovas
		12^{30}–13^{30} TECHNICAL BREAK
13^{30}–15^{00}	4A	Electronics
		15^{00}–15^{30} TECHNICAL BREAK
15^{30}–17^{00}	5A	Automation, Robotics and Control

Note: Time Zone – EEST

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27TH INTERNATIONAL CONFERENCE 2023

Tuesday, 20th June, 2023

Day 2

		Room A
9^{00}–10^{30}	6A	Electric Vehicles
10^{30}–11^{00} TECHNICAL BREAK		
11^{00}–12^{30}	7A	Telecommunications Engineering
12^{30}–13^{30} TECHNICAL BREAK		
13^{30}–15^{00}	8A	System Engineering, Computer Technology
15^{00}–15^{30} TECHNICAL BREAK		
15^{30}–17^{00}	9A	Electrical Engineering

Note: Time Zone – EEST

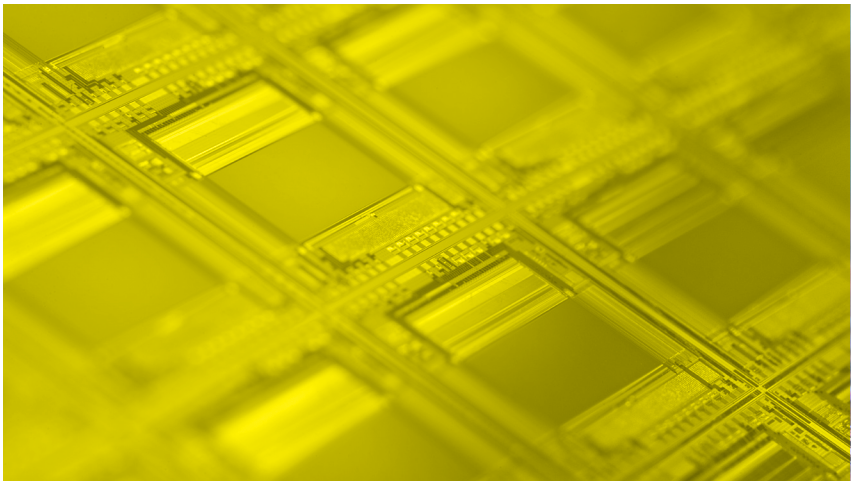
electronics
27TH INTERNATIONAL CONFERENCE 2023

Wednesday, 21st June, 2023

Day 3

Room A		
9^{00}–10^{30}	10A	Renewable Energy
10^{30}–11^{00} TECHNICAL BREAK		
11^{00}–12^{30}	11A	Signal Technologies
12^{30}–12^{45} TECHNICAL BREAK		
12^{45}–13^{00} ELECTRONICS 2023 CLOSING SESSION		

Note: Time Zone – EEST



Welcome

The 27th **International Conference ELECTRONICS 2023** is taking place online. ELECTRONICS 2023 is organized by Kaunas University of Technology (Department of Electronics Engineering of Faculty of Electrical and Electronics Engineering).

Technical program consists of two *invited talks*, *technical papers live video presentations* in sessions: Automation, Robotics and Control; Electric Vehicles, Electrical Engineering; Electronics;; Renewable Energy; Signal Technology; System Engineering, Computer Technologies; Telecommunications Engineering.

The accepted papers are published in the issues of the periodical scientific journal “Elektronika ir Elektrotechnika”, and in the IEEE Conference Proceedings (ISBN 979-8-3503-2255-2). Scientific materials published in “Elektronika ir Elektrotechnika” (ISSN 1392-1215) are abstracted and indexed in: Clarivate Web of Science (SCIE, JCR, IF – 1,059 (2021)), SCOPUS (CiteScore – 2,5 (2021)), DOAJ, INSPEC (IET), EBSCO.

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Programme Events

Invited Speaker

Dr. Jose A. Carrasco

EMXYS | Elche, Spain

Stability criteria on Power Bus Architectures Used in Space Platforms and Electromagnetic Interference Implications

Monday, 19th June, 10:15–11:00, Room A

Jose A. Carrasco was born in Alicante, Spain, in March 1967. After obtaining a M.Sc. in Physics in 1990, he worked for a period of two years as power electronics researcher for the European Space Agency in the European Space Research and Technology Center, Noorwijk, the Netherlands. In September 1993, he joins the Laboratory of Industrial Electronics of the Universidad de Valencia, in Spain, where he obtains his Ph.D. in Electrical Engineering in 1996 for a work on high efficiency and reliable power conversion techniques for space applications. In 1999 he joins the Universidad Miguel Hernandez where at present lectures on Electrical Engineering. In 2005 he co-founded the company EMXYS (www.emxys.com) where he is currently CEO, leading the strategic plan of the company from a profile of engineering services subcontractor to a full production contractor in space sector. Under his management, EMXYS has led more than 10 ESA and private space projects as main contractor, and 15 as partner, involving players like AIRBUS, GMV, ESA, NASA, JAXA, DLR and ONERA mainly on power electronics, mixed design and instrumentation. At present his interest focuses on optical communications for intersatellite links and LEO to orbit communications.

The standard used by the European Space Agency for the definition and implementation of spacecraft regulated power buses, unlike other existing standards by the American Institute for Aeronautics and Astronautics, SAE International or the International Deep Space Interoperability Standards, imposes very tight requirements for load connection to the regulated main bus. Understanding the stability implications of the output impedance requirement and its interaction with payload power supplies is a key for reducing electromagnetic interferences and implementing regulated buses for small spacecraft.

Invited Speaker

Paulius Kozlovas

Ignitis Group | Vilnius, Lithuania

Energy Ecosystem Vision for Baltic Sea Region

Monday, 19th June, 11:45–12:30, Room A

Paulius Kozlovas is an energy professional, currently serving as the head of a technology development team at the leading energy utility in the Baltic region. His research and expertise revolve around effectively tackling the issue of premature saturation in renewable energy generation, particularly emphasizing the critical need to address the lack of flexible demand. By sharing my insights, He aims to enlighten the audience about the formidable challenge of facilitating and encouraging continued investments in sustainable power generation.

The presentation elucidates the visionary Baltic energy ecosystem, poised to propel our region towards a future characterized by increased independence and energy security. It explains the imperative role of flexible demand in nurturing renewable developments, while proffering viable solutions for consideration.

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

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.

Invited papers:
45 minutes, including discussion.

Contributed oral papers:
15–18 minutes, including discussion.

Language

The official language of the ELECTRONICS 2023 Conference is English.

Messages

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

Live Broadcast

The presentations of sessions will be broadcasted live via Youtube.

Participants are warmly invited to join the Zoom sessions directly and actively engage in the respective discussions.

Entrance

To the Conference Video Rooms:

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

Each Session will be opened 15 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.

Monday, 19th June, 2023

ROOM A

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

10:15 – 11:00 **SESSION 2A**
Chairs: Algimantas Valinevicius, Darius Andriukaitis, Dangirutis Navikas
Invited Speaker Jose A. Carrasco (Spain)
Stability criteria on Power Bus Architectures Used in Space Platforms and Electromagnetic Interference Implications

11:00–11:45 TECHNICAL BREAK

11:45 – 12:30 **SESSION 3A**
Chairs: Algimantas Valinevicius, Darius Andriukaitis, Dangirutis Navikas
Invited speaker Paulius Kozlovas (Lithuania)
Energy Ecosystem Vision for Baltic Sea Region

12:30–13:30 TECHNICAL BREAK

13:30 – 15:00 **SESSION 4A | ELECTRONICS**
Chair: Dangirutis Navikas (Lithuania)

4A.1. **A New Method to Synthesize the Sinusoidal Oscillator Based on Series Negative Resistance-Capacitance and Its Implementation Using a Single Commercial IC, LT1228**
Worawut Kulapong, Winai Jaikla, Surapong Siripongdee, Roman Sotner, Peerawut Suwanjan, Amornchai Chaichana (Thailand, Czech Republic)
Presenter: Worawut Kulapong (Thailand)

4A.2. **Ultra-Low Energy Charge Trapping MOSFET With Neuro-Inspired Learning Capabilities**
Abhash Kumar, Alok Kumar Kamal, Jawar Singh, Bharat Gupta (India)
Presenter: Bharat Gupta (India)

13:30 – 15:00

4A.3. Novel Lossless Positive/Negative Grounded Capacitance Multipliers Using VCII
Mohammad Faseehuddin, Sadia Shireen, Sawal Hamid Md Ali, Worapong Tangsrirat (Malaysia)
Presenter: Sawal Hamid Md Ali (Malaysia)

4A.4. Detection of 2,4-Dinitrotoluene by Metal-Graphene Hybrid Plasmonic Nanoantennas With a Golden Ratio Rectangular Resonator
Ahmet Murat Erturan, Seyfettin Sinan Gultekin, Habibe Durmaz (Turkey)
Presenter: Ahmet Murat Erturan (Turkey)

4A.5. Slum Terrain Mapping using Low Cost 2D Laser Scanners
Syed Riaz un Nabi Jafri, Tariq Rehman, Asif Ahmed, Muhammad Shahzad Siddiqi, Asad Hayat, Tehniyat Saeed (Pakistan)
Presenter: Syed Riaz un Nabi Jafri (Pakistan)

15:00–15:30 TECHNICAL BREAK

15:30 – 17:00

SESSION 5A | AUTOMATION, ROBOTICS AND CONTROL

Chair: Marjan Golob (Slovenia)

5A.1. Discriminating Feed Rate of Combine Harvester by Using Association Rule Mining
Yehong Liu, Dong Dai, Can Tang, Xin Wang, Shumao Wang (China)
Presenter: Yehong Liu (China)

5A.2. Identification of Nonlinear Systems Using the Hammerstein-Wiener Model With Improved Orthogonal Functions
Sasa S. Nikolic, Miroslav B. Milovanovic, Nikola B. Dankovic, Darko B. Mitic, Stanisa Lj. Peric, Andjela D. Djordjevic, Petar S. Djekic (Serbia)
Presenter: Saša Siniša Nikolić (Serbia)

5A.3. Robust Consensus-Based Formation Control of a Group of UAV
Kaan Can, Abdullah Başçi (Turkey)
Presenter: Kaan Can (Turkey)

5A.4. Documentation as Code in Automotive System/Software Engineering
Momcilo Krunic (Serbia)
Presenter: Momcilo Krunic (Serbia)

5A.5. Implementation of a Self-hosted Internet of Things Solution on Personal Computer
Slavomir Matuska, Peter Brida, Ivana Bridova (Slovakia)
Presenter: Slavomir Matuska (Slovakia)

Tuesday, 20th June, 2023

ROOM A

9:00 – 10:30

SESSION 6A | ELECTRIC VEHICLES

Chair: Michal Frivaldsky (Slovakia)

6A.1. Quality Analysis of Welds Made With an Automatic Battery Pack Spot Welding Machine
Szymon Racewicz, Robert Fijałkowski (Poland)
Presenter: Szymon Racewicz (Poland)

6A.2. Model-Based Evaluation of Energy Consumption in Hybrid Electric Vehicles
Gergana I. Vacheva, Plamen A. Stanchev, Nikolay L. Hinov (Bulgaria)
Presenter: Gergana Ilieva Vacheva (Bulgaria)

6A.3. Design and Measurement of a Frequency Converter With SPWM Modulation of Output Voltage for Two-Phase Induction Motor
Jan Kanuch, Peter Girovsky, Jaroslava Zilkova, Marek Pastor (Slovakia)
Presenter: Marek Pastor (Slovakia)

6A.4. Modelling and Simulation of Induction Machine for Control of Energy Flows in Electric Vehicles
Gergana I. Vacheva, Plamen A. Stanchev, Nikolay L. Hinov (Bulgaria)
Presenter: Gergana Ilieva Vacheva (Bulgaria)

6A.5. Virtual Power Plant as a Tool for Cost-Reflective Network Charging Tariff
Austėja Dapkutė, Vytautas Šiožinys, Martynas Jonaitis, Mantas Kaminickas, Milvydas Šiožinys (Lithuania)
Presenter: Austėja Dapkutė (Lithuania)

10:30–11:00 TECHNICAL BREAK

11:00 – 12:30

SESSION 7A | TELECOMMUNICATIONS ENGINEERING

Chair: Roman Sotner (Czech Republic)

7A.1. FSO system Performances for Novel Turbulence Shadowed Chi-Square Model
Stefan R. Panic, Bojana Milosavljevic, Srdjan Milosavljevic, Milan Veskovic, Petar Spalevic (Serbia)
Presenter: Srdjan Z. Milosavljević (Serbia)

11:00 – 12:30

7A.2. Power Limits With Adjustable 10G Receiver Parameters for A-RoF Transmission
Inna Kurbatska, Armands Ostrovskis, Laura Skladova, Kristaps Rubuls, Sandis Spolitis, Vjaceslavs Bobrovs (Latvia)
Presenter: Kristaps Rubuls (Latvia)

7A.3. Narrowband Spectrum Sensing: Fuzzy Logic Versus Deep Learning Systems
Andres Rojas, Gordana Jovanovic Dolecek (Mexico)
Presenter: Andres Rojas (Mexico)

7A.4. Comparison of New Solutions in IP Fast Reroute
Jozef Papan, Ivana Bridova, Peter Brida, Michal Hraska, Slavomir Tatarka, Oleksandra Yeremenko (Slovakia)
Presenter: Jozef Papan (Slovakia)

7A.5. Using Level Crossing Rate of Selection Combining Receiver Damaged by Beaulieu-Xie Fading and Rician Co-Channel Interference with a Purpose of Machine Learning QoS Level Prediction
Suad Suljović, Dragana S. Krstić, Siniša Minić, Nenad N. Petrović, Mohammed Al Awadh, Devendra S. Gurjar (Serbia, Saudi Arabia)
Presenter: Dragana S. Krstic (Serbia)

12:30–13:30 TECHNICAL BREAK

13:30 – 15:00

SESSION 8A | SYSTEM ENGINEERING, COMPUTER TECHNOLOGY

Chair: Wlodek J. Kulesza (Sweden)

8A.1. A CNN-based Novel Approach for Classification of Sacral Hiatus with GAN-powered Tabular Dataset
Ferhat Kılıç, And Murat Korkmaz, Orhan Er, Cemil Altın (Turkey)
Presenter: Ferhat Kilic (Turkey)

8A.2. Transition-Relevance Places Machine Learning-Based Detection in Dialogue Interactions
Stanislav Ondáš, Matúš Pleva, Silvia Bačiková (Slovakia)
Presenter: Stanislav Ondas (Slovakia)

8A.3. A Fast and Accurate Method for Classification of Tomato Plants' Health Status Using Machine Learning and Image Processing
Hasan Ulutas, Veysel Aslantas (Turkey)
Presenter: Hasan Ulutas (Turkey)

13:30 – 15:00

8A.4. **Design of Convolutional Neural Networks Architecture for Non-Profiled Side Channel Attack Detection**
Amjed Abbas Ahmed, Mohammad Kamrul Hasan, Shayla Islam, Azana Hafizah Mohd Aman (Malaysia)
Presenter: Amjed Abbas Ahmed (Malaysia)

8A.5. **Artificial Bee Colony Algorithm Based Very Fast Renewable Energy System Optimization Tool Design**
Cemil Altin (Turkey)
Presenter: Cemil Altin (Turkey)

8A.6. **Modified Backpropagation Algorithm with Multiplicative Calculus in Neural Networks**
Serkan Ozbay (Turkey)
Presenter: Serkan Ozbay (Turkey)

15:00–15:30 TECHNICAL BREAK

15:30 – 17:00

SESSION 9A | ELECTRICAL ENGINEERING

Chair: Dardan Klimenta (Serbia)

9A.1. **Distributionally Robust Collaborative Dispatch of Integrated Energy Systems with DNE Limits Considering Renewable and Contingency Uncertainties**
Xiaotong Ji, Fan Xiao, Dan Liu, Ping Xiong, Mingnian Zhang (China)
Presenter: Dan Liu (China)

9A.2. **Modeling and Analysis of Transient Overvoltage due to Reclosing of Distributed Energy Resources**
Mehmet Ali Ozcelik, Taite Clark, Michael Ruppert, Jian Sun (Turkey, USA)
Presenter: Mehmet Ali Ozcelik (Turkey)

9A.3. **Incorporating Service Type in Aging Failure Model of High Voltage Circuit Breaker**
Sajjad Asefi, Jako Kilter, Mart Landsberg (Estonia)
Presenter: Sajjad Asefi (Estonia)

9A.4. **Experimental Investigation of Changes in Iron and Copper Losses in the Transformer**
Mehmet Ali Ozcelik (Turkey)
Presenter: Mehmet Ali Ozcelik (Turkey)

9A.5. **Analysis of DC Corona Discharge Electric Field and Electrohydrodynamic Air Flow**
Povilas Marčiulionis (Lithuania)
Presenter: Povilas Marčiulionis (Lithuania)

Wednesday, 21st June, 2023

ROOM A

9:00 – 10:30

SESSION 10A | RENEWABLE ENERGY

Chair: Bogdan Miedzinski (Poland)

10A.1. Advanced Pitch Angle Control Based on Genetic Algorithm and Particle Swarm Optimization on FAST Turbine Systems
Goksu Gorel, Mahdi O. Abdi (Turkey)
Presenter: Goksu Gorel (Turkey)

10A.2. Low-carbon Economic Multi-objective Dispatch of Integrated Energy System Based on GAPSO
Minglei Qin, Anjie Lu, Yu Huang (China)
Presenter: Yu Huang (China)

10A.3. Short-Term Solar Power Forecasting Based on CEEMDAN and Kernel Extreme Learning Machine
Ali Riza Gün, Emrah Dokur, Uğur Yüzgeç, Mehmet Kurban (Turkey)
Presenter: Ali Riza Gun (Turkey)

10A.4. Manufacturing of Low-Cost Parabolic Dish Concentrators With Manual Dual-Axis Tracking
Abd Elhalim Benzetta, Mahfoud Abderrezek, Chettoh Ali, Benbahia Mokhtaria Asma (Algeria)
Presenter: Abd El Halim Benzetta (Algeria)

10A.5. Differential Evolution Algorithm Based Very Fast Renewable Energy System Optimization Tool Design
Cemil Altin (Turkey)
Presenter: Cemil Altin (Turkey)

10A.6. The Use of the Imperialist Competitive Algorithm in Optimizing the Setting of the Tram Speed Controller in the Development Matlab – Simulink Environment
Vaclav Kolar, Lukas Demel, Roman Hrbac, Jiri Ciganek, Stanislav Zajaczek, Maros Durica (Czech Republic)
Presenter: Jiri Ciganek (Czech Republic)

10:30–11:00 TECHNICAL BREAK

11:00 – 12:30

SESSION 11A | SIGNAL TECHNOLOGIES

Chair: Panayiotis Frangos (Greece)

11A.1. 10T SRAM Cell as an In-Memory Computing Engine for a Large Range of Boolean Computations
Abhash Kumar, Jawar Singh, Bharat Gupta (India)
Presenter: Bharat Gupta (India)

11A.2. Application of VFD for Power Factor Improvement in LED Loaded Power Distribution Lines
Gytis Svinkūnas, Gytis Petrauskas (Lithuania)
Presenter: Gytis Svinkūnas (Lithuania)

11A.3. Advanced Switchgear Signals Simulator for a Distribution Substation Model
Marek Höger, Michal Reguľa, Peter Braciník (Slovakia)
Presenter: Marek Höger (Slovakia)

11A.4. Wireless Dbs and Blood Pressure Measurement System for Experiments With Animals
Vytautas Jonkus, Žilvinas Chomanskis, Tadas Danielius (Lithuania)
Presenter: Vytautas Jonkus (Lithuania)

11A.5. Semantic Segmentation Using U-Net Deep Learning Network for Quince Phenotyping on RGB and HyperSpectral Images
Kaspars Sudars, Ivars Namatevs, Artūrs Ņikuļins, Rihards Balašs, Astile Peter, Sarmīte Strautiņa, Edīte Kaufmane, Ieva Kalniņa (Latvia)
Presenter: Artūrs Ņikuļins (Latvia)

12:30–12:45 TECHNICAL BREAK

12:45–13:00 ELECTRONICS 2023 CLOSING SESSION

Contacts

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