



Liepāja

**The 7th IEEE Workshop on
Advances in Information, Electronic and Electrical Engineering
AIEEE'2019**

Liepaja, Latvia, November 15–16, 2019

Concert Hall "Great Amber"

Address: Radio iela 8, Liepaja, LV-3401, Latvia

Conference Programme

Organized by:



IEEE Latvia Section



Riga Technical University



IEEE Lithuania Section



**Vilnius Gediminas Technical
University**

General Co-Chairs:

Prof. Assoc. Andrejs Romanovs

Riga Technical University, Latvia

Prof. Dalius Navakas

Vilnius Gediminas Technical University, Lithuania

Scientific and Organizing Committee Chairs:

Prof. Ilja Galkins

Riga Technical University, Latvia

Prof. Vytautas Urbanavičius

Vilnius Gediminas Technical University, Lithuania

Technical Co-Sponsors:

IEEE Latvia Section Power Electronics/Industrial Electronics/Industry Applications Society Joint Chapter; IEEE Latvia Section Computer Society Chapter; IEEE Latvia Section Communications, Microwave Theory and Techniques, and Antennas and Propagation Joint Societies Chapter, IEEE Lithuania Section Computer Chapter ; IEEE Lithuania Section Signal Processing/ Computational Intelligence/Communications Joint Chapter.

FRIDAY, NOVEMBER 15TH**Opening 13.00–13.15**

- AIEEE General Co-Chairs **Andrejs Romanovs and Dalius Navakauskas**
- Liepaja City administration welcome
- IEEE Latvia Section welcome, Section Chair **Nadežda Kuņicina**

Keynote speech 13.15–13.45

Building resilient space exploration missions

Prof. **Mike Hinchey**, University of Limerick, Past Director of the NASA Software Engineering Laboratory

Oral Session A 13.45–15.45**Session Co-Chairs:**

Vytautas Urbanavicius, Prof Dr

Vilnius Gediminas Technical University, Lithuania

Nadezhda Kunicina, Prof Dr

Riga Technical University, Latvia

1. Investigating HTTP response headers for the classification of devices on the Internet
ARiga Technical Universitys Lavrenovs (NATO CCD COE); Gabor Visky (NATO Cooperative Cyber Defence Centre of Excellence)
2. Low-power wireless sensor network system for early diagnostic of subacute rumen acidosis in cows
Anatolijs Zabasta (Riga Technical University)
3. Induction Motor's Bearing Condition Motoring and Diagnosis Applying Cloud Services and Artificial Neural Networks
Karolis Dambrauskas (Kaunas University of Technology); Jonas Vanagas (KTU); Tomas Zimnickas (Kaunas University of Technology); Artūras Kalvaitis (KTU); Tomas Bizimavičius (KTU)
4. Chaotic Synchronization for Data Transmission System
Ruslan Babajan (Radioelectronics institute)
5. Battery Batch Impedance Analysis for Pack Design
Kristaps Vitols (Riga Technical University); Edgars Grinfogels (Riga Technical University)
6. Simulation study of hail impact on photovoltaic modules
Vytautas Makarskas (Vilnius Gediminas technical university); Mindaugas Jurevičius (Vilnius Gediminas technical university); Artūras Kilikevičius (Vilnius Gediminas technical university); Sergejus Borodinas (Vilnius Gediminas technical university); Janis Zakis (Riga technical university)
7. Designing a Multi-Agent System for Improving Supply Chain Performance
Darya Plinere (Riga Technical University); Yuri Merkuryev (Riga Technical University)
8. Optimized Design of Single Phase Inverter Output LC-filter
Agris Treimanis (Riga Technical University Liepaja Affiliate)
9. Investigation of the effectiveness of nonlinear inductor in the AC/DC node of three phase rectifier
Marcis Prieditis (Riga Technical University); Aigars Vitols (Riga Technical University); Ivars Rankis (Riga Technical University)
10. Motor bearing fault diagnosis using pattern recognition machine learning technique
Tomas Zimnickas (Kaunas University of Technology); Jonas Vanagas (Kaunas University of Technology); Artūras Kalvaitis (KTU); Karolis Dambrauskas (Kaunas University of Technology)
11. Synchronization of AXI Streaming Interfaces for Convolution Core Implementation on FPGA
Tomyslav Sledevic (VGTU)
12. Phase Characteristics of Models of GaAs Semiconductor Waveguides in Case of Two Layers
Darius Plonis (VGTU); Artūras Serackis (Vilnius Gediminas Technical University); Andrius Katkevičius (Vilnius Gediminas Technical University)

Poster Session B 15.45–16.45 / Coffee break 15.45–16.45

Session Co-Chairs:

Andrejs Romanovs, Assoc.Prof Dr
Riga Technical University, Latvia

Dalius Navakauskas, Prof Dr
Vilnius Gediminas Technical University, Lithuania

1. Autonomous Open Data Prediction Framework
Jānis Pekša (Riga Technical University)
2. Influence of Element Nominal Values on Chaos Oscillator Dynamics and Synchronization
Darja Cirjulina (Riga Technical University)
3. Combined heat and power plant electrical equipment incident rate and unavailability empirical expression
Romāns Oļekšijs (Riga Technical University); Bogdan Olekshii (Riga Technical University)
4. Investigation of feedback circuit for oscillation-based self-testing systems
Leonid Kladovščikov (Vilnius Gediminas technical university); Romualdas Navickas (Vilnius Gediminas technical university)
5. Noise Immunity of Chaotic Synchronization in Master-Slave System
Davis D. Anstrangs (Riga Technical University); Darja Cirjulina (Riga Technical University)
6. Review of the Blockchain Technology in the Energy Sector
Julija Golosova (Riga Technical University); Andrejs Romanovs (Riga Technical University)
7. Practical Method for Experimental Detection of DC Motor Inertia to Design a Speed Regulator
Kaspars Kroics (Riga Technical University)
8. Fuzzy logic based human fatigue component gradation estimation
Matiss Erins (Riga Technical University)
9. Analysis of the Procedures for the Supply of Energy Users during Energy Crisis
Aivo Jasevics (Riga Technical University)
10. Industrial robot impact force detection using motor currents
Ricards Porins (Riga Technical University)
11. Effects of potential EU-wide heating sector CO₂ emission trading scheme on heating energy prices and CO₂ emissions of Latvian households
Dmitrijs Guzs (RIGA TECHNICAL UNIVERSITY)
12. High power electroporation systems in food treatment - review
Sebastjānas Kurcevskis (Vilnius Gediminas Technical University); Audrius Grainys (Vilnius Gediminas Technical University); Sonata Tolvaišienė (Vilnius Gediminas Technical University); Tomas Ustinavičius (Vilnius Gediminas Technical University)
13. Analysis of motion modelling approaches for industrial robot applications.
Armands Senfelds (Riga Technical University)
14. IoT Camera-based Approach to Capture and Process SI-NDVI Sensor Data for Industrial Tomato Greenhouse
Janis Bicans (Riga Technical University); Kristis Kviesis (Riga Technical University); Ansis Avotins (Riga Technical University)
15. P system Framework of Ant Colony Algorithm for IoT data routing
Aurimas Gedminas (VGTU); Dalius Navakauskas (VGTU)
16. Listener Movement Prediction based Realistic Real-Time Binaural Rendering
Mantas Tamulionis (VGTU); Artūras Serackis (Vilnius Gediminas Technical University)
17. Teaching Computer Architecture and Organization with FPGA
Kęstutis Bartnykas (VGTU)
18. Hybrid Dynamic Models for Adaptive Energy Price Management
Ievgen Pichkalov (IEEE Ukraine Section)
19. The efficient wireless charging system for mobile devices
Rodions Saltanovs (Riga Technical University)

Oral Session C 16.45–18.45

Session Co-Chairs:

Darius Plonis, Assoc.Prof Dr

Vilnius Gediminas Technical University, Lithuania

Ilja Galkins, Prof Dr

Riga Technical University, Latvia

1. Precision Comparison of Various Overhead DC Grid Transmission Resistance Changing Steps in Electric Transport Motion Simulations
Girts Stana (Riga Technical University); Prof. Viesturs Brazis (Riga Technical University, Latvia)
2. An Example of PCB Reverse Engineering - Reconstruction of Digilent JTAG SMT3 Schematic
Matěj Bartík (CTU FIT)
3. Adaptive detection of battery energy storage system charge/discharge cycle quantity
Dmitrijs Boreiko (Riga Technical University); Roman Petrichenko (Riga Technical University)
4. Research and Development of Mobile Personality Test Device
Jolanta Graudone (Riga Technical University); Pēteris Apse-Apsītis (Riga Technical University); Ingars Steiks (Riga Technical University)
5. The comparison of technical capabilities of six pulse generators for biological applications
Paulius Butkus (VGTU); Sonata Tolvaišienė (VGTU)
6. Effect of active performance on skin – sportswear interface pressure
Liene Silina (Riga Technical University); Eva Lapkovska (Riga Technical University); Ricards Porins (Riga Technical University); Inga Dabolina (Riga Technical University); Pēteris Apse-Apsītis (Riga Technical University)
7. Graphical Tool for Browsing Motor Control Simulation Data in the Space Vector Domain
Matiss Stunda (Riga Technical University)
8. Analysis of the Efficiency of Quay Crane Control
Sergej Jakovlev (Klaipeda University); Tomas Eglynas (Klaipeda University); Mindaugas Juis (Klaipeda University); Saulius Gudas (Vilnius University); Edvinas Pocevicus (Klaipeda University); Valdas Jankunas (Klaipeda University)
9. Development of semi - adoptive Waste Collection Vehicle Routing Algorithm for conglomerations with population up to million pupils
Olga Dolinina (Yuri Gagarin State Technical University of Saratov)
10. Classification at the Edge: Implementation and Performance Evaluation
Julius Skirelis (Vilnius Gediminas Technical University); Dalius Navakauskas (VGTU)
11. Investigation of Neural Networks for Lithuanian Speech Synthesis
Gediminas Navickas (Vilnius University); Gintautas Tamulevicius (Vilnius University)
12. High voltage driver for the Pockels cell
Giedrius Sinkevičius (Center for physical sciences and technology); Algirdas Baškys (Vilnius Gediminas Technical University)

Workshop Closure 18.45–19.00

Dalius Navakauskas, Prof Dr

IEEE Lithuania Section Chair

Gala Dinner 20.00–22.30

TBA

SATURDAY, NOVEMBER 16TH

SOCIAL PROGRAMME - TBA