



→ when  
19<sup>th</sup>–21<sup>st</sup> June  
2017

↓ where  
Palanga  
Lithuania

↓ technical sponsor



↓ sponsors



Security-Vision-Systems

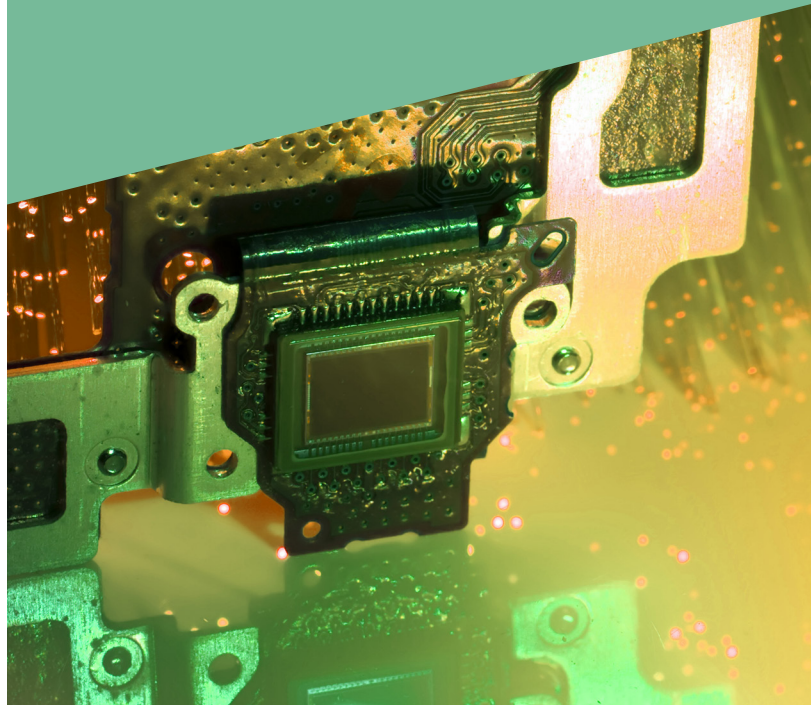


Conference is organized  
by Kaunas University of  
Technology, Department of  
Electronics Engineering

## 21<sup>st</sup> International Conference

# ELECTRONICS 2017

## Programme



# Monday, 19<sup>th</sup> June, 2017

## Day 1

	Room A		Room B
7 <sup>00</sup> -7 <sup>45</sup> MORNING WITH YOGA			
10 <sup>00</sup> -10 <sup>15</sup>	<b>1A</b>	Opening Ceremony and Welcome	
10 <sup>15</sup> -11 <sup>00</sup>	<b>2A</b>	Invited Speaker Tomas Gomez Alvarez-Arenas	
11 <sup>00</sup> -11 <sup>45</sup> COFFEE BREAK			
11 <sup>45</sup> -12 <sup>30</sup>	<b>3A</b>	Invited Speaker Liudas Mazeika	
12 <sup>30</sup> -13 <sup>30</sup> CONFERENCE LUNCH			
13 <sup>30</sup> -15 <sup>00</sup>	<b>4A</b>	Electronics	<b>1B</b> Telecommunications Engineering
15 <sup>00</sup> -15 <sup>30</sup> COFFEE BREAK			
15 <sup>30</sup> -17 <sup>00</sup>	<b>5A</b>	Electrical Engineering	<b>2B</b> Signal Technology
18 <sup>00</sup> -22 <sup>00</sup> WELCOME PARTY			

# Tuesday, 20<sup>th</sup> June, 2017

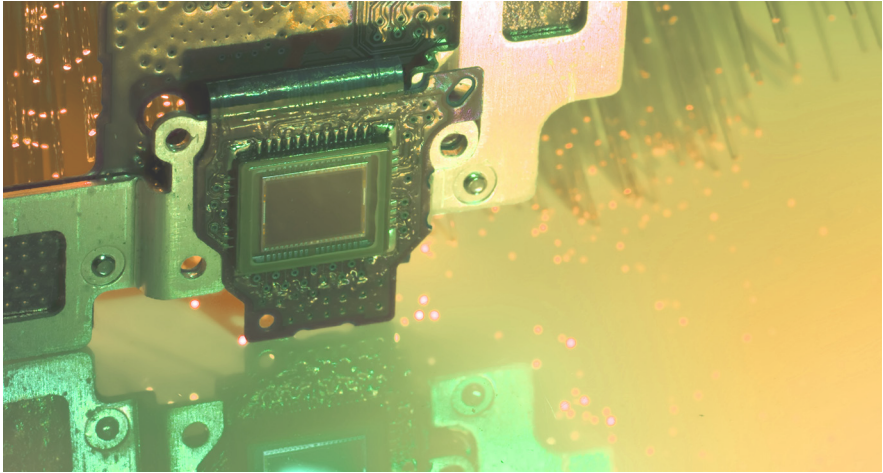
## Day 2

		Room A	Room B	
<b>7<sup>00</sup>-7<sup>45</sup> MORNING WITH YOGA</b>				
9 <sup>00</sup> -10 <sup>30</sup>	<b>6A</b>	High Frequency Technology, Microwaves	<b>3B</b>	System Engineering, Computer Technology
<b>10<sup>30</sup>-11<sup>00</sup> COFFEE BREAK</b>				
11 <sup>00</sup> -12 <sup>30</sup>	<b>7A</b>	Telecommunications Engineering	<b>4B</b>	Renewable Energy
<b>12<sup>30</sup>-13<sup>30</sup> CONFERENCE LUNCH</b>				
13 <sup>30</sup> -15 <sup>00</sup>	<b>8A</b>	Automation, Robotics	<b>5B</b>	Electronics
<b>15<sup>00</sup>-15<sup>30</sup> COFFEE BREAK</b>				
15 <sup>30</sup> -17 <sup>00</sup>	<b>9A</b>	Electrical Engineering	<b>6B</b>	Editorial Board Meeting of "EiE"
<b>17<sup>30</sup>-22<sup>00</sup> BUS TRIP AND CONFERENCE DINNER</b>				

# Wednesday, 21<sup>st</sup> June, 2017

## Day 3

		Room A	Room B	
7 <sup>00</sup> -7 <sup>45</sup> MORNING WITH YOGA				
9 <sup>00</sup> -10 <sup>30</sup>	<b>10A</b>	Electronic Measurements	<b>7B</b>	Telecommunications Engineering
10 <sup>30</sup> -11 <sup>00</sup> COFFEE BREAK				
11 <sup>00</sup> -12 <sup>30</sup>	<b>11A</b>	System Engineering, Computer Technology	<b>8B</b>	Automation, Robotics
12 <sup>30</sup> -13 <sup>30</sup> CONFERENCE LUNCH				
13 <sup>30</sup> -14 <sup>00</sup> ELECTRONICS 2017 CLOSING SESSION IN ROOM A				



Welcome

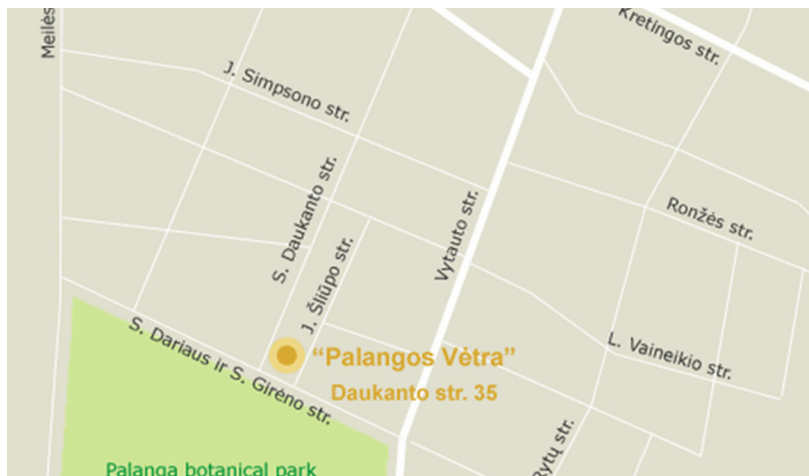
The 21<sup>st</sup> **International Conference ELECTRONICS 2017** is taking place in Palanga, a seaside resort town in western Lithuania, on the shore of the Baltic Sea. It is the busiest summer resort in Lithuania and has beaches of sand and beautiful sand dunes. ELECTRONICS 2017 is organized by Kaunas University of Technology (Department of Electronics Engineering of Faculty of Electrical and Electronics Engineering).

Technical program consists of two invited talks and technical papers oral presentations in parallel sessions: Automation, Robotics and Control; Electrical Engineering; Electronic Measurements; Electronics; High Frequency Technology, Microwaves; Microelectronics; 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 978-1-5386-0394-9). Scientific materials published in “Elektronika ir Elektrotechnika” (ISSN 1392-1215) are abstracted and indexed in: Clarivate Analytics Web of Science (formerly Thomson Reuters (ISI) Web of Knowledge) Citation Databases (SCIE, JCR), INSPEC, VINITI, EBSCO.



## Conference Venue



Hotel “Palangos Vėtra” is located in the centre of the resort.

Address: Hotel “Palangos Vėtra”  
S. Daukanto St. 35, Palanga  
Phone +370 460 53032  
Mob. phone +370 611 36169  
hotel@palangosvetra.lt  
<http://www.palangosvetra.lt/en/>



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**Prof., Dr. Yeon-Mo Yang**  
Kumoh National Institute of Technology / South Korea



# Programme Events

## ↓ Invited Speaker



### Dr. Tomas Gomez Alvarez-Arenas

Spanish National Research Council, Spain

### Ultrasonic Transducers for Operation in Air: Technologies, Applications and Future Trends

Monday, 19<sup>th</sup> June, 10:15–11:00, Room A

Dr. Tomas Gomez Alvarez-Arenas is the chief of the Sensors and Ultrasonic Systems Department of the Institute of Physical and Information Technologies (ITEFI, [www.itefi.csic.es](http://www.itefi.csic.es)) and researcher at Spanish National Research Council (CSIC, [www.us-biomat.com](http://www.us-biomat.com)).

Technologies that make possible to send and receive ultrasonic signals to and from the air with a given centre frequency, frequency bandwidth, sensitivity and field geometry are a key component in many different applications. Distance measurements, echolocation, artificial vision, human-machine contactless interfaces and gesture recognition systems, wireless and secure communications, wireless energy transfer, non-destructive evaluation of advanced materials, fully contactless analysis of art objects, fully non-invasive quality control of food stuff, determination of water needs of plants for efficient and precision agriculture, etc.

Ultrasonic transducers permit us to convert electrical signals into ultrasound waves and vice versa. The design and fabrication of efficient air-coupled transducers is one of the most challenging problems in this field. Two different transduction mechanisms are currently used based on either the piezoelectric or the electrostrictive effect. Piezoelectric transducers use to be resonant devices where resonances appear in the piezoelectric element itself (>100 kHz) or in passive structures (< 100 kHz). Electrostrictive transducers are nowadays fabricated using microfabrication techniques (CMUT – capacitive micromachined transducers) that also allow to integrate the electronics. This talk will address the main transduction technologies available and their applications: possibilities, limitations, solutions and future trends.

## ↓ Invited Speaker



### Prof. Dr. Liudas Mazeika

Prof. K. Barsauskas Ultrasound Research Institute, Lithuania

### Ultrasonic Measurements: Trends, Problems, Solutions

Monday, 19<sup>th</sup> June, 11:45–12:30, Room A

The importance of various measurements is growing mainly due to development of automatic technologies, and the need of safe exploitation of dangerous and complex objects. The ultrasonic waves are one of the means to penetrate into or through various materials thus enable the estimation of internal properties, or structure of the object. On the other hand, they are not dangerous for humans in contrary to X-rays or other similar methods. The ultrasonic waves are used in industry for evaluation of material properties and especially for detection of the defects in various components. The ultrasonic measurements seem to be simple, however, they combine many

branches of science such as mathematics, physics, electronics, signal processing, materials science and informatics. The talk will start with a brief presentation of ultrasonic measurements in general and putting accents to complexity and solution of the problems. The recent trends in the development of ultrasonic techniques will be presented later and illustrated by multiple examples of applications in various fields of industries such as power plants, aerospace, plastic manufacturing. The advanced signal processing techniques used in ultrasonic measurements and imaging will be discussed as well.

# Information for Participants



## Registration

**Starts on Sunday**  
18<sup>th</sup> June, 2017.  
16:00.

### Conference Desk

#### Working Hours:

Sunday, 18<sup>th</sup> June, 2017  
16:00–19:00.

Monday, 19<sup>th</sup> June, 2017  
8:30–16:30.

Tuesday, 20<sup>th</sup> June, 2017  
8:30–16:30.

Wednesday, 21<sup>st</sup> June, 2017  
8:30–12:30.



## Equipment

1. PC (Microsoft Windows 10 and MS Office 2013).

2. Projector.

You may bring your presentation on a USB stick and use our PC.



## Messages

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



## Entrance

### To the Conference Events:

Each participant will receive a name tag at the Conference Desk.

The tag is the official pass for entry to the Conference events.

Presenters will be registered by a session chair before each session.



## Presentation Time

### Invited paper:

45 minutes, including discussion.

### Contributed oral paper:

15 minutes, including discussion.



## Live Broadcast

The presentations of sessions in Room A will be broadcasted live via Youtube and will be made available at Conference website (<http://electronicsconf.ktu.edu>).



## Social Events

### Sightseeing Tour

Sunday, 18<sup>th</sup> June, 2017  
19:00–20:00.

### Welcome Party

Monday, 19<sup>th</sup> June, 2017  
18:00–22:00.

### Bus Trip and Conference Dinner

Tuesday, 20<sup>th</sup> June, 2017  
17:30–22:00.

### Yoga Sessions

We are pleased to offer our conference attendees free Yoga sessions. During the registration process at the Conference Desk you can indicate if you are interested in attending Yoga sessions. Sessions will be held in early mornings at the times indicated below:

Monday, 19<sup>th</sup> June, 2017  
7:00–7:45.

Tuesday, 20<sup>th</sup> June, 2017  
7:00–7:45.

Wednesday, 21<sup>st</sup> June, 2017  
7:00–7:45.



## Language

The official language of the ELECTRONICS 2017 Conference is English.



Monday, 19<sup>th</sup> June, 2017

Room A

7:00–7:45 SPECIAL SESSION  
MORNING WITH YOGA

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

10:15–11:00 SESSION 2A  
Chairs: Algimantas Valinevicius, Darius Andriukaitis,  
Dangirutis Navikas  
**Invited Speaker** Tomas Gomez Alvarez-Arenas (Spain)  
**Ultrasonic Transducers for Operation in Air: Technologies,  
Applications and Future Trends**

11:00–11:45 COFFEE BREAK

11:45–12:30 SESSION 3A  
Chairs: Algimantas Valinevicius, Darius Andriukaitis,  
Dangirutis Navikas  
**Invited speaker** Liudas Mazeika (Lithuania)  
**Ultrasonic Measurements: Trends, Problems and Solutions**

12:30–13:30 CONFERENCE LUNCH

13:30–15:00 SESSION 4A / ELECTRONICS  
Chair: Dangirutis Navikas (Lithuania)  
**4A.1. Temperature Influence Analysis on the Selected  
Current Sources Stability in the Static and Dynamic  
Operating States**  
Wojciech Walendziuk, Adam Idzkowski, Jerzy Golebiowski,  
Pawel Swietochowski (Poland)  
*Presenter: Wojciech Walendziuk (Poland)*  
**4A.2. Hardware Implementation of Single Iterated  
Multiplicative Inverse Square Root**  
Jun Luo, Qijun Huang, Hongwei Luo, Yue Zhi, Xiaoqiang Wang  
(China)  
*Presenter: Jun Luo (China)*  
**4A.3. Design and Optimization of Pulsed Magnetic Field  
Generator for Cell Magneto-Permeabilization**  
Vitalij Novickij, Audrius Grainys, Gediminas Staigvila, Sonata  
Tolvaisiene, Tomas Ustinavicius, Jurij Novickij (Lithuania)  
*Presenter: Vitalij Novickij (Lithuania)*

**4A.4. Novel First Order Current Mode MOS-C Phase Shifters**

Deniz Ozenli, Abdullah Yesil, Emre Arslan, H. Hakan Kuntman  
(Turkey)

*Presenter: Emre Arslan (Turkey)*

**4A.5. Electromagnetic Compatibility of Impedance Source Inverters**

13:30–15:00 Krzysztof Bernacki, Zbigniew Rymarski (Poland)

*Presenter: Krzysztof Bernacki (Poland)*

**4A.6. Universal Pseudo-Differential Filter Using DDCC and DVCCs**

Ondrej Sladok, Jaroslav Koton, Norbert Herencsar (Czech Republic)

*Presenter: Ondrej Sladok (Czech Republic)*

15:00–15:30 COFFEE BREAK

**SESSION 5A / ELECTRICAL ENGINEERING**

**Chair: Ali Kircay (Turkey)**

**5A.1. Allocation Method for Mobile Charging Vehicles Based on the Spatial Charging Demand**

Liu Yujun, Yin Hongyuan, Zeng Pingliang, Wang Zhongdong, Lu Zigang (China)

*Presenter: Yujun Liu (China)*

**5A.2. Moth Swarm Algorithm for Solving Combined Economic and Emission Dispatch Problem**

Milena Jevtic, Nenad Jovanovic, Jordan Radosavljevic, Dardan Klimenta (Serbia)

*Presenter: Dardan O. Klimenta (Serbia)*

15:30–17:00

**5A.3. Development of the Smart Annealing Unit and Analysis of Low-frequency Conducted Disturbances by Connection to Low Voltage Public Network**

Roman Hrbac, Tomas Mlcek, Jan Dudek, Vaclav Kolar (Czech Republic)

*Presenter: Roman Hrbac (Czech Republic)*

**5A.4. Finite-Set Model Predictive Direct Power Control of Grid Connected Current Source Inverter**

Hamza Feroura, Fateh Krim, Billel Talbi, Abdelbaset Laib, Abdesslam Belaout (Algeria)

*Presenter: Hamza Feroura (Algeria)*

	<p><b>5A.5. Properties of State Estimation for Power System with Quadrature Booster in Rectangular Coordinates</b>  Tomasz K. Okon, Kazimierz Wilkosz (Poland)  <i>Presenter: Tomasz K. Okon (Poland)</i></p>
15:30–17:00	<p><b>5A.6. Analysis and Optimization of Coupled Windings in Magnetic Resonant Wireless Power Transfer Systems with Orthogonal Experiment Method</b>  Xiao Yudi, Mao Xingkui, Lin Mao , Zhang Zhe, Michael A. E. Andersen (China, Denmark)  <i>Presenter: Yudi Xiao (China)</i></p>
18:00–22:00	WELCOME PARTY

Room B	
7:00–7:45	SPECIAL SESSION MORNING WITH YOGA
12:30–13:30	CONFERENCE LUNCH
	<p><b>SESSION 1B / TELECOMMUNICATIONS ENGINEERING</b>  <i>Chair: Leszek Nowosielski (Poland)</i></p>
	<p><b>1B.1. Improved Composite Q-Function Approximation and its Application in ASEP of Digital Modulations over Fading Channels</b>  Aleksandar Veljko Markovic, Zoran Peric, Stefan Panic, Petar Spalevic, Zoran Todorovic (Serbia)  <i>Presenter: Aleksandar Veljko Markovic (Serbia)</i></p>
13:30–15:00	<p><b>1B.2. Investigation of EDFA Positioning Impact on the Quality of the Amplified Signal in DWDM Transmission Systems</b>  Julija Putrina, Sergejs Olonkins, Vjaceslavs Bobrovs (Latvia)  <i>Presenter: Julija Putrina (Latvia)</i></p>
	<p><b>1B.3. The Automatic Radio Transmission Systems Recognition</b>  Leszek Nowosielski, Bogdan Uljasz (Poland)  <i>Presenter: Leszek Nowosielski (Poland)</i></p>
	<p><b>1B.4. Performance Analysis with Wireless Power Transfer Constraint Policies in Full-Duplex Relaying Networks</b>  Hoang-Sy Nguyen, Miroslav Voznak, Minh-Tung Nguyen, Lukas Sevcik (Vietnam, Czech Republic)  <i>Presenter: Lukas Sevcik (Czech Republic)</i></p>

**1B.5. Investigation of Influence of Mixed Configurations on Performance of WDM-PON**

Inna Kurbatska, Anita Alsevska, Lilita Gegere, Vjaceslavs Bobrovs (Latvia)

13:30–15:00 *Presenter: Inna Kurbatska (Latvia)*

**1B.6. Subcarrier Allocation Algorithm Based on Greedy-Like in Multi Carrier Code Division Multiple Access Systems**

Muhammet Nuri Seyman, Bircan Demiral (Turkey)

*Presenter: Bircan Demiral (Turkey)*

15:00–15:30 COFFEE BREAK

**SESSION 2B / SIGNAL TECHNOLOGY**

*Chair: Adam Idzkowski (Poland)*

**2B.1. A Low Complexity Based Spectrum Partitioning – ESPRIT for Non-Contact Vital Radar**

Sangdong Kim, Kyunkyung Lee (South Korea)

*Presenter: Sangdong Kim (South Korea)*

**2B.2. Ultrasonic Single Element and Sectorized Array Transducers with Omnidirectional 2D Field Distribution for Non-Contact Human-Machine Interface and Echo-Location**

Tomas Gomez Alvarez-Arenas, Luis Diez (Spain)

*Presenter: Tomas Gomez Alvarez-Arenas (Spain)*

**2B.3. Wireless Monitoring System for Fireman's Competence Objective Assessment**

15:30–17:00 Damian Dziak, Bartosz Jachimczyk, Krzysztof Bork-Ceszak, Tadeusz Zydanowicz, Wlodek J. Kulesza (Poland, Sweden)

*Presenter: Damian Maciej Dziak (Poland)*

**2B.4. Sensors and Signal Processing Methods for a Wearable Physiological Parameters Monitoring System**

Alvydas Dosinas, Robertas Lukocius, Mindaugas Vaitkunas, Gabija Nedzinskaite, Paulius Vaskys (Lithuania)

*Presenter: Mindaugas Vaitkunas (Lithuania)*

**2B.5. Recent Advances in Crest Factor Minimization of Multisine**

Jaan Ojarand, Mart Min (Estonia)

*Presenter: Jaan Ojarand (Estonia)*

**2B.6. Multilevel Delta Modulation with Switched First-Order Prediction for Wideband Speech Coding**

Zoran Peric, Bojan Denic, Vladimir Despotovic (Serbia)

*Presenter: Bojan Denic (Serbia)*

18:00–22:00 WELCOME PARTY



Tuesday, 20<sup>th</sup> June, 2017

Room A

7:00–7:45

**SPECIAL SESSION**  
MORNING WITH YOGA

**SESSION 6A / HIGH FREQUENCY TECHNOLOGY,  
MICROWAVES**

**Chair: Linas Svilainis (Lithuania)**

**6A.1. Microstrip Antennas Diagnostics with Thermography**

Leszek Nowosielski, Marian Wnuk (Poland)

*Presenter: Leszek Nowosielski (Poland)*

**6A.2. Field Uniformity and TEM Mode Verification in GTEM  
1000 Cell**

Audrius Merfeldas, Darius Gailius, Darius Andriukaitis,  
Mindaugas Zilys, Dangirutis Navikas (Lithuania)

*Presenter: Audrius Merfeldas (Lithuania)*

**6A.3. Indoor Channel Modelling for SISO and Massive SIMO  
in the 60 GHz mm-Wave Band**

Baris Yuksekkaya (United Kingdom, Turkey)

*Presenter: Baris Yuksekkaya (Turkey)*

9:00–10:30

**6A.4. Design and Modeling of an Enclosed Array of Square  
Spiral Antennas for Microwave Tomography**

Milos Subotic, Nebojsa Pjevalica, Laszlo Palfi (Serbia)

*Presenter: Milos Subotic (Serbia)*

**6A.5. Characterization of Three-Dimensional Rough Fractal  
Surfaces from Backscattered Radar Data**

Georgios Konstantinos Pouraimis, Apostolos Dimitrios  
Kotopoulos, Evangelos Dimitrios Kallitsis, Panayiotis Vassilios  
Frangos (Greece)

*Presenter: Panayiotis Vassilios Frangos (Greece)*

**6A.6. Low-Complexity Spectral Partitioning Based MUSIC  
Algorithm for Automotive Radar**

Sangdong Kim, Bongseok Kim, Yeonghwan Ju, Jonghun Lee  
(South Korea)

*Presenter: Sangdong Kim (South Korea)*

10:30–11:00

COFFEE BREAK

**SESSION 7A / TELECOMMUNICATIONS ENGINEERING**

**Chair: Stefan R. Panic (Serbia)**

11:00–12:30

**7A.1. A New Game for Future Wi-Fi Spectrum Sharing**

Tomas Cuzanauskas, Yoram Haddad (Lithuania, Israel)

*Presenter: Yoram Haddad (Israel)*



**7A.2. Investigation of Narrow-Band Power-Line Carrier Communication System Performance in Rural Distribution Grids**

Dzemo Borovina, Aljo Mujcic, Matej Zajc, Nermin Suljanovic (Bosnia and Herzegovina, Slovenia)

*Presenter: Dzemo Borovina (Bosnia and Herzegovina)*

**7A.3. A New Cluster Head Based Dynamic Base Station Positioning for Wireless Sensor Networks**

Kadir Tohma, Yakup Kutlu, Ipek Abasikeles-Turgut (Turkey)

*Presenter: Yakup Kutlu (Turkey)*

11:00–12:30

**7A.4. Investigation of Dual-Pump FOPA Performance in a 4-Channel 40 Gbps WDM Transmission System**

Sergejs Olonkins, Vladislavs Bickovs, Toms Salgals, Vjaceslavs Bobrovs, Girts Ivanovs (Latvia)

*Presenter: Sergejs Olonkins (Latvia)*

**7A.5. Formal Specification of Spanning Tree Protocol Using ACP**

Pedro Juan Roig, Salvador Alcaraz, Katja Gilly (Spain)

*Presenter: Pedro Juan Roig Roig (Spain)*

**7A.6. On the Transmission of Colour Image over Double Generalized Gamma FSO Channel**

Milos N. Ilic, Bojan P. Princevic, Petar C. Spalevic, Stefan R. Panic, Dejan D. Drajić (Serbia)

*Presenter: Stefan R. Panic (Serbia)*

12:30–13:30

CONFERENCE LUNCH

**SESSION 8A / AUTOMATION, ROBOTICS**

*Chair: Dardan O. Klimenta (Serbia)*

**8A.1. Investigation of PID Control Model Performance in Off-Road Working Vehicle Motion Stability Control System**

Xu Miao, Wang Xin, Li Weiwei, Fu Han, Wang Shumao (China)

*Presenter: Xin Wang (China)*

13:30–15:00

**8A.2. Real Time Determination of Rechargeable Batteries' Type and the State of Charge via Cascade Correlation Neural Network**

Emel Soylu, Raif Bayır (Turkey)

*Presenter: Emel Soylu (Turkey)*

**8A.3. Trajectory Tracking Control of a Four Rotor Unmanned Aerial Vehicle Based on Continuous Sliding Mode Controller**

Abdullah Basci, Kaan Can, Kamil Orman, Adnan Derdiyok (Turkey)

*Presenter: Kaan Can (Turkey)*

**8A.4. Stable and Robust Tension Controller for Middle Section of Continuous Line**

Peter Talian, Daniela Perdukova, Pavol Fedor (Slovakia)  
*Presenter: Peter Talian (Slovakia)*

13:30–15:00

**8A.5. Amber Gemstones Sorting by Colour**

Saulius Sinkevicius, Arunas Lipnickas, Kestas Rimkus (Lithuania)  
*Presenter: Saulius Sinkevicius (Lithuania)*

**8A.6. Simultaneous Longitudinal and Lateral Flight Control Systems Design for Both Passive and Active Morphing TUAVs**

Tugrul Oktay, Sezer Coban (Turkey)  
*Presenter: Tugrul Oktay (Turkey)*

15:00–15:30

COFFEE BREAK

**SESSION 9A / ELECTRICAL ENGINEERING**

*Chair: Jaan Ojarand (Estonia)*

**9A.1. Linearization Approach for Symmetric Hysteresis Loop Modeling and Core Loss Prediction**

Nenad Slavisa Petrovic, Nebojsa Uros Pjevalica, Velibor Uros Pjevalica, Nikola Djordje Teslic (Serbia)  
*Presenter: Nebojsa Uros Pjevalica (Serbia)*

**9A.2. Maxwell-Equations Based on Mining Transient Electromagnetic Method for Coal Mine-Disaster Water Detection**

Benyu Su, Jingcun Yu, Chenxing Sheng (China)  
*Presenter: Benyu Su (China)*

15:30–17:00

**9A.3. An Experimental Approach for Understanding V-I Characteristic of Electric Arc Furnace Load**

Mustafa Seker, Arif Memmedov (Turkey)  
*Presenter: Mustafa Seker (Turkey)*

**9A.4. Optimizing the Load Curve of Electric Vehicle Battery Swapping Station**

Weiqing Sun, Yiming Tan, Lei Ye, Shunfeng Chen (China)  
*Presenter: Yiming Tan (China)*

**9A.5. Power Quality Measurement and Analysis in Electric Arc Furnace for Turkish Electricity Transmission System**

Mustafa Seker, Arif Memmedov, Rafael Huseyinov, Serdar Kockanat (Turkey)  
*Presenter: Mustafa Seker (Turkey)*

15:30–17:00	<p><b>9A.6. Two Stage Data Fusion of Acoustic, Electric and Vibration Signals for Diagnosing Faults in Induction Motors</b>  Anna Stief, James R. Ottewill, Michal Orkisz, Jerzy Baranowski (Poland)  <i>Presenter: Anna Stief (Poland)</i></p>
17:30–22:00	BUS TRIP AND CONFERENCE DINNER

## Room B

7:00–7:45 SPECIAL SESSION  
MORNING WITH YOGA

### SESSION 3B / SYSTEM ENGINEERING, COMPUTER TECHNOLOGY

*Chair: Jevgenijus Toldinas (Lithuania)*

**3B.1. Unsupervised Feature Mapping via Stacked Sparse Autoencoder for Automated Detection of Large Pulmonary Nodules in CT Images**

Anindya Gupta, Tonis Saar, Olev Martens, Yannick Le Moullec (Estonia)

*Presenter: Anindya Gupta (Estonia)*

**3B.2. Limited Carry-Propagate Multiply-Accumulate Unit Design for Reconfigurable Systems**

Ugur Cini, Gokhan Kocyigit (Turkey)

*Presenter: Gokhan Kocyigit (Turkey)*

9:00–10:30 **3B.3. Computational Resources For Mobile E-Wallet System with Observers**

Eligijus Sakalauskas, Jonas Muleravicius, Inga Timofejeva (Lithuania)

*Presenter: Jonas Muleravicius (Lithuania)*

**3B.4. A Real-time Parallel Image Processing Approach on Regular PCs with Multi-Core CPUs**

Huseyin Atasoy, Esen Yildirim, Serdar Yildirim, Yakup Kutlu (Turkey)

*Presenter: Yakup Kutlu (Turkey)*

**3B.5. An Ontology-Based Transformation Model for the Digital Forensics Domain**

Sarunas Grigaliunas, Jevgenijus Toldinas, Algimantas Venckauskas (Lithuania)

*Presenter: Sarunas Grigaliunas (Lithuania)*

9:00–10:30 **3B.6. Automatic Leaf Segmentation Using Grey Wolf Optimizer Based Neural Network**  
Saban Ozturk, Bayram Akdemir (Turkey)  
*Presenter: Saban Ozturk (Turkey)*

10:30–11:00 COFFEE BREAK

**SESSION 4B / RENEWABLE ENERGY**

**Chair: Wojciech Walendziuk (Poland)**

**4B.1. Research on an Optimized Load Model Based on Substitution Effect of Renewable Energy Generation**

Yiming Tan, Weiqing Sun, Pingliang Zeng, Heng Li (China)  
*Presenter: Yiming Tan (China)*

**4B.2. Effect of Dust Deposition on the Performance of Thin Film Solar Cell**

Mahfoud Abderrezek, Mohamed Fathi (Algeria)  
*Presenter: Mahfoud Abderrezek (Algeria)*

**4B.3. Single Phase Cascaded Inverter for Renewable Energy Supplies**

11:00–12:30 Martynas Sapurov, Algirdas Baskys, Edvardas Bielskis, Vytautas Bleizgys, Raul Rabinovici (Lithuania, Israel)  
*Presenter: Martynas Sapurov (Lithuania)*

**4B.4. Modelling Correlated Forecast Error for Wind Power in Probabilistic Load Flow**

Yu Huang, Qingshan Xu, Xianqiang Jiang, Tong Zhang, Yang Yang (China)  
*Presenter: Yu Huang (China)*

**4B.5. PV System Flyback Converter Controlled PI Control to Charge Battery under Variable Temperature and Irradiance**

Ünal Yılmaz, Ali Kırçay, Selim Borekci (Turkey)  
*Presenter: Ali Kırçay (Turkey)*

**4B.6. Stability Guaranteed and Simulation of Heliostat on Testing-Ground**

Fatah Bedaouche, Abdelouahab Hassam, Amor Gama, Mabrouk Boubezoula (Algeria)  
*Presenter: Fatah Bedaouche (Algeria)*

12:30–13:30 CONFERENCE LUNCH

## SESSION 5B / ELECTRONICS

Chair: Wlodek J. Kulesza (Sweden)

### 5B.1. Electronically Tunable Fully-Differential Fractional-Order Low-Pass Filter

Lukas Langhammer, Jan Dvorak, Roman Sotner, Jan Jerabek (Czech Republic)

*Presenter: Jan Dvorak (Czech Republic)*

### 5B.2. Comparative Study of SiC Transistors for Active Current Limitation in S3R

David Marroqui, Jorge Borrell, Roberto Gutierrez, Jose Manuel Blanes, Ausias Garrigos, Enrique Maset (Spain)

*Presenter: David Marroqui (Spain)*

### 5B.3. Single Stage Microinverter Based on Two-Switch DC-DC Flyback Converter

Edvardas Bielskis, Algirdas Baskys, Martynas Sapurov (Lithuania)

13:30–15:00

*Presenter: Edvardas Bielskis (Lithuania)*

### 5B.4. Pseudo-Differential Filter Design Using Novel Adjustable Floating Inductance Simulator with Electronically Controllable Current Conveyors

Roman Sotner, Norbert Herencsar, Jan Jerabek, Aslihan Kartci, Jaroslav Koton, Tomas Dostal (Czech Republic)

*Presenter: Roman Sotner (Czech Republic)*

### 5B.5. Power Transfer Efficiency Analysis of Magnetic Resonance Coupled System

Arturas Janeliauskas, Mindaugas Cepenas, Vytautas Markevicius, Dangirutis Navikas, Algimantas Valinevicius, Darius Andriukaitis, Mindaugas Zilys, Dainius Janulevicius (Lithuania)

*Presenter: Arturas Janeliauskas (Lithuania)*

### 5B.6. Some Aspects of Voltage Source Inverter Control

Zbigniew Rymarski, Krzysztof Bernacki, Lukasz Dyga (Poland)

*Presenter: Lukasz Dyga (Poland)*

15:00–15:30 COFFEE BREAK

## SESSION 6B / Closed Meeting

15:30–17:00

Chair: Algimantas Valinevicius, Darius Andriukaitis

Editorial Board Meeting of the Research Journal of *Elektronika ir Elektrotechnika*

17:30–22:00

BUS TRIP AND CONFERENCE DINNER



Wednesday, 21<sup>st</sup> June, 2017

Room A

7:00–7:45

SPECIAL SESSION  
MORNING WITH YOGA

SESSION 10A / ELECTRONIC MEASUREMENTS

Chair: Tomas Gomez Alvarez-Arenas (Spain)

**10A.1. Wireless Feeding Rate Real-Time Monitoring System of Combine Harvester**

Wang Yu, Wang Xin, Zhang Jiangjiang, Wang Dong, Wang Shumao (China)

*Presenter: Miao Xu (China)*

**10A.2. Metrological Properties of a Two-Output Transducer for Measuring Sum and Difference of Small Resistances**

Adam Idzkowski, Wojciech Walendziuk, Pawel Swietochowski, Zygmunt Warsza (Poland)

*Presenter: Adam Idzkowski (Poland)*

**10A.3. An Empirical Methodology for Power Analysis of CMOS Integrated Circuits**

Momcilo V. Krunic, Ivan Povazan, Jelena V. Kovacevic, Vlado M. Krunic (Serbia)

*Presenter: Momcilo Vlado Krunic (Serbia)*

**10A.4. Comparative Measurement of Cardiac Cycle by Means of Different Sensors**

Eiko Priidel, Raul Land, Veljo Sinivee, Paul Annus, Mart Min (Estonia)

*Presenter: Eiko Priidel (Estonia)*

**10A.5. Fast and Accurate Frequency Meter Using the Interpolated DFT Method**

Wojciech Oliwa, Grzegorz Wieczorek (Poland)

*Presenter: Wojciech Oliwa (Poland)*

**10A.6. Realization and Evaluation of the Device for Measuring the Impedance of Human Body for Detecting the Respiratory and Heart Rate**

Margus Metshein, Toomas Parve, Paul Annus, Marek Rist, Mart Min (Estonia)

*Presenter: Margus Metshein (Estonia)*

10:30–11:00

COFFEE BREAK

**SESSION 11A / SYSTEM ENGINEERING, COMPUTER TECHNOLOGY**

**Chair: Alexander Sudnitson (Estonia)**

**11A.1. A Converging Distributed Positioning Algorithm for Internet-of-Things**

Kazimieras Bagdonas, Nerijus Jusas, Algimantas Venckauskas (Lithuania)

*Presenter: Kazimieras Bagdonas (Lithuania)*

**11A.2. Development of V2V and GPS Based Collision Warning Algorithm for Uncontrolled Intersections**

Janeks Ahrems (Latvia)

*Presenter: Janeks Ahrems (Latvia)*

**11A.3. Fast Processing of Non-Repeated Values in Hardware**  
Iouliia Skliarova, Valery Sklyarov, Alexander Sudnitson (Portugal, Estonia)

*Presenter: Alexander Sudnitson (Estonia)*

11:00–12:30

**11A.4. Research of the Equipment Calibration Methods for Inorganic Fertilizers Particles Distribution by Size Using Indirect Measurement Methods**

Andrius Laucka, Vaida Adaskeviciute, Darius Andriukaitis, Algimantas Valinevicius (Lithuania)

*Presenter: Andrius Laucka (Lithuania)*

**11A.5. iMMAS an Industrial Meta-Model for Automation System Using OPC UA**

Jose Miguel Gutierrez Guerrero, Juan Antonio Holgado Terriza (Spain)

*Presenter: Jose Miguel Gutierrez Guerrero (Spain)*

**11A.6. A Deep Neural Network Classifier for Decoding Human Brain Activity Based on Magnetoencephalography**

Abdullah Caliskan, Mehmet Emin Yuksel, Hasan Badem, Alper Basturk (Turkey)

*Presenter: Abdullah Caliskan (Turkey)*

12:30–13:30 CONFERENCE LUNCH

13:30–14:00 ELECTRONICS 2017 CLOSING SESSION

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## Room B

7:00–7:45

**SPECIAL SESSION**  
MORNING WITH YOGA

### SESSION 7B / TELECOMMUNICATIONS ENGINEERING

Chair: Yakup Kutlu (Turkey)

#### **7B.1. Performance Analysis of Optimum Combiner in Power Limited Cognitive Radios with Multiple Primary Interferers**

Kavita Vij Bindra, Rajesh Khanna, Surbhi Sharma (India)

*Presenter: Kavita Vij Bindra (India)*

#### **7B.2. Outage Probability Analysis of Co-Tier Interference in Heterogeneous Network**

Mohammad Kamrul Hasan, Ahmad Fadzil Ismail, Wahidah Hashim, Shayla Islam, Aisha-Hassan Abdalla Hashim (Malaysia)

*Presenter: Mohammad Kamrul Hasan (Malaysia)*

#### **7B.3. Anomalous Behaviour of Cryptographic Elliptic Curves over Finite Field**

Radek Fujdiak, Petr Dzurenda, Petr Mlynek, Jiri Misurec, Milos Orgon, and Bezzateev Sergey (Czech Republic, Slovakia, Russia)

*Presenter: Radek Fujdiak (Czech Republic)*

#### **7B.4. Algebraic Specification of ABP Protocol Using Different Time Constraints**

Pedro Juan Roig, Salvador Alcaraz, Katja Gilly (Spain)

*Presenter: Pedro Juan Roig Roig (Spain)*

#### **7B.5. Quality of Service Methodology for the Development of Internet Broadband Infrastructure of Mobile Access Networks**

Alina Stafecka, Elmars Lipenbergs, Vjaceslavs Bobrovs, Tamara Sharashidze (Latvia)

*Presenter: Alina Stafecka (Latvia)*

#### **7B.6. Switched Quasi-Logarithmic Quantizer with Golomb-Rice Coding**

Nikola J. Vucic, Zoran H. Peric, Milan Dincic (Serbia)

*Presenter: Nikola J. Vucic (Serbia)*

9:00–10:30

10:30–11:00

COFFEE BREAK



**SESSION 8B / AUTOMATION, ROBOTICS**

**Chair: Xin Wang (China)**

**8B.1. Fractional PID Controller Design for Fractional Order Systems Using ABC Algorithm**

Halit Senberber, Aytekin Bagis (Turkey)

*Presenter: Halit Senberber (Turkey)*

**8B.2. Driver's Professional Skills Evaluation with Modified GPS Vehicle Tracking System**

Janis Kluga, Ansis Kluga (Latvia)

*Presenter: Janis Kluga (Latvia)*

**8B.3. Optimal Design of Lifting Platform Balance Control Algorithm: Co-Simulation and Experiment**

Wang Xin, Xu Miao, Li Weiwei, Bogdan Miedzinski, Wang Shumao (China, Poland)

11:00–12:30

*Presenter: Miao Xu (China)*

**8B.4. Downhill Speed Control of In-Wheel Motor During Regenerative Braking**

Tuncay Soylu, Raif Bayır (Turkey)

*Presenter: Tuncay Soylu (Turkey)*

**8B.5. ABC Algorithm Based PID Controller Design for Higher Order Oscillatory Systems**

Aytekin Bagis, Halit Senberber (Turkey)

*Presenter: Halit Senberber (Turkey)*

**8B.6. 3D Moving Sound Source Localization via Conventional Microphones**

Mehmet Cem Catalbas, Simon Dobrisek (Turkey, Slovenia)

*Presenter: Mehmet Cem Catalbas (Turkey)*

12:30–13:30 CONFERENCE LUNCH

13:30–14:00 ELECTRONICS 2017 CLOSING SESSION

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## **contacts**

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