

Thursday, November 10th

**8⁰⁰-9⁰⁰ Registration – Main Lobby of the Congress Centre –
B-dul V. Pârvan No.2b**

**09⁰⁰ -09²⁰ Opening Plenary Session – Auditorium
Conference Room of the Congress Centre - B-dul V. Pârvan
No.2b**

- Welcome speech - Prof. PhD. Eng. Marius Oteşteanu, Chair of ISETC22
- Welcome speech – Conf. PhD. Eng. Florin DRAGAN, Rector Politehnica University Timisoara

09²⁰ -11²⁰ Workshop Industry 4.0 **Communication Technologies & IoT – Auditorium Conference Room of the Congress Centre, - B-dul V. Pârvan No.2b**

11²⁰ -11³⁰ Break

11³⁰ -13³⁰ Workshop Industry 4.0 **Automotive Trends and Smart Manufacturing – Auditorium Conference Room of the Congress Centre, - B-dul V. Pârvan No.2b**

14⁰⁰ -16⁰⁰ **Doctor Honoris Causa Awarding Ceremony, Prof. Ph.D. Pavol Bauer, Senat HALL Room, P-ța. Victoriei no.2**

14⁰⁰ -16⁰⁰ **Parallel On-line session - Conference Room K1 of the Congress Centre, Conference Room K2 of the Congress Centre, CeL room C401, A116 Faculty of Electronics, Telecommunications and Information Technologies**

16³⁰ -18⁰⁰ **Technical meeting for AP-S and Communications Romanian Chapters, A116 – Faculty of Electronics,**

**Telecommunications and Information Technologies, Bd,
V.Parvan 2**

**16⁰⁰ -18³⁰ Parallel Afternoon sessions – Conference Room
K1 of the Congress Centre, Conference Room K2 of the
Congress Centre, CeL room 401**

**19⁰⁰-23⁰⁰ Gala Diner - Restaurant-Casa Politehnicii 2, B-dul
Eminescu No.11**

Friday, November 11th

09⁰⁰ -09⁴⁰ **Invited speaker - Prof. PhD Gabriel-Miro MUNTEAN,
School of Electronic Engineering, Dublin City University, Ireland,
**Innovative Solutions for High Quality Rich Media Content
Delivery in 5G and Beyond Networks Conference Room K1
of the Congress Centre****

**09⁴⁰ -11⁴⁰ Morning sessions – Conference Room K1 of the
Congress Centre, Conference Room K2 of the Congress
Centre, CeL room 401**

11⁴⁰ -12⁰⁰ Coffee Break

**12⁰⁰ -14³⁰ Morning sessions – Conference Room K1 of the
Congress Centre, Conference Room K2 of the Congress
Centre, CeL room 401**

Thursday, November 10th

**8⁰⁰-8⁴⁵ Registration – Main Lobby of the Library – B-dul V.
Pârvan No.2b**

**09⁰⁰ -09²⁰ Opening Session – Auditorium Conference Room
of the Congress Centre**

- Welcome speech - Conf. PhD. Eng. Florin DRAGAN, Rector of the Politehnica University Timișoara
- Welcome speech - Prof. PhD. Eng. Marius Oteșteanu, Chair of ISETC22, Politehnica University Timișoara

**09²⁰ -11²⁰ Workshop Industry 4.0 - **Communication
Technologies & IoT****

Chairmen:

Assoc.Prof.PhD.Eng. Raul IONEL – Politehnica University
Timisoara

Eng. Florin CIOCAN – NOKIA Romania

1. **09²⁰** - Sabin TOTOREAN - NOKIA Country Senior Officer,
Technology vision 2030.
2. **09⁴⁰** - Razvan MIHALI, IoT Architecture & Services Expert, and
Cristian PATACHIA - SULTANOIU, Development &
Innovation Manager, Orange Romania, **Orange Technical
Innovation Ecosystem.**
3. **10⁰⁰** - Radu MIHAESCU - COO & Member of the Board of
Directors – DELTATEL, **IoT RTLS applications in hospitals.**
4. **10²⁰** - Georgian GRIGORE – Director of Technical
Coordination Department, ANCOM, **Radio spectrum
insights from Romania's spectrum regulator agency.**

5. **10⁴⁰** - Adrian SINGHEORGHE – Chief of Research and Design Department, STS, **30 years of communications and information technology.**
6. **11⁰⁰** – Ionel PETRUT - Lasting, **5G Non terrestrial networks**

11²⁰ -11³⁰ Break

11³⁰ -13³⁰ Workshop Industry 4.0 - Automotive Trends and Smart Manufacturing

Chairmen:

Assoc.Prof.PhD.Eng. Raul IONEL – Politehnica University Timisoara

Eng. Florin CIOCAN – NOKIA Romania

1. **11³⁰** - Petru DEMIAN - Head of Plant Facility Management & Special Projects & Cristian BACICAN - Team Leader & Product Owner CONTINENTAL, **Industry 4.0 everywhere.**
2. **11⁵⁰** - Marcel Chis - Head of Pre-Development FORVIA - HELLA, **From Pre-Development to Smart Manufacturing System – Bespoke Automatic Inspection System.**
3. **12¹⁰** - Felix Reste - Manager Department Active Safety Integration VEONEER, **Future in automotive – The Autonomous Driving Cars.**
4. **12³⁰** - Radu Bunea - Head of Application Electrical Engineering Battery VITESCO - Timisoara, **Scalable architectures in Electric Vehicles products: smart development approach.**
5. **12⁵⁰** - Cristian GURKA - Engineering Director & Marius ILCA Equipment & Automation Manager – FLEX, **Smart SMT line Manufacturing using IoT devices.**

6. **13¹⁰** - Andrei BURTA - Hardware Design Engineer YAZAKI, **Applications of Boundary Scan Technology in Automotive Products Validation. Case study - from R&D to Mass Production**

14⁰⁰ -16⁰⁰ Doctor Honoris Causa Awarding Ceremony, Prof. Ph.D. Pavol Bauer, Senat HALL Room, P-ța. Victoriei no.2

14⁰⁰ -16⁰⁰ Parallel On-line session - Conference Room K1 of the Congress Centre, Conference Room K2 of the Congress Centre, CeL room C401, A116 Faculty of Electronics, Telecommunications and Information Technologies

**14⁰⁰-16⁰⁰ Afternoon On-line session 1 – K1 Conference Room of the Central Library
Instrumentation and Measurement (IM)**

Chairmen:

Assoc. PhD. Eng. Ladislau MATEKOVITS,

Prof. PhD. Eng. Aldo De SABATA,

Lecturer. PhD. Eng. Andrei SILAGHI

1. **Experimental Demonstration of a Visible Light Communications Crosswalk Assistance System**

Cătălin Beguni; Eduard Zadobrischi; Sebastian Avătămăniței; Alin Mihai Cailean

2. **Improved Dead Reckoning Localization Using IMU Sensor**

Ibrahim Toy; Akif Durdu; Abdullah Yusefi; Veysel Alver

3. The Temporal Imprint of Mobile Phone Emission Level When Running Various Applications in 4G Versus 5G Networks

Simona Miclaus; Delia Bianca Deaconescu; Andreea Maria Buda; David Vatamanu

4. A Horn Antenna Array Design for the Ku Band

Adelaida Cristina Heiman

5. Experimental Determination of the Area Coverage of a TETRA Base Station in a Dense Urban Area

Alexandru-Gabriel Romaniuc; Vlad Vasile; Monica Borda

6. Low-Cost GNSS Monitoring Station for Raw Data Measurements

Alexandru-Gabriel Romaniuc; Vlad Vasile; Monica Borda

7. Study of the New Polymer Coatings Exhibiting Hydrophobic / Hydrophilic Interactions

Daniela Ionescu; Maria Kovaci

8. Robotic Arm Control via Hand Movements

Craciun Dragos; Balaceanu Nelus; Chirita Andrei; Catalin Ciobanu

14⁰⁰-16⁰⁰ Afternoon On-line session 2 – K2 Conference

Room of the Central Library

Signal Processing (SP)

Chairmen:

Prof. PhD. Eng. Corina NAFORNITA

Prof. PhD. Eng. Romulus TEREBES

1. State of the Art Recognition of Emotions from Speech, Using a Low Complexity Solution Based on Reaction-Diffusion Transform

Radu Dogaru; Ioana Dogaru

2. Checking over the Separation Performance for Winner Take All in Subthreshold Regime

Ruxandra-Liana Costea

3. A New VLSI Algorithm for a VLSI Implementation of MDST Using Obfuscation Technique

Doru Florin Chiper; Arcadie Cracan

4. The Polyalphabetic Substitution Ciphers - a Viable Solution for IoT Applications?

Octavia Georgiana Dorobantu; Adriana Apostol;
Octaviana Datcu

5. Load Balancing Optimization in Software-Defined Wide Area Networking (SD-WAN) Using Deep Reinforcement Learning

Mohamed Ouamri; Gordana Raluca Barb; Daljeet Singh;
Florin Alexa

6. Sound Encryption Using Wavelet Transform and Composite Chaotic Function

Mircea Raducanu; Dominic Cheroiu; Corina Macovei
(Nițu)

**14⁰⁰-16⁰⁰ Afternoon [On-line session 3](#) – CEL Room 401
[Artificial Intelligence and Computer Vision \(AICV\)](#)**

Chairmen:

Assoc. PhD. Eng. Georgiana SIMION,

Prof. PhD. Eng. Cătălin CALEANU

PhD. Eng. Viorica PATRAUCEAN, Google DeepMind, UK

1. Cryptocurrency Price Prediction Using LSTM and GRU Networks

Alexandru Encean; Daniel Zinca

2. Evaluating Research Trends Using Key Term Occurrences and Multivariate Mann-Kendall Test

Christian-Daniel Curiac; Mihai V. Micea

3. Cyberloafing - A Major Influencer to Online Learning

Sadiya Rashid Shah; Suzan Alyahya

4. Exploring Educational Scenarios Through Interactive Environments and Agile User Stories: A Gamified Assessment Case Study

George Ciucă; Aurelia Ciupe; Bogdan Orza

5. Public Institutions Updated Enhanced Biometric Security, Zero Trust Architecture and Multi-Factor Authentication

Catalin Adrian Iordache; Adrian-Viorel V. Dragomir;
Constantin Viorel Marian

6. Speech Emotion Recognition Using 1D/2D Convolutional Neural Networks

Maria-Larisa Pencea; Ruxandra Tapu

7. Performances Analysis of Turbo Codes, LDPC Codes and Polar Codes Using AWGN Channel with and Without Inter Symbol Interference

Adriana Maria Cuc; Florin Lucian Morgos; Cristian Grava

14⁰⁰-16⁰⁰ Afternoon On-line session 4 – Room A116, Faculty of Electronics, Telecommunications and Information Technologies

Telecommunications (TC)

Chairmen:

Prof. PhD. Eng. Alexandru ISAR

S.L. PhD. Eng. Cornel BALINT

- 1. Combined Engineered Cells for Multiband, Wide Band, and Miniaturized Antennas**
Mohammad El Ghabzouri; Abdenacer Es Salhi; Paulo M. Mendes
- 2. Sandbox Integrated Gateway for the Discovery of Cybersecurity Vulnerabilities**
Alexandre Rekeraho; Titus C Balan; Daniel Tudor Cotfas; Petru Adrian Cotfas; Rebecca Acheampong; Cristian Musuroi
- 3. Radial Basis Functions Neural Network on Microcontrollers**
Sorin Zoican; Roxana Zoican; Dan Galatchi
- 4. Analysis of Web Traffic Using MPLS Technology**
Cristian Stanescu; Gabriel Predusca; Denisa Circiumarescu; Nicoleta Angelescu; Dan Puchianu; Cezar Dumitrache
- 5. Network Traffic Logger with Real-Time Streaming and Spoofing Capabilities**
Adrian-Tiberiu Costin; Daniel Zinca
- 6. Human Individuals' Localization Monitoring (Using Open Source Technologies)**
Mircea Cristian Stana; Constantin Viorel Marian; Nicolae Goga; Mihai Radu; Cristian Taslitchi
- 7. Analysis of Potential Threats in NextGen 5G Core**

Oana-Mihaela Dumitru-Guzu; Calin Vladeanu

16³⁰ -18⁰⁰ Technical meeting for AP&S and Communications Romanian Chapters, MULTIMEDIA 2 - Library Main Building Bd, V.Parvan 2B

16⁰⁰ -18³⁰ Parallel Afternoon sessions – Conference Room K1 of the Congress Centre, Conference Room K2 of the Congress Centre, CeL room 401

16⁰⁰ -18³⁰ Parallel Afternoon sessions – Conference Room K1 of the Congress Centre

Instrumentation and Measurement (IM)

Chairmen:

Assoc. PhD. Eng. Ladislau MATEKOVITS,

Prof. PhD. Eng. Aldo De SABATA,

Lecturer. PhD. Eng. Andrei SILAGHI

1. Using a Radio Remote Controller to Operate a Rover and Robotic Arm Combo

Roland Szabo, Radu-Stefan Ricman

2. Design of All Dielectric Frequency Selective Surfaces

Andrei Silaghi; Aldo De Sabata; Ladislau Matekovits

3. TEM Cell Measurements in Automotive EMC: A Case Study

Rares Trip; Andrei Silaghi; Adrian Buta; Aldo De Sabata

4. Real-Time Monitoring and Command System for the Cheia Space Surveillance and Tracking Radar

Ionut I. Tramandan; Alexandru Rusu Casandra

5. Evaluation of the Dynamic Performance of an USB Oscilloscope

Daniel Belega; Septimiu Mischie

6. BLE Network Sensors with IoT Capability

Septimiu Mischie; Dorian Costean

7. Normalized Cross Correlation Based Solution for Automated Optical Inspection During Boundary Scan Testing

Raul Ionel; Anca-Ioana Dărăbuț; Catalin Daniel Căleanu

8. Software Optimization Used to Automate Decellularization

Dumitru Daniel Bonciog; Valentin Laurențiu Ordodi;
Mihaela Lascu; Liliana Matiu-Iovan; Dan Cristian Ciobanu

9. Automatic Waste Segregation System

Ionut-Robert Badoi; Ioan Lie

10. A Home Energy Management System

Cristina Stolojescu-Crisan; Janos Gal

16⁰⁰ - 18³⁰ Parallel Afternoon sessions – Conference Room K2 of the Congress Centre

Open Science for PhD Students in Electronics (OSPSE)

Chairmen:

Prof. PhD. Eng. Mihai Ivanovici,

Prof. PhD. Eng. Corneliu Rusu

1. Medium Term Forecasting of Global Horizontal Solar Radiation in Brasov Using Multivariate Transformer

Manoharan Madhiarasan; Daniel Tudor Cotfas; Petru Adrian Cotfas

2. A Real-Time Warning Based on TIAGo's Audio Capabilities

Lorena Muscar; Lacrimioara Grama; Corneliu Rusu

3. Emotion Recognition Audio Database for Service Robots

Toma Telembici; Lorena Muscar; Lacrimioara Grama; Corneliu Rusu

4. An Optimal Implementation of an 8b/10b Encoder for Xilinx FPGAs

Stefan Popa; Mihai Ivanovici; Radu Mihai Coliban

5. A Kalman Filter for the Identification of Impulse Responses with Particular Symmetry Features

Ionut-Dorinel Ficiu; Laura-Maria Dogariu; Ruxandra-Liana Costea; Constantin Paleologu; Jacob Benesty; Silviu Ciochina

6. Vertical-Cavity Surface-Emitting Laser (VCSEL) Based Distance Sensing for Parking Assistance

Florin Daniel Sandru; Vlad Ilie Ungureanu; Ioan Silea

7. A Decomposition-Based RLS Algorithm for Stereophonic Acoustic Echo Cancellation

Ionut-Dorinel Ficiu; Constantin Paleologu; Jacob Benesty; Camelia Elisei-Iliescu; Cristian Stanciu; Cristian Anghel

8. Human-Computer Interaction Through Voice Commands Recognition

Horia Alexandru Rusan; Bogdan Mocanu

9. Novel Methods for Measuring the Shutter Speed of Film Cameras Using Image Processing

Elena-Valentina Dumitrașcu; Robert-Alexandru Dobre;
Radu O. Preda

10. Low Complexity Acoustic Feedback Cancellation Algorithm with Frequency Shifting and Dichotomous Coordinate Descent Iterations

Felix Albu; Henri Coanda; Dinu Coltuc

16⁰⁰ -18³⁰ Parallel Afternoon sessions – CeL room 401

Artificial Intelligence and Computer Vision (AICV)

Chairmen:

Assoc. PhD. Eng. Georgiana SIMION,
Prof. PhD. Eng. Cătălin CALEANU

1. Urban Mobility - Determining the Real Catchment Area of a Shop Based on Customer-Shop Interactions

Gabriel Papuc; Nicolae Vizireanu

2. Prediction of Machine Temperature System Failure Using Deep Learning

Marina-Adriana Mercioni; Stefan Holban

3. Outdoor Image Segmentation Based on Light Polarization Signatures

Serban Oprisescu; Radu-Mihai Coliban; Mihai Ivanovici

4. Multi-Core Time-Triggered OCBP-Based Scheduling for Mixed Criticality Periodic Task Systems

Marian Baciuc; Eugenia Capota; Cristina Stangaciu;
Christian-Daniel Curiac; Mihai V. Micea

5. Preliminary Results on Contrast Enhanced Ultrasound Video Stream Diagnosis Using Deep Neural Architectures

Krista Schmiedt; Georgiana Simion; Catalin Daniel
Caleanu

6. A Brief Overview on 3D Perception Using Deep Neural Networks for Automotive

Alexandru Raul Boglut; Catalin Daniel Caleanu

7. Grouping Farmers Using Agglomerative Clustering on Data Generated from Statistics

Georgiana Simion; Catalin Daniel Caleanu; Marian Bucos;
Bogdan Drăgulescu

8. Semantic Segmentation of Diabetic Retinopathy Imaging

Brigitte Beatrix Schweisthal; Mihaela Lascu

9. The Use of Data Augmentation as a Technique for Improving Fake News Detection in the Romanian Language

Georgiana Țucudean; Marian Bucos

10. Predictive Analytics Models for Student Admission to Master Programs in Romania

Mihai Ursan; Marian Bucos

**19⁰⁰-23⁰⁰ Gala Diner - Restaurant-Casa Politehnicii 2, B-dul
Eminescu No.11**

Friday, November 11th

09⁰⁰ -09⁴⁰ Invited speaker - Prof.PhD. Gabriel-Miro MUNTEAN, School of Electronic Engineering, Dublin City University, Ireland, **Innovative Solutions for High Quality Rich Media Content Delivery in 5G and Beyond Networks, Conference Room K1 of the Congress Centre**

09⁴⁰ -11⁰⁰ Morning sessions – **Conference Room K1 of the Congress Centre**

Telecommunications (TC)

Chairmen:

Prof. PhD. Eng. Virgil DOBROTA

Prof. PhD. Eng. Alexandru ISAR

- 1. Analysis of Vegetation and Penetration Losses in 5G mmWave Communication Systems**
Gordana Raluca Barb; Flavius Danuti; Mohamed Ouamri;
Marius Ottesteanu
- 2. Kubernetes-Based Network Functions Orchestration for 5G Core Networks with Open Source MANO**
Robert Botez; Andres-Gabriel Pasca; Virgil Dobrota
- 3. Open-Source Software-Defined Wide Area Network: An Inter-Cloud Approach**
Vladut-Vasile Coman; Virgil Dobrota
- 4. Simulation of Inverted F-Type Antenna Aarrays for Evaluation of Bluetooth Connectivity Between a wBMU and wCMUs for Electric Vehicles**
Nicolae Badulescu

5. Congestion Study of Transport Layer in DL 5G Communication Systems

Cristina Andras; Cornel Balint; Gordana Raluca Barb;
Florin Alexa

6. Performances of Uniform Sensor Array Antenna in Case of DoA Estimation Using the MUSIC Algorithm

Andy Vesa; Calin Simu

10⁰⁰ -12⁰⁰ Morning sessions – Conference Room K2 of the Congress Centre, CeL room 401

10⁰⁰ -12⁰⁰ Morning sessions – Conference Room K2 of the Congress Centre

Signal Processing (SP)

Chairmen:

Prof. PhD. Eng. Corina NAFORNITA

Prof. PhD. Eng. Romulus TEREBES

1. Unsupervised Online Vertical Misalignment Detection Algorithm for Automotive Radar

Alexandru Bobaru; Corina Nafornita; George Copacean;
Vladimir Cristian Vesa

2. Hyperspectral Image Classification Using Extended Local Binary Patterns and Wavelet Transform Descriptors

Andreia Valentina Miclea; Romulus Terebes; Mihaela Cislariu

3. Image Denoising Using the Hurst Exponent: A Fusion Based Approach

Corina Nafornita; Alexandru Isar; Ioan Nafornita

4. Reinforced Hybrid Wiener Deconvolutional Convolutional Autoencoders Based Image Deblurring

Grosu George; Romulus Terebes

5. RISC-V Based HW Accelerator

Danut Rotar; Teodor Petrita; Florin Alexa

10⁰⁰ -11⁴⁵ Morning sessions – CeL room 401

Artificial Intelligence and Computer Vision (AICV)

Chairmen:

Assoc. PhD. Eng. Georgiana SIMION,

Prof. PhD. Eng. Cătălin CALEANU

1. Preliminary Investigation of Dye-Sensitized Solar Cell for an Optoelectronic Neural Network with Zero Electric Power Consumption

Nicolae Miclau; Marinela Miclau; Daniel Ursu; Melinda Vajda

2. Urban Landmark Detection Using A-KAZE Features and Vector of Aggregated Local Descriptors

Ciprian Orhej; Lucian Radu; Muguraş Mocofan; Silviu Vert; Radu A. Vasiu

3. TV News Database Indexing System with Video Structure Analysis, Representativ Images Extractions and OCR for News Titles

Muguraş Mocofan; Benjamin Rozsa

4. Designing Applications for Collaborative Learning in Virtual Reality

Marius Tataru; Silviu Berzescu; Silviu Vert; Vlad Mihaescu; Radu Stamatoiu; Radu A. Vasiu

5. Instrumentation and Analyzis of Handover in Wi-Fi Networks

Alex-Gabriel Gherman; Marius Marcu

6. Man-Made Noise Measurement System for HF Band Based on SDR Platforms - Design and Implementation

Sorecau; Mirela Sorecau; Neculai Craiu; Annamaria Sârbu; Paul Bechet

7. Cybersecurity for Embedded Systems: A Review

Alex I. Molcuț; Septimiu Lica; Ioan Lie

11⁴⁵ -12⁰⁰ Coffee Break

12⁰⁰ -14³⁰ Morning sessions – Conference Room K2 of the Congress Centre

Power Electronics (PE)

Chairmen:

Prof. PhD. Eng. Peter van DUIJSEN

Prof. PhD. Eng. Dan LASCU

1. Digital Control Method for Power Electronics Converters Simulation: Application to a Front-End Single-Active Bridge AC/DC Converter

Cesar Augusto Slongo; Alvaro Llaría; Xavier Yang; Manuel Billaud; Octavian Curea

2. Photovoltaic Mini-Panel and Thermoelectric Generator Under Concentrated Light

Daniel Tudor Cotfas; Petru Adrian Cotfas; Alexandre Rekeraho; Manoharan Madhjarasan

- 3. A New Slight Step-Up Quadratic Boost Converter**
Ramona-Teodora Vaduva; Delia A Botila; Dan Lascu
- 4. Cubic Buck-Boost Converter with High Step-Up Capability**
Delia A Botila; Ioana M Pop-Calimanu; Dan Lascu
- 5. FPGA Based IEEE 1451 Compliant Smart Power Supply Controller**
Sergiu Iulian Zubcu; Petru Papazian; Mircea Babaita
- 6. A Step-Down Hybrid Converter with Unequal Inductor**
Ștefăniță A Albu; Ioana M Pop-Calimanu
- 7. A Novel Hybrid Quadratic Buck Converter**
Gabriela M Jude; Ioana M Pop-Calimanu
- 8. Control Method for Multiphase DC-DC Converter in Drive Train of Fuel Cell Vehicles**
Folker Renken; Wensong Shen
- 9. Distribution of Renewable Energy in Light-Rail Traction Grids**
Peter van Duijsen; Diego Zuidervliet

