



# The 2026 IEEE Conference on Advanced Topics on Measurement and simulation (ATOMS)

13-15 May 2026 | Technical University of Cluj-Napoca, George Baritiu 4, Cluj-Napoca, Romania



PROGRAM BOOK  
[atoms-conferences.org](http://atoms-conferences.org)





## WELCOME TO IEEE ATOMS 2026

ATOMS is a biennial forum for the exchange of information on research and development with a focus on models, measuring techniques and simulation tools for engineering. It also aims to bridge the gap between different areas, such as electronic engineering, communications, signal processing, and electric engineering, in terms of methods for modeling and experimental validation.

ATOMS has single-track invited oral presentations given by prominent researchers and poster sessions that facilitate valuable interaction and networking among the delegates.

We encourage you to submit leading-edge, state-of-the-art contributions in electromagnetics, radiowaves and antennas, signals and systems, communication systems, computing systems and information theory, remote sensing systems, photonics and optoelectronics, electronic technology, artificial intelligence, applications in energy and electric systems.

ATOMS 2026 is organized by Technical University of Cluj-Napoca. It is technically co-sponsored by the IEEE Romania Section, by the IEEE Romania Section – Antennas and Propagation Society / Council on RFID Joint Chapter, by the IEEE Romania Section – Communications Chapter, by the IEEE Romania Section – Geoscience, and Remote Sensing Society (GRSS), and by the Romanian Association on Antennas and Propagation (RAAP).

Welcome to Cluj-Napoca, Romania!

### Conference Co-Chairs:

Prof. Vasile Topa, Technical University of Cluj-Napoca

Prof. Tudor Palade, Technical University of Cluj-Napoca

Prof. Mihnea Udrea, National University of Science and Technology POLITEHNICA of Bucharest

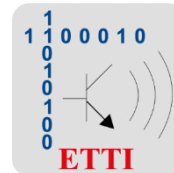
Prof. Razvan Tamas, Constanta Maritime University



**ORGANIZING AND SUPPORTING INSTITUTIONS:**



IEEE Romania Section,  
AP-S/CRFID Jt. Chapter



**CONFERENCE MAIN PARTNER:**





## USEFUL INFORMATIONS

**2026 IEEE ATOMS** is an in-person conference. Presenters are expected to be on-site to give their presentations and to interact with the audience. The conference includes:

- Keynote speaker sessions
- Invited oral sessions
- Regular sessions with oral presentations
- Exhibitions
- Social meetings, i.e., welcome reception, Gala dinner, lunches, coffee breaks

### Conference Times

All the main sessions will run from Wednesday to Friday:

- Wednesday May 13: 8:00 – 18:20
- Thursday May 14: 9:00 – 17:30
- Friday May 15: 9:00 – 17:50

Please see the full conference program for specific details. The exhibition will be open during all days of the conference.

### Conference Registration Desk

The registration desk will be available for information, help, or enquiries on all the conference days, starting at 8:00.

### Wi-Fi

Wi-Fi will be provided inside the Conference Venue.

### Food and Drink

Complimentary coffee breaks and lunches will be served in the restaurant and lobby areas.

### Official Language

The official language of the Conference is English.

### Conference badge

Please wear your conference badge, which you will receive upon arrival, at all times while at 2026 IEEE ATOMS.

### Medical Services

In the case of an emergency, injury, sudden illness, or deterioration of health, patients should either call an ambulance (112 phone number) or go directly to a hospital. At the hospital, you must present your valid European Health Insurance Card or a replacement certificate or insurance. Therefore, it is highly recommended that participants have an insurance policy covering medical expenses in Italy and elsewhere during their travel. EU citizens should carry the European Health Insurance Card.

### Personal Insurance

The meeting organizers cannot accept liability for personal injuries sustained or for loss or damage of property belonging to meeting participants, either during or as a result of the meeting. Please check the validity of your own insurance.

### Emergency service phone numbers

112 – General emergency number for all services. Dial without any area code from any phone network.

### Climate

The average temperature in Cluj-Napoca in May ranges between 5°C (night) – 20°C (day).



**Currency and currency transfers**

The official currency is the RON (lei). You can exchange foreign currency at banks (usually open Monday through Friday, from 8.30 to 14.00) and currency exchange shops.

**Time Zone**

The time zone is EEST (GMT + 3 hour).

**Electricity**

230 volt AC, 50 Hz. Outlet plugs are C/F/L. (<https://www.worldstandards.eu/electricity/plugs-and-sockets/>).

**Measurement System**

Decimal Metric System.



## VENUE

### **HUB UTCN** (@ Technical University of Cluj-Napoca)

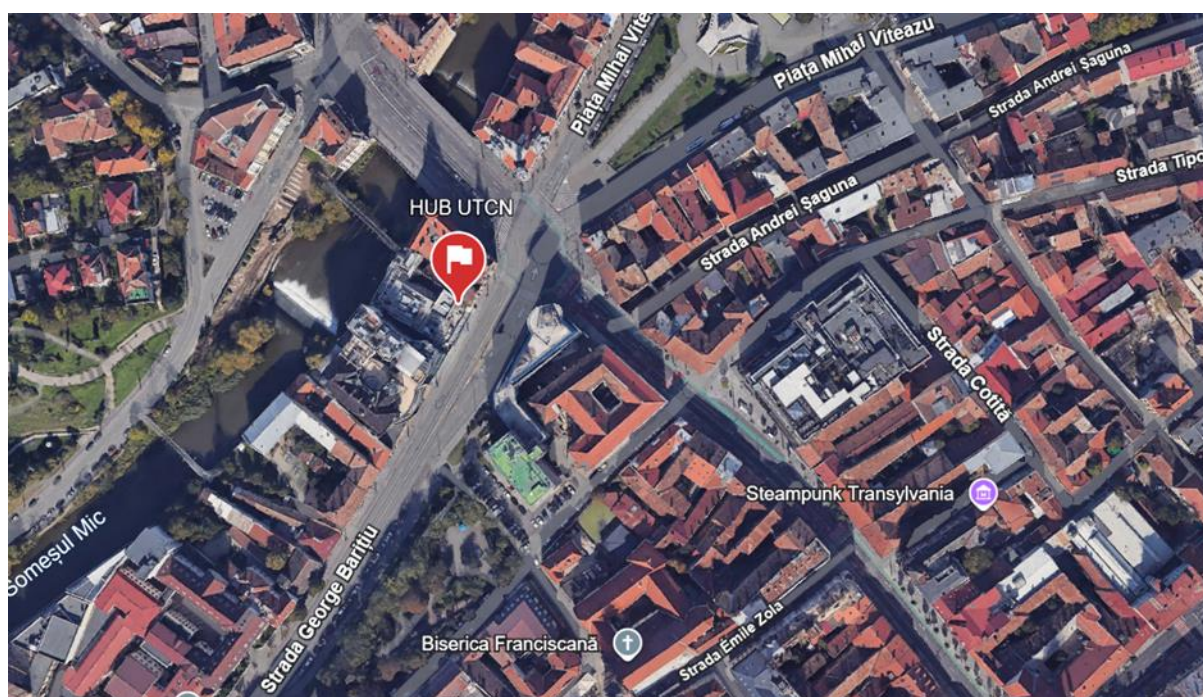
George Baritiu 4

400027 Cluj-Napoca

ROMANIA

Coordinates: 46.773559061237, 23.587458630424806

Explore the location online at <https://utcluj.digital/tur-virtual-3d-hub-utcun>



All conference activities will take place at the HUB UTCN, a modern event space within Technical University of Cluj-Napoca. Designed to host conferences, workshops, and academic gatherings, the venue offers a professional and well-equipped environment that supports both formal sessions and networking opportunities.

HUB UTCN is located in the heart of Cluj-Napoca, being highly accessible. Participants will find themselves within walking distance of some of the city's landmarks, cultural attractions, hotels and restaurants. Key points of interest such as Union Square, Church St. Michael of Cluj-Napoca, Cetatuia (panoramic viewpoint), and the Central Park are all nearby, offering opportunities to explore the city during breaks.



## Registration and Coffee breaks

Location: HUB UTCN, 3<sup>rd</sup> floor, Foyer

Registration and coffee breaks will take place in the bright foyer on the third floor of the HUB UTCN. This central area offers an inviting setting where attendees can check in, enjoy refreshments, and network between sessions, conveniently located right next to the main Conference AULA.





## Plenary session, Invited oral papers and Award ceremony

Location: HUB UTCN, 3<sup>rd</sup> floor, room A3.03/A3.04 (AULA)

The plenary sessions, invited oral presentations, and Award Ceremony will take place in the AULA on the third floor of the HUB UTCN. This spacious and well-equipped room provides an ideal environment for formal presentations, supporting engagement between speakers and the audience. Its modern facilities ensure excellent acoustics, visibility, and comfort for all participants.



## Lunch

Location: HUB UTCN, 1<sup>st</sup> floor, Cafeteria

Lunch will be served in the HUB's first-floor cafeteria, providing a comfortable and casual setting where attendees can enjoy meals while continuing conversations and networking with fellow participants.





## Poster Sessions

Location: HUB UTCN, 1<sup>st</sup> floor, Foyer

The poster sessions will be held in the bright and spacious foyer on the first floor of the HUB UTCN. This central area provides an open and inviting environment for attendees to view research displays and interact with presenters.



## Special Sessions

Location: HUB UTCN, 3<sup>rd</sup> floor, Room A 3.02 (Conference room 2)

The Special Sessions (such as project workshops) will be held in Room A3.02 (Conference Room 2) on the third floor of the HUB UTCN. This dedicated space provides a collaborative and focused environment, ideal for in-depth discussions and interactive small-group sessions.



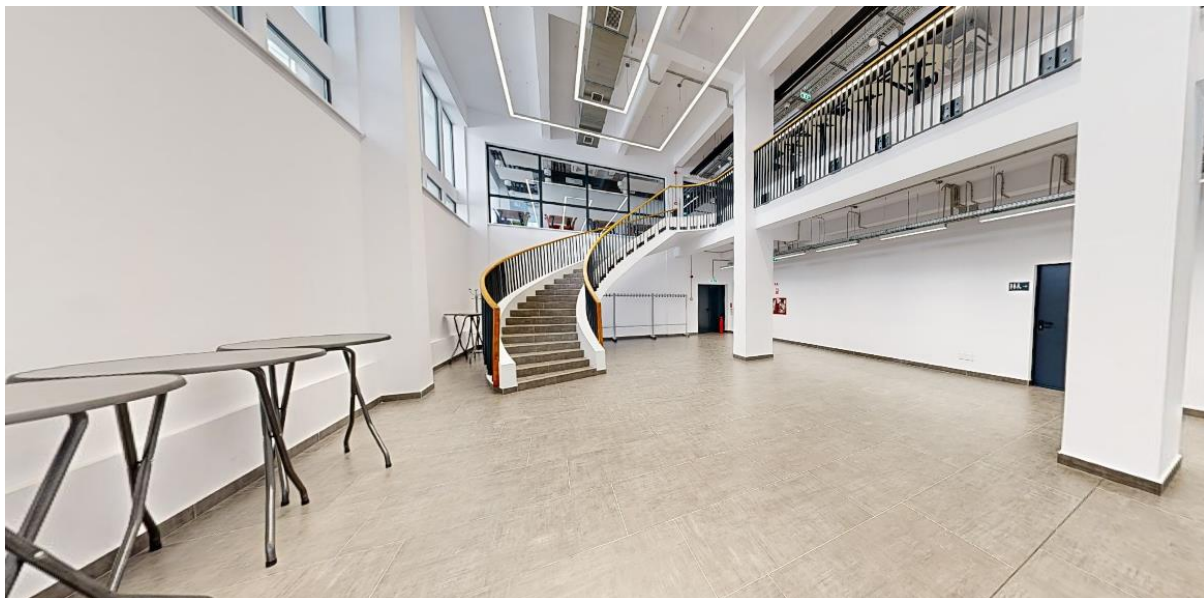


## Welcome reception and Gala dinner

Location: HUB UTCN, Ground floor

The Welcome Reception and Gala Dinner will take place on the ground floor of the HUB, in a spacious, open-concept hall. A spiral staircase leads to the upper floor, offering a unique view of the event's dynamics and an appealing setting for photos.

With tall cocktail tables and a standing setup, the space allows guests to move around and interact freely, creating a lively atmosphere that supports a more engaging social experience than a traditional seated arrangement.





## KEYNOTE SPEAKERS

### KEYNOTE LECTURE 1 – Digital Twin Integration for Lunar Exploration: European and Global Perspectives

*Speaker: Ing. Laurentiu Nicolae - Payload Lead at the European Space Agency (ESA), based at ESTEC in the Netherlands, within the Moon Exploration group*



Laurentiu Nicolae is a Payload Lead at the European Space Agency (ESA), based at ESTEC in the Netherlands, within the Moon Exploration group. He holds a degree in Avionics and Aerospace Navigation from Politehnica University of Bucharest and has over nine years of experience in the space sector. Currently, he is involved in the development of multiple lunar payloads and systems. His work includes supporting verification, integration, and operations preparation for the PROSPECT project; contributing to the guidance, navigation, and control subsystem for the Argonaut Moon lander; leading payload development for the MAGPIE Moon rover; and serving as Technical Officer for the Moon UWB project on behalf of ESA.

### KEYNOTE LECTURE 2 – Modal control and advanced manufacturing: The future of antenna design

*Speaker: Prof. Ala Sharaiha, University of Rennes, France, Co-Head of the small Antennas team in Microwave Devices Department, IETR Research Laboratory (Institut d'Electronique et des Technologies du numéRique)*



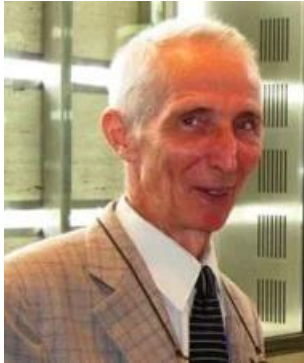
Ala Sharaiha (Senior Member, IEEE) received the Ph.D. and Habilitation à Diriger la Recherche (HDR) degrees in telecommunication from the University of Rennes 1, France, in 1990 and 2001 respectively. Currently, he is a Full Professor at the University of Rennes and he Co-Head of the small Antennas team in Microwave Devices Department, IETR Research Laboratory (Institut d'Electronique et des Technologies du numéRique). He has graduated/mentored more than 45 Ph.D. students/postdocs and co-authored with them. He has authored or co-authored more than 550 journal and conference papers, concerning antenna theory, analysis, design and measurements. He holds 15 patents. His published works have been cited over 2500 times in Google Scholar. His current research interests include small antennas, broadband and UWB antennas, reconfigurable antennas, printed spiral and helical antennas, absorbers, innovative materials for antennas and antennas for mobile communications. He was the French delegate member of the European Association on Antennas and Propagation (EuRAAP) until January 2024 and is a member of the small antennas working group of EuRAAP. He is a senior member of the IEEE and of URSI and a reviewer for the IEEE APS, IEEE AWPL, the IET Letters and the IET Microwave Antennas Propagation. He was the conference Chairman of the 11th International Canadian Conference



ANTEM (Antenna Technology and Applied Electro- Magnetics), held at Saint-Malo in France, 2005 as well as the 20th JNM (Journée National Microonde) in 2017.

### **KEYNOTE LECTURE 3 – Best of both worlds - IGBTs and MOSFETs – A Refresher for Power Electronics**

*Speaker: Prof. Gheorghe Brezeanu, National University of Science and Technology Politehnica of Bucharest, Romania*



Gheorghe Brezeanu (Life Member, IEEE) received the M.Sc. and Ph.D. degrees in electronic engineering from the Electronics and Telecommunications Faculty of the University “Politehnica” of Bucharest, Romania, in 1972 and 1981, respectively. He has been with the same Faculty since 1972, focusing on the development of semiconductor devices and integrated circuits. In 1992 he became a full Professor at the Department of Electronics Architecture, Circuits and Devices, within the Electronic and Telecommunications Faculty, teaching “Electronic Devices”, “Basic Electronic Circuits” and “Low-Power, Low-Voltage Analog ICs”. He was Scientific Chairman of the Faculty between 1996 and 2012 and has been Director of the Ph.D.

School between 1996 and 2012. He is also Head of the Microsystems Master Program. His main area of research includes physics, modelling and fabrication of power and sensor devices on Si and SiC, and design and electrical characterization of low power analog ICs. He founded the Advanced Study Semiconductor Devices and Circuits Laboratory in 1995. This group was focused on research activities regarding design, fabrication and modelling of silicon carbide and diamond devices for sensors and power applications. He is the author or co-author of 19 books and more than 210 papers published in technical WOS journals and WOS and IEEE conference proceedings. He also holds 5 patents. Prof. Brezeanu was Chairman of the Electron Devices Society Romania Chapter from 1996 to 2008. He is a life member of the IEEE Electron Devices Society.

### **KEYNOTE LECTURE 4 – Electrochemically Engineered Smart Oxide Layers on $\beta$ -Ti Alloys for advanced/future applications**

*Speaker: Prof. Ildiko PETER, George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures, Romania*



Ildiko Peter is Full Professor in the Department of Industrial Engineering and Management, University of Medicine, Pharmacy, Science and Technology “George Emil Palade” Targu Mures, Romania. She has received the M.S. degree in Biochemistry and has obtained her PhD degree in Material Science and Engineering from Università degli Studi di Torino and Politecnico di Torino, Italy, respectively. Ildiko Peter’s research activity is highly interdisciplinary oriented to the development and characterization of different metallic alloys for automotive/aeronautical industries and biomedical applications, the development, optimization and characterization of thin and thick coatings on metallic substrates,



the study of metal based alloy nanoparticles for oxygen reduction reaction, the development and characterization of metals containing humidity sensors for environmental monitoring, the synthesis and characterization of materials for advanced electromagnetic applications, synthesis and characterization of piezoelectric ceramic materials. She has 160+ publications and is co-inventor of 2 granted patents. She has been a Visiting Researcher at Macquarie University, Sydney, NSW, Australia (2010), CSIRO, Sydney Australia (2011) Visiting Professor at the Università Piemonte Orientale, Italy (2023). She has participated in various European and National projects. She is acting as reviewer for several Journals and in the period of 2015-2022 she serves as Associated Editor of the IEEE Access. She serves as Research Grant Assessor for government funding calls in Romania.



## COMMITTEES

### GENERAL CHAIRS

Prof. Vasile Topa, Technical University of Cluj-Napoca  
Prof. Tudor Palade, Technical University of Cluj-Napoca  
Prof. Mihnea Udrea, National University of Science and Technology POLITEHNICA of Bucharest  
Prof. Razvan Tamas, Constanta Maritime University

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Dr. Rodica Constantinescu, National University of Science and Technology POLITEHNICA of Bucharest  
Dr. Ionica Cristea, Romanian Association on Antennas and Propagation

### PUBLICATION CHAIR

Dr. Cristina-Adelaida Heiman, Constanta Maritime University

### LOCAL ORGANIZING COMMITTEE CHAIR

Prof. Emanuel Puschita – Technical University of Cluj-Napoca

### CONFERENCE TREASURER

Dr. Andreea Constantin, Romanian Association on Antennas and Propagation

### WEBMASTER

Marius Pastorcici, Constanta Maritime University

### SCIENTIFIC AND TECHNICAL PROGRAM COMMITTEE MEMBERS

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Prof. Gheorghe Lazaroiu – National University of Science of Technology Politehnica Bucharest  
Prof. Cornel Panait – Constanta Maritime University  
Prof. Razvan Tamas – Constanta Maritime University, IEEE Romania Section AP-S/CRFID Jt. Chapter Honorary Chair, President of the Romanian Association on Antennas and Propagation



Prof. Tudor Palade – Technical University of Cluj-Napoca, IEEE Romania Section AP-S/CRFID Jt. Chapter Chair  
Prof. Florin Alexa – University Politehnica of Timisoara, IEEE Romania Section CommSoc Chapter Chair  
Prof. Andrei Anghel – National University of Science of Technology Politehnica Bucharest, IEEE Romania Section, Geoscience and Remote Sensing Chapter Chair  
Prof. Gheorghe Brezeanu – National University of Science of Technology Politehnica Bucharest  
Prof. Ladislau Matekovits – Politecnico di Torino, Italy  
Prof. Ala Sharaiha, University of Rennes, France  
Prof. Nikolay Atanasov, Neofit Rilski University, Bulgaria  
Dr. Songyang Zhang, University of Louisiana at Lafayette, USA  
Dr. Farouk Zouari, National Engineering School of Tunis (ENIT), Tunisia  
Dr. Ionica Cristea – Constanta Maritime University  
Dr. Ramona-Voichita Galatus – Technical University of Cluj-Napoca  
Prof. Bogdan Ion, Technical University “Gheorghe Asachi”, Iași  
Cristian Patachia – Orange Romania  
Dr. Ciprian Comsa – Technical University “Gheorghe Asachi”, Iași  
Dr. Remus Cacoveanu – EOS Electronic Systems  
Dr. Marian Vladescu – National University of Science of Technology Politehnica Bucharest  
Prof. Constantin Paleologu – National University of Science of Technology Politehnica Bucharest  
Prof. Simona Halunga – National University of Science of Technology Politehnica Bucharest  
Prof. Octavian Fratu – National University of Science of Technology Politehnica Bucharest  
Dr. Bogdan Florea – National University of Science of Technology Politehnica Bucharest  
Dr. Bogdan Alexandrescu – National University of Science of Technology Politehnica Bucharest  
Dr. Cosmin Danisor – National University of Science of Technology Politehnica Bucharest  
Prof. Ioan Nicolaescu, Military Technical Academy “Ferdinand I”  
Dr. Teodor Petrita – University Politehnica of Timisoara  
Dr. Habil. Aurelian Popescu, National Institute of R&D for Optoelectronics INOE 2000  
Prof. Emanuel Puschita – Technical University of Cluj-Napoca  
Dr. Andra Pastrav – Technical University of Cluj-Napoca  
Dr. Cristian Codau – Technical University of Cluj-Napoca  
Dr. Rares Buta – Technical University of Cluj-Napoca  
Dr. Andreea Constantin – Constanta Maritime University  
Dr. Adelaida Heiman – Constanta Maritime University

LOCAL ORGANIZING COMMITTEE

Dr. Andra Pastrav – Technical University of Cluj-Napoca  
Dr. Cristian Codau – Technical University of Cluj-Napoca  
Dr. Rares Buta – Technical University of Cluj-Napoca  
Drd.Cristina Bosoc – Constanta Maritime University  
Drd. Roxana Andronic – Constanta Maritime University



## PRESENTATION RULES

2026 IEEE ATOMS is an in-person conference. Presenters are expected to be on-site to give their presentations and to interact with the audience. Authors that cannot attend in person are encouraged to arrange for a substitute.

- The overall time slot for each presentation is 20 minutes for both regular and special sessions. Plan your speech for a duration of 15 minutes to allow time for questions and discussion. Such a schedule will be rigorously enforced by the Chairs; we kindly ask for your understanding and cooperation in keeping the session schedule.
- Be in the room of your session 15 minutes before the session starts, so that you can meet your session chairs and the other speakers in advance.
- A video projector and a PC will be available in each conference room, equipped with Microsoft Windows, Microsoft PowerPoint 2019 and Adobe Acrobat. Speakers are not allowed to use their computers for presentations.
- The accepted file formats are Microsoft PowerPoint or Adobe PDF. Please make sure that your presentation contains all the fonts and any auxiliary or multimedia files needed. If you are generating an Adobe PDF file of your presentation, please make sure that you embed all fonts.
- Please bring your presentation on a USB memory stick and upload it in the Session Room in advance, possibly during the preceding coffee/lunch breaks and in any case no later than 15 minutes before the session start time.
- Please test your presentation with the PC of the Session Room before your session starts, especially in case it contains multimedia (audio and video) material.



## TECHNICAL PROGRAM

Wednesday, May 13			
Time	Invited Oral Papers	Open Submission Papers	Plenary Session
08:00-09:00	<i>Registration</i>		
09:00-09:40	<i>Opening ceremony</i>		
09:40-10:00	<i>Orange speech intro</i>		
10:00-11:30			W1key: <i>Keynote</i>
11:30-12:00	<i>Coffee break</i>		
12:00-13:40	W1Inv: <i>Electromagnetics, radiowaves and antennas</i>		
13:40-15:10	<i>Lunch</i>		
15:10-16:10	W2Inv: <i>Remote sensing systems and image processing</i>		
16:10-16:40	<i>Coffee break</i>	W1Int: <i>Applied electronics, photonics, telecommunications, energy and electric</i>	
16:40-18:20	W3Inv: <i>Space applications</i>		
19:30-22:00	<i>Welcome Reception</i>		

Thursday, May 14			
Time	Invited Oral Papers	Open Submission Papers	Plenary Session
08:30-09:00			T1key: <i>Keynote</i>
09:00-10:40	T1Inv: <i>Photonics and Optoelectronics</i>		
10:40-11:10	<i>Coffee break</i>		
11:10-13:10	T1Spec: <i>Special Session - Beyond 5G connectivity: 6G for a secure and intelligent future (1)</i>		
13:10-14:40	<i>Lunch</i>		
14:40-15:40	T1Spec: <i>Special Session - Beyond 5G connectivity: 6G for a secure and intelligent future (2)</i>		
15:40-16:10	<i>Coffee break</i>	T1Int: <i>Artificial intelligence. Computing systems and information</i>	
16:10-17:30	T2Inv: <i>Applied microelectronics</i>		



		<i>theory</i>	
20:00-22:00	<i>Gala dinner</i>		

Friday, May 15			
Time	Invited Oral Papers	Open Submission Papers	Plenary Session
09:00-11:00	F1Inv: <i>Artificial intelligence. Computing systems and information theory</i>		
11:00-11:30	<i>Coffee break</i>		
11:30-13:10	F2Inv: <i>Signals and systems. Communications (1)</i>		
13:10-14:40	<i>Lunch</i>		
14:40-15:40	F2Inv: <i>Signals and systems. Communications (2)</i>		
15:40-16:10	<i>Coffee break</i>		
16:10-17:50	F3Inv: <i>Applied R&amp;D results</i>	F2Spec: <i>Special Session - Energies (MAREHC project workshop)</i>	



## Wednesday, May 13

Wednesday, May 13 8:00 - 09:00

REGISTRATION – 3<sup>rd</sup> floor, Foyer

Wednesday, Mai 13 9:00 - 09:40

**OPENING** - Room A3.03/A3.04 (AULA), 3<sup>rd</sup> floor

Prof. Vasile Topa, Technical University of Cluj-Napoca

Prof. Florin Oniga, Technical University of Cluj-Napoca

Prof. Grigore Stamatescu – Chair of the IEEE Romania Section, National University of Science and Technology Politehnica of Bucharest

Prof. Tudor Palade, Technical University of Cluj-Napoca

Prof. Mihnea Udrea, National University of Science and Technology POLITEHNICA of Bucharest

Prof. Razvan Tamas, Constanta Maritime University

Wednesday, Mai 13 9:40 – 10:00

**ORANGE SPEECH INTRO** - Room A3.03/A3.04 (AULA), 3<sup>rd</sup> floor

Cristian Patachia - Sultanoiu (Orange Romania SA)

Razvan Mihai (University Politehnica of Bucharest & Orange Romania, Romania)

Wednesday, May 13 10:00 - 11:30

**W1key: KEYNOTE**

ROOM – A3.03/A3.04 (AULA), 3<sup>rd</sup> floor

*Chairs: Ovidiu Pop, Technical University of Cluj-Napoca and Mihnea Udrea, National University of Science and Technology POLITEHNICA of Bucharest*

**10:00 Digital Twin Integration for Lunar Exploration: European and Global Perspectives**

Laurentiu Nicolae (Payload Lead at the European Space Agency (ESA), based at ESTEC in the Netherlands, within the Moon Exploration group)

**10:30 Modal control and advanced manufacturing: The future of antenna design**

Ala Sharaiha (University of Rennes, France, Co-Head of the small Antennas team in Microwave Devices Department, IETR Research Laboratory)

**11:00 Best of both worlds - IGBTs and MOSFETs – A Refresher for Power Electronics**

Gheorghe Brezeanu (National University of Science and Technology Politehnica of Bucharest, Romania)

Wednesday, May 13 11:30 - 12:00

COFFEE BREAK – 3<sup>rd</sup> floor, Foyer



**Wednesday, May 13 12:00 - 13:40**

**W1Inv: ELECTROMAGNETICS, RADIOWAVES AND ANTENNAS**

ROOM – A3.03/A3.04 (AULA), 3rd floor

*Chairs: Tudor P. Palade (Technical University of Cluj-Napoca, Romania) and Razvan D. Tamas (Constanta Maritime University, Romania)*

**12:00 Characterisation of Underground-to-Aboveground and Underground-to-Underground Radio Channels for Reliable Communication in Precision Agriculture**

Nikolay T Atanasov (South-West University Neofit Rilski, Bulgaria); Blagovest Nikolaev Atanasov (South-West University Neofit Rilski, Bulgaria); Gabriela Atanasova (South-West University Neofit Rilski, Bulgaria)

**12:20 Long-Term Statistical Analysis for Passive Antenna State Assessment in Radio Monitoring Stations**

Teodor Petrita (Politehnica University of Timisoara & ANCOM, Romania); Rares Dobre-Baron (UPT, Romania)

**12:40 Surrogate Modeling Framework for Cost-Effective and Efficient Design of Dielectric Resonator Antennas in Wireless Communication Systems**

Sumer Singh Singhwal (Politecnico di Torino, Italy); Ladislau Matekovits (Politecnico di Torino, Italy); Ildiko Peter (George Emil Palade University, Targu-Mures, Romania)

**13:00 Two-Stage Quantum Annealing for Sidelobe Suppression in 2-Bit Quantized Phased Arrays**

Michitaka Ameya (AIST, Japan); Yuto Kato (National Institute of Advanced Industrial Science and Technology, Japan)

**13:20 A Fan-Shaped Ultra-Wideband Antenna for Short Range Communications**

Manea Alina (University Politehnica of Bucharest, Romania); Andreea Constantin (Constanta Maritime University, Romania); Razvan D. Tamas (Constanta Maritime University, Romania); Ovidiu Ratiu (Control Data System, Romania)

**Wednesday, May 13 13:40 - 15:10**

LUNCH – Cafeteria, 1<sup>st</sup> floor

**Wednesday, May 13 15:10 - 16:10**

**W2Inv: REMOTE SENSING SYSTEMS**

ROOM – A3.03/A3.04 (AULA), 3rd floor

*Chairs: Remus Cacoveanu (National University of Science and Technology Politehnica of Bucharest, Romania) and Andreea Constantin (Constanta Maritime University, Romania)*



**15:10 DVB-T Opportunistic Bistatic Radar Experiment Using a PXIe Receiver Platform**

Andrei Anghel (National University of Science and Technology POLITEHNICA Bucharest / EOS Electronic Systems, Romania); Remus Cacoveanu (National University of Science and Technology POLITEHNICA Bucharest / EOS Electronic Systems, Romania); Madalin Frunzete (National University of Science and Technology POLITEHNICA Bucharest / National Radio Communications Company (Radiocom), Romania)

**15:30 Comparative Analysis of 12 GHz Antenna Models in Bistatic Heartbeat Detection Configuration Using S21 Phase Measurements**

David Vatamanu ("Doctoral School, Technical University of Cluj-Napoca, Romania, Romania); Andra E. Zainea (National University of Science and Technology Politehnica Bucharest, Romania); Simona Miclaus (Nicolae Balcescu Land Forces Academy, Sibiu, Romania)

**15:50 Design and Experimental Validation of a Low-Cost Platform for Solar Irradiance Monitoring and Intermittency Analysis**

Vladimir Voicu (Technical University of Cluj-Napoca, Romania); Dorin Petreus (Technical University of Cluj-Napoca, Romania); Andras Nyakas (Technical University of Cluj-Napoca, Romania)

**Wednesday, May 13 16:10 - 16:40**

COFFEE BREAK – 3rd floor, Foyer

**Wednesday, May 13 16:10 - 18:20**

**W1Int: APPLIED ELECTRONICS, PHOTONICS, AND TELECOMMUNICATIONS. ENERGY AND ELECTRIC SYSTEMS**

ROOM – 1st floor, Foyer

*Chairs: Andra Pastrav (Technical University of Cluj-Napoca, Romania) and Rares Buta (Technical University of Cluj-Napoca, Romania)*

**W1Int\_01 – Motion-Based Calibration of MEMS Gyroscope**

Ionut-Dragos Roman (Technical University of Cluj-Napoca, Romania); Petru Dobra (Technical University of Cluj-Napoca, Romania)

**W1Int\_02 – Determining the Slope of a Received Signal Using Second Order Oscillating Systems**

Alexandru Toma (Honeywell Inc, Romania)

**W1Int\_03 – Enhancing the Reliability of Vehicular Communications Using Software-Defined Radio Techniques and Forward Error Correction**

Bozomitu Radu Gabriel (Technical University of Iasi, Romania); Ştefan Corneliu Stoica ("Gheorghe Asachi" Technical University of Iasi, Romania)



***W1Int\_04 – Development of an Independent Polarimetric Payload Module for Terrain Analysis Using UAV Platforms***

Petrescu Andrada (Technical University of Cluj-Napoca, Romania); Serban Meza (Technical University Cluj-Napoca, Romania); Mihaela Gordan (Technical University of Cluj-Napoca, Romania)

***W1Int\_05 – Experimental Performance Evaluation of a Fully Virtualized Open-Source 5G Network Using srsRAN***

Carmen Iazmina Cojocaru (Politehnica University Timisoara, Romania); Gordana Raluca Barb (University Politehnica Timisoara, Romania); Florin Alexa (Politehnica University Timisoara, Romania)

***W1Int\_06 – Real-Time Modulation Classification for Radio Signal Using Spectrograms with YOLOv8***

Tania Vlad (Politehnica University Timisoara, Romania); Teodor Petrita (Politehnica University of Timisoara & ANCOM, Romania); Florin Alexa (Politehnica University Timisoara, Romania)

***W1Int\_07 – Measurements on the Energy Consumption of a 5G NSA Cellular Radio Infrastructure***

Gordana Raluca Barb (University Politehnica Timisoara, Romania); Florin Alexa (Politehnica University Timisoara, Romania); Iosif Kalmar (Politehnica University Timisoara, Romania); Youssef Badra (INSA Lyon, France); Razvan Stanica (INSA Lyon, France)

***W1Int\_08 – Cellular Network Radio Coverage Measurements and Visualization: A User Equipment-Based Approach***

Ramazan Aydoğın (Gaziantep University, Turkey); Blagovest Nikolaev Atanasov (South-West University Neofit Rilski, Bulgaria); Onur Gökgöz (Gaziantep University, Turkey); Gabriela Atanasova (South-West University Neofit Rilski, Bulgaria)

***W1Int\_09 – Preliminary Design and Implementation of a Low-Cost System for Radio Signal Direction Finding***

Robert-Marian Papa ("Nicolae Balcescu" Land Forces Academy, Romania); Raul-Petru Plic (Technical University of Cluj-Napoca, Romania); Ioana-Claudia Enache (Technical University of Cluj-Napoca, Romania); Annamaria Sârbu (Land Forces Academy Nicolae Bălcescu Sibiu, Romania)

***W1Int\_10 – A Compact X-Band Horn-Fed Reflectarray Antenna***

Andronic Roxana (Constanta Maritime University, Romania); Adelaida Heiman (Constanta Maritime University, Romania); Andreea Constantin (Constanta Maritime University, Romania); Cristina Sabina Bosoc (Maritime University of Constanta & Politehnica University of Bucharest, Romania); Marius Pastorcici (Constanta Maritime University, Romania); Razvan D. Tamas (Constanta Maritime University, Romania)

***W1Int\_11 – An X-Band Bi-Directional Metamaterial-Horn Antenna***

Nicolae Piticas (Constanta Maritime University, Romania); Andronic Roxana (Constanta Maritime University, Romania); Adelaida Heiman (Constanta Maritime University, Romania); Razvan D. Tamas (Constanta Maritime University, Romania)



**W1Int\_12 – Perceptions on Energy Labels in Household Appliances: An Exploratory Study of Romanian Consumers**

Anca Constantinescu-Dobra (Technical University of Cluj-Napoca, Romania); Vasile Alin Filimon (Technical University of Cluj-Napoca, Romania)

**W1Int\_13 – Energy Efficiency in Focus: Divergent Consumer Perceptions of Home Appliances in Romania and Spain**

Anca Constantinescu-Dobra (Technical University of Cluj-Napoca, Romania); Vasile Alin Filimon (Technical University of Cluj-Napoca, Romania)

**W1Int\_14 – The Influence of Temperature and State-of-Charge on Calendar Aging in LFP and NMC EV Batteries**

Maria Cristea (Technical University of Cluj-Napoca, Romania); Ciprian Cristea (Technical University of Cluj-Napoca, Romania); Daniela-Florentina Niste (Technical University of Cluj-Napoca, Romania); Radu-Adrian Tirnovan (Technical University of Cluj-Napoca, Romania)

**W1Int\_15 – Technical Assessment of Power Purchase Agreements for Residential Storage System**

Denisa-Violeta Pîslaru (University Politehnica of Bucharest, Romania); George Cristian Lazaroiu (University Politehnica of Bucharest, Romania); Ionut Ciobanu (University Politehnica of Bucharest, Romania)

**W1Int\_16 – The Energy Transition of Residential Building Toward Nearly Zero Energy**

Ionut Ciobanu (University Politehnica of Bucharest, Romania); Denisa-Violeta Pîslaru (University Politehnica of Bucharest, Romania); George Cristian Lazaroiu (University Politehnica of Bucharest, Romania)

**W1Int\_17 – Notions About the Energy Efficiency of a Ship**

Violeta Vali Ciucur (Constanta Maritime University)

**Wednesday, May 13 16:40 - 18:20**

**W3Inv: Space applications**

ROOM – A3.03/A3.04 (AULA), 3rd floor

*Chairs: Ovidiu Ratiu (Control Data System, Romania) and Prof. Radu G Danescu (Technical University of Cluj-Napoca, Romania)*

**16:40 Numerical Simulations of a Helicon Plasma Thruster for VLEO Applications**

Vlad Stefan Buzetelu (COMOTI, Romania)

**17:00 Design and Implementation of a Low-Cost Portable Observation Station for LEO Satellite Detection and Tracking**

Ana Rednic (Technical University of Cluj-Napoca, Romania); Radu G Danescu (Technical University of Cluj-Napoca, Romania); Ovidiu Ratiu (Control Data System, Romania); Iustinian Şerban (Control Data Systems, Romania); Zsombor Somai (Control Data Systems, Romania); Flaviu Chitulea (Control Data Systems, Romania)



**17:20 A Low-Cost GNSS-Synchronized Timestamping and Observation Control System**

Iustinian Șerban (Control Data Systems, Romania); Ana Rednic (Technical University of Cluj-Napoca, Romania); Ovidiu Ratiu (Control Data System, Romania); Radu G Danescu (Technical University of Cluj-Napoca, Romania)

**17:40 Design and Implementation of a Low-Cost SDR-Based Reception System for SST**

Ana-Maria Bărbuleț (Technical University of Cluj-Napoca, Romania); Andra Pastrav (Technical University of Cluj-Napoca, Romania); Paul N. Dolea (Technical University of Cluj-Napoca, Romania)

**18:00 Improving Object Detection Accuracy Through Image Enhancement Methods in Low Contrast Space Surveillance Images**

Attila Füzés (Technical University of Cluj-Napoca, Romania); Razvan Itu (Technical University of Cluj-Napoca, Romania); Radu G Danescu (Technical University of Cluj-Napoca, Romania)

**Wednesday, May 13 19:30 - 22:00**

WELCOME RECEPTION – Ground floor

**Thursday, May 14 08:30 - 09:00**

**T1key: KEYNOTE**

**ROOM – A3.03/A3.04 (AULA), 3rd floor**

*Chairs: Tudor P. Palade (Technical University of Cluj-Napoca, Romania) and Razvan D. Tamas (Constanta Maritime University, Romania)*

**08:30 Electrochemically Engineered Smart Oxide Layers on  $\beta$ -Ti Alloys for advanced/future applications**

Ildiko Peter (George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures, Romania)

**Thursday, May 14 9:00 - 10:40**

**T1Inv: PHOTONICS AND OPTOELECTRONICS**

**ROOM – A3.03/A3.04 (AULA), 3rd floor**

*Chairs: Ramona Galatus (Technical University of Cluj-Napoca, Romania) and Ionica Cristea (Romanian Association on Antennas and Propagation, Romania)*

**9:00 Photonics as Enabling Technology for Telecommunications, Sensing, Biomedical, Quantum Devices and Systems**

Christos Riziotis (National Hellenic Research Foundation, Greece)



**9:20 *Experimental Evaluation of Loudspeaker Frequency Response Using Fiber Bragg Grating Sensing***

Ramona V. Galatus (Technical University of Cluj-Napoca, Romania); Bornea Ci Andra (Technical University of Cluj-Napoca, Romania); Nechita OV Melisa (Technical University of Cluj-Napoca, Romania); Grigore Cr Alesia (Technical University of Cluj-Napoca, Romania); Ovidiu Buza (Technical University of Cluj-Napoca, Romania)

**9:40 *Goertzel-Based Multi-Wavelength PPG for Non-Invasive Blood Glucose Estimation***

Iancu Ionuț (Technical University of Cluj-Napoca, Romania); George Mois (Technical University of Cluj-Napoca, Romania); Ovidiu Pop (Technical University Cluj Napoca, Romania); Silviu C Folea (Technical University of Cluj-Napoca, Romania)

**10:00 *Comparison of Manual and Semi-Automatic Gain and Noise Figure Characterization in EDFAs***

Gokhan Sahin (Dumlupinar University, Turkey); Ahmet Altuncu (Afyon Kocatepe University, Turkey); Firat Ertac Durak (Dumlupinar University, Turkey)

**10:20 *Model-Assisted Inverse Retrieval of Diffractive Grating Phase Depth from Diffraction Efficiency Measurements***

Alexei Meshalkin (Moldova State University, Moldova); Elena Achimova (Moldova State University, Moldova); Vladimir Abaskin (Moldova State University, Moldova); Cazac Veronica (Moldova State University, Moldova); Losmanschii Constantin (Moldova State University, Moldova); Botnari Vladislav (Moldova State University, Moldova)

**Thursday, May 14 10:40 - 11:10**

COFFEE BREAK – 3<sup>rd</sup> floor, Foyer

**Thursday, May 14 11:10 - 13:10**

**T1Spec: Beyond 5G connectivity: 6G for a secure and intelligent future (1)**

ROOM – A3.03/A3.04 (AULA), 3rd floor

*Chairs: Ciprian Romeo Comsa (Gheorghe Asachi Technical University of Iasi, Romania), Cristian Patachia - Sultanoiu (Orange Romania SA) and Ion Bogdan (Gheorghe Asachi Technical University of Iasi, Romania)*

**11:10 *Comparative Machine Learning Analysis of UPF Telemetry for 5G Core Loss-Regime Classification***

Tiberius George Sorescu (Gheorghe Asachi Technical University of Iasi, Romania); Ion Bogdan (Techn. University. of Iassy, Faculty of Electronics & Telecommunications, Romania)

**11:30 *Integrated Sensing and Communications: A State-of-the-Art Review for 6G Networks***

Razvan Mihai (University Politehnica of Bucharest & Orange Romania, Romania); Cristian Patachia - Sultanoiu (Orange Romania SA & Technical University Gheorghe Asachi of Iasi, Romania); Rares Rodean (National University of Science and Technology Politehnica of



Bucharest, Romania); Razvan Craciunescu (University Politehnica of Bucharest & Future Networks Lab, Romania)

**11:50 *Energy-Aware TinyML for Adaptive LTE-M Communication in Solar-Powered IoT Systems***

Emanuel Trinc (Politehnica University, Romania); Valentin Adrian Nita (University Politehnica Timișoara, Romania); Razvan Mihai (University Politehnica of Bucharest & Orange Romania, Romania); Cristian Patachia - Sultanoiu (Orange Romania SA & Technical University Gheorghe Asachi of Iasi, Romania)

**12:10 *Highly Available Distributed VPN Architecture in Cloud-Native Environments: 5G Edge Integration Through API-Driven Orchestration***

Răzvan Căcu (Technical University of Cluj-Napoca, Romania); Ana-Maria Bărbuleț (Technical University of Cluj-Napoca, Romania); Robert Botez (Technical University of Cluj-Napoca, Romania); Razvan Mihai (University Politehnica of Bucharest & Orange Romania, Romania); Virgil Dobrota (Technical University of Cluj-Napoca, Romania)

**12:30 *Radio Drone Sensing for Future B5G Networks***

Alexandrin Gutu (Ștefan Cel Mare University of Suceava, Romania); Alexandru Lavric (Ștefan cel Mare University of Suceava, Romania); Partemie-Marian Mutescu (Ștefan Cel Mare University of Suceava, Romania); Cristian Patachia - Sultanoiu (Orange Romania SA & Technical University Gheorghe Asachi of Iasi, Romania); Razvan Mihai (University Politehnica of Bucharest & Orange Romania, Romania)

**12:50 *Intelligent Urban Management Solutions Using 5G Networks and AI Tools***

Iulian B. Ciocoiu (GHEORGHE ASACHI Technical University of Iasi, Romania); Ciprian Romeo Comsa (Gheorghe Asachi Technical University of Iasi, Romania); Nicolae Cleju (Gheorghe Asachi Technical University of Iasi, Romania); Constantin Catargiu (Gheorghe Asachi Technical University of Iasi, Romania)

**Thursday, May 14 13:10 - 14:40**

LUNCH – Cafeteria, 1<sup>st</sup> floor

**Thursday, May 14 14:40 - 15:40**

**T1Spec: Beyond 5G connectivity: 6G for a secure and intelligent future (2)**

ROOM – A3.03/A3.04 (AULA), 3rd floor

*Chairs: Ciprian Romeo Comsa (Gheorghe Asachi Technical University of Iasi, Romania), Cristian Patachia - Sultanoiu (Orange Romania SA) and Ion Bogdan (Gheorghe Asachi Technical University of Iasi, Romania)*

**14:40 *A Mobile Collision Avoidance Application for Vulnerable Road Users Using Short-Term Trajectory Prediction***

Andreea V Militaru (Gheorghe Asachi Technical University of Iasi, Romania); Tiberius George Sorescu (Gheorghe Asachi Technical University of Iasi, Romania); Madalin Mihai Birjovanu (Gheorghe Asachi Technical University of Iasi, Romania); Iolanda Elena



Alecsandrescu (Gheorghe Asachi Technical University of Iasi, Romania); Ciprian Romeo Comsa (Gheorghe Asachi Technical University of Iasi, Romania)

**15:00 *Extended Experimental Evaluation of V2X Communications in Urban Intersections: Insights Toward Intelligent Transportation Systems***

Andreea V Militaru (Gheorghe Asachi Technical University of Iasi, Romania); Carlos Pascal (Gheorghe Asachi Technical University of Iasi, Romania); Vlad Mihai Chiriac (Gheorghe Asachi Technical University of Iasi, Romania); Ciprian Romeo Comsa (Gheorghe Asachi Technical University of Iasi, Romania); Ion Bogdan (Techn. University. of Iassy, Faculty of Electronics & Telecommunications, Romania)

**15:20 *Context-Aware QoS Adaptation Framework for Vehicular Communications in 5G-MEC Networks***

Tudor-Gabriel Ghetau (Technical University of Iasi, Romania); Ion Bogdan (Techn. University. of Iassy, Faculty of Electronics & Telecommunications, Romania); Vlad Mihai Chiriac (Gheorghe Asachi Technical University of Iasi, Romania); Tiberius George Sorescu (Gheorghe Asachi Technical University of Iasi, Romania); Ciprian-Romeo Comsa (Gheorghe Asachi Technical University of Iasi, Romania)

**Thursday, May 14 15:40 - 16:10**

COFFEE BREAK – 3<sup>rd</sup> floor, Foyer

**Thursday, May 14 15:40 - 17:30**

**T1Int: COMPUTING SYSTEMS, INFORMATION THEORY AND ARTIFICIAL INTELLIGENCE**

ROOM – 1st floor, Foyer

*Chairs: Rodica Constantinescu and Bogdan Alexandrescu (National University of Science and Technology Politehnica Bucharest, Romania)*

**T1Int\_01 – *Real-Time RF Streaming on RFSoc 4x2: Quantifying OS Overhead in PL-to-PS Transport***

Gergo Kovacs (Technical University of Cluj-Napoca & National Institute for Research and Development of Isotopic and Molecular Technologies (INCDTIM), Romania); Raluca Nelega (Technical University of Cluj-Napoca & INCDTIM, Romania); Emanuel Puschita (Technical University of Cluj-Napoca & National Institute for Research and Development of Isotopic and Molecular Technologies (INCDTIM), Romania)

**T1Int\_02 – *OFDM Symbol Synchronization Solution with Artificial Intelligence Based Fine Timing Correction***

Mate Marton Mezei (Technical University of Cluj Napoca, Romania); Zsolt Alfred Polgar (Technical University of Cluj-Napoca, Romania)



**T1Int\_03 – Integrated Access Control Systems: Challenges, Engineering Advances and AI-Driven Future Trends**

Nicolae Costin Pistol (National University of Science and Technology Politehnica Bucharest, Romania); Bogdan Alexandrescu (University Politehnica of Bucharest, Romania); Rodica Claudia Constantinescu (National University of Science and Technology Politehnica Bucharest, Romania); Dan Alexandru Stoichescu (National University of Science and Technology Politehnica Bucharest, Romania)

**T1Int\_04 – A Hybrid Genetic Algorithm with Simulated Annealing for Solving Large-Scale 0/1 Knapsack Problems**

Ionut Cosmin Dinut (National University of Science and Technology Politehnica Bucharest, Romania); Rodica Claudia Constantinescu (National University of Science and Technology Politehnica Bucharest, Romania); Bogdan Alexandrescu (University Politehnica of Bucharest, Romania)

**T1Int\_05 – A Hybrid CNN-TCN-XGBoost Model for Multi-Horizon Solar Irradiance Forecasting**

Aseel Bennagi (University "Transilvania" of Brasov, Romania); Obaida AlHousrya (University "Transilvania" of Brasov Romania, Romania); Daniel Tudor Cotfas (Transilvania University of Brasov, Romania); Petru Adrian Cotfas (Transilvania University of Brasov, Romania); Paulescu Marius (West University of Timisoara, Romania)

**T1Int\_06 – Patch Vs Scene Level Features for Parking Slot Detection Under Diverse Weather Conditions**

Bogdan Burtea (Technical University of Cluj-Napoca, Romania); Radu Ștefan Simea (Technical University of Cluj-Napoca, Romania); Camelia Florea (Technical University Cluj-Napoca, Romania); Mihaela Gordan (Technical University of Cluj-Napoca, Romania); Gabriel Oltean (Technical University of Cluj-Napoca, Romania); Ciprian Alexandru Iacobescu (Technical University of Cluj-Napoca, Romania)

**T1Int\_07 – Adaptive Image Inpainting by Classical and Deep Learning Completion for Digitized Mural Paintings**

David Hada (Technical University of Cluj-Napoca, Romania); Mihaela Gordan (Technical University of Cluj-Napoca, Romania); Mihaela Cislariu (Technical University of Cluj-Napoca, Romania)

**T1Int\_08 – LSTM-Based Neural Generation of Lorenz Chaotic Dynamics for Cryptography**

Sara Gabriela Modan (Politehnica Bucuresti, Romania); Alexandru Dinu (Universitatea Politehnica Bucuresti, Romania)

**T1Int\_9 – Directional Fall Detection via Bilateral Capacitive Sensing: A Lightweight SVM Approach**

ThuHang Bui (Babes-Bolyai University of Cluj-Napoca, Romania); Teodora Liliana Heler-Ionescu (Babes Bolyai University, Romania)

**T1Int\_10 – Detection of ADHD Using Serious Game-Based EEG Signals with Multiscale Temporal Convolutional Network and Conditional Generative Adversarial Networks**

Sathiya E (Vellore Institute of Technology, Chennai, India); Chunzhuo Wang (KU Leuven, Belgium); T. Dilleswar Rao (Vellore Institute of Technology, Chennai, India); T. Sunil Kumar (University of Gavle, Sweden)



**T1Int\_11 – Load-Aware Multi-Hop Routing in Wireless Sensor Networks Using Ant Colony Optimization and Neural Network Control**

Antonia Ioana Alexandra Tudor (University Politehnica of Bucharest, Romania); Seyed Salar Sefati (National University of Science and Technology Politehnica Bucharest, Romania); Florea Carmen (University Politehnica of Bucharest, Romania); Octavian Fratu (University Politehnica of Bucharest, Romania)

**T1Int\_12 – Streamlining Machine Learning in Agricultural Wireless Sensor Networks Through Data Preprocessing**

Irina-Petra Manciu (National University of Science and Technology Politehnica Bucharest, Romania); Maria Lămășanu (National University of Science and Technology Politehnica Bucharest, Romania); Dragoș-Ioan Săcăleanu (National University of Science and Technology Politehnica Bucharest, Romania)

**T1Int\_13 – Vision-Based Driver Drowsiness Detection Using Eye-State Analysis and Lightweight CNNs**

Obaida AlHousrya (University "Transilvania" of Brasov Romania, Romania); Aseel Bennagi (University "Transilvania" of Brasov, Romania); Petru Adrian Cotfas (Transilvania University of Brasov, Romania); Daniel Tudor Cotfas (Transilvania University of Brasov, Romania)

**T1Int\_14 – Real-Time Electromagnetic Spectrum Monitoring Using YOLO Architectures for Radio Signal Classification**

Ștefan Papa (Nicolae Balcescu Land Forces Academy, Romania); Mirela Sorecau (Technical University Cluj Napoca, Romania); Emil Șorecău (Nicolae Bălcescu Land Forces Academy, Romania)

**T1Int\_15 – Association Rule Discovery Software Instruments - Analysis, Variants, and Integration in an AI Library**

Emil M Oanta (Constanta Maritime University, Romania)

**Thursday, May 14 16:10 - 17:30**

**T2Inv: APPLIED MICROELECTRONICS**

**ROOM – A3.03/A3.04 (AULA), 3rd floor**

*Chair: Gheorghe Brezeanu (University Politehnica of Bucharest, Romania) and Adelaida Heiman (Constanta Maritime University, Romania)*

**16:10 Sole Temperature Monitoring Solution for the Prevention of Diabetic Foot Ulcerations**

Matei Serbanescu (University Politehnica of Bucharest, Romania); Gheorghe Pristavu (National University of Science and Technology Politehnica Bucharest, Romania)

**16:30 Simulation of Bioelectric and Thermal Effects of Multi-Electrode Microcurrent on Subcutaneous Tissues**

ThuHang Bui (Babes-Bolyai University of Cluj-Napoca, Romania); Teodora Liliana Heler-Ionescu (Babes Bolyai University, Romania)



**16:50 *Augmenting SPICE Behavioral Models for Simulating Emerging Concepts - the Force Extraction IGBT***

Victor-Eduard Albei (University Politehnica of Bucharest & ICPE-CA, Romania); Alexandru Enache (University Politehnica of Bucharest & Deloitte Technology Delivery Center, Romania)

**17:10 *Automated Micro-Scale Defect Detection in GaN HEMT Ohmic Contacts via Anchor-Free YOLO11 Architecture***

ThuaDuc Nguyen (Technical University of Munich, Germany); NgocAnh Le (Porsche, Vietnam); Anh Nhat Nhu (University of Maryland, USA); Thi Thanh Huong Vu (University of Twente, The Netherlands); ThuHang Bui (Babes-Bolyai University of Cluj-Napoca, Romania); Tuan Quoc Vu (VNU, University of Engineering and Technology (UET), Vietnam); Vasile-Catalin Rusu (Babes Bolyai University, Romania); Teodora Liliana Heler-Ionescu (Babes Bolyai University, Romania)

**Thursday, May 14 20:00 – 20:30**

Award Ceremony – ROOM A3.03/A3.04 (AULA), 3rd floor

**Thursday, May 14 20:30 - 22:00**

Gala dinner – Ground floor

**Friday, May 15 9:00 - 11:00**

**F1Inv: COMPUTING SYSTEMS, INFORMATION THEORY, AND ARTIFICIAL INTELLIGENCE**

ROOM – A3.03/A3.04 (AULA), 3rd floor

*Chairs: Bogdan Alexandrescu and Rodica Claudia Constantinescu (National University of Science and Technology Politehnica Bucharest, Romania)*

**9:00 *Enhancing Logistic Chaotic Maps Through Evolutionary Optimization for Image Encryption***

Alexandru Dinu (Universitatea Politehnica Bucuresti, Romania); Sara Gabriela Modan (Politehnica Bucuresti, Romania)

**9:20 *Task Scheduling in Cloud Computing Using Predictive Proximal Policy***

Seyed Salar Sefati (National University of Science and Technology Politehnica Bucharest, Romania); Razvan Craciunescu (University Politehnica of Bucharest & Future Networks Lab, Romania); Octavian Fratu (University Politehnica of Bucharest, Romania); Serban Georgica Obreja (University Politehnica of Bucharest, Romania); Florea Carmen (University Politehnica of Bucharest, Romania)



**9:40 A Deep Learning Framework for UAV-Assisted Search and Rescue of Missing Persons**

Raluca Nelega (Technical University of Cluj-Napoca & INCDTIM, Romania); Gergo Kovacs (Technical University of Cluj-Napoca & National Institute for Research and Development of Isotopic and Molecular Technologies (INCDTIM), Romania); Emanuel Puschita (Technical University of Cluj-Napoca & National Institute for Research and Development of Isotopic and Molecular Technologies (INCDTIM), Romania)

**10:00 Automated Classification of Steel Surface Defects Using Convolutional Neural Network Based Image Analysis**

Eddie Ahlin (University College of Gävle, Sweden); Marco Pellegrini (LIF Srl & Università Politecnica Delle Marche, Italy); T. Sunil Kumar (University of Gävle, Sweden); Niclas Björnsell (University of Gävle, Sweden)

**10:20 Measurement and Characterization of Reset Operation Vulnerabilities in Superconducting Quantum Processors**

Sorin Bolos (Technical University of Cluj-Napoca, Romania); Adrian Colesa (Technical University of Cluj-Napoca, Romania); Tudor P Palade (Technical University of Cluj-Napoca, Romania)

**10:40 On the Trustworthiness and Uncertainty of Single Quality Scores for Automotive Measurement Data**

Sven Dominka (Robert Bosch AG, Austria); Henrik Smith (Robert Bosch AG, Austria)

**Friday, May 15 11:00 - 11:30**

COFFEE BREAK – 3<sup>rd</sup> floor, Foyer

**Friday, May 15 11:30 - 13:10**

**F2Inv: SIGNALS AND SYSTEMS. COMMUNICATIONS (1)**

ROOM – A3.03/A3.04 (AULA), 3rd floor

*Chairs: Florin Alexa (Politehnica University Timisoara, Romania) and Constantin Paleologu (National University of Science and Technology Politehnica of Bucharest, Romania)*

**11:30 Fixed-Threshold Method for Yelp Siren Detection**

Elena-Valentina Dumitraşcu (National University of Science and Technology Politehnica Bucharest, Romania); Robert-Alexandru Dobre (Military Technical Academy "Ferdinand I", Romania); Razvan Rughinis (National University of Science and Technology Politehnica Bucharest, Romania)

**11:50 Measurement-Based Evaluation of Downlink Transmit Power in 5G NR Urban Deployments**

Sorin Leonte (Technical University of Cluj-Napoca, Romania); Ciprian Zamfirescu (Vodafone Romania, Romania); Daniel Burmaz (Vodafone Romania, Romania); Radu Iugulescu (Vodafone Romania, Romania); Andra Pastrav (Technical University of Cluj-Napoca, Romania); Cristian Codau (Technical University of Cluj-Napoca, Romania); Rares Buta (Technical University of Cluj-Napoca, Romania); Emanuel Puschita (Technical University of Cluj-Napoca &



National Institute for Research and Development of Isotopic and Molecular Technologies (INCDTIM), Romania)

**12:10 A Family of Robust Regularized Adaptive Filtering Algorithms**

Radu Otopeleanu (Politehnica Bucharest, Romania); Constantin Paleologu (University Politehnica of Bucharest, Romania); Jacob Benesty (INRS-EMT, University of Quebec, Canada); Cristian Stanciu (University Politehnica of Bucharest, Romania); Laura-Maria Dogariu (University Politehnica of Bucharest, Romania); Ruxandra-Liana Costea (University Politehnica of Bucharest, Romania)

**12:30 Circle Fitting by a Weighted Least Squares Method: An Analysis and New Improvements**

Corneliu Rusu (Technical University of Cluj-Napoca, Romania)

**12:50 Performance Evaluation of Cell-Free MIMO Networks with Distributed Access Points**

Gordana Raluca Barb (University Politehnica Timisoara, Romania); Valentin Adrian Nita (University Politehnica Timisoara, Romania); Andrei Razvan Putnic (University Politehnica Timisoara, Romania)

**Friday, May 15 13:10 - 14:40**

LUNCH – Cafeteria, 1<sup>st</sup> floor

**Friday, May 15 14:40 - 15:40**

**F2Inv: SIGNALS AND SYSTEMS. COMMUNICATIONS (2)**

ROOM – A3.03/A3.04 (AULA), 3rd floor

*Chairs: Florin Alexa (Politehnica University Timisoara, Romania) and Constantin Paleologu (National University of Science and Technology Politehnica of Bucharest, Romania)*

**14:40 Production-Ready Romanian Text-to-Speech for Commercial Voicebots: A Staged Adaptation Approach**

Alexandru Lucian Georgescu (Zevo Technology S.R.L, Romania); Alexandru Caranica (Zevo Technology S.R.L, Romania); Horia Cucu (Zevo Technology S.R.L, Romania)

**15:00 A Comparative Entropy Analysis of BJT Avalanche Noise, SDR Noise and Algorithmic PRNGs**

Teodor Petrita (Politehnica University of Timisoara & ANCOM, Romania); Mark Paul Tamaş (UPT, Romania)

**15:20 UWB Positioning with AT Capable Transceivers**

Teodor-Gabriel Stoichituiu (Politehnica University Timisoara, Romania); Teodor Petrita (Politehnica University of Timisoara & ANCOM, Romania); Florin Alexa (Politehnica University Timisoara, Romania)



**Friday, May 15 15:40 - 16:10**

COFFEE BREAK – 3<sup>rd</sup> floor, Foyer

**Friday, May 15 16:10 - 17:50**

**F3Inv: Applied R&D results**

ROOM – A3.03/A3.04 (AULA), 3<sup>rd</sup> floor

*Chairs: Oana Ghenescu and Marian Ghenescu (Institute of Space Science - INFLPR Subsidiary, Romania)*

**16:10 Development of Compact Electromagnetic Calorimeter: Novel Designs and Advanced Computing Methods**

Veta Ghenescu (Institute of Space Science - INFLPR Subsidiary, Romania); Petru Mihai Potlog (Institute of Space Science - INFLPR Subsidiary, Romania); Alina Tania Neagu (Institute of Space Science - INFLPR Subsidiary, Romania); Marian Traian Ghenescu (Institute of Space Science - INFLPR Subsidiary, Romania)

**16:30 Design and Integration of Emerging Technologies for Enhanced UAV Surveillance and Countermeasures: SICDrone Project Results**

Marian-Traian Ghenescu (Institute of Space Science, Romania); Razvan D. Tamas (Constanta Maritime University, Romania); Veta Ghenescu (Institute of Space Science - INFLPR Subsidiary, Romania)

**16:50 An Operational Demonstrator for Asynchronous Satellite Communications: EMISAR Project Results**

Veta Ghenescu (Institute of Space Science - INFLPR Subsidiary, Romania); Dan Selaru (Institute of Space Science - INFLPR Subsidiary, Romania); Alexandru Pandele (Romanian InSpace Engineering, Romania); Daniel Bostan (RARTEL, Romania); Razvan D. Tamas (Constanta Maritime University, Romania)

**17:10 Acoustic Signal-Based Drone Detection Using a Tetrahedral Microphone Array and Deep Neural Networks: SICDrone Module**

Marian-Traian Ghenescu (Institute of Space Science, Romania); Serban Vasile Carata (Onest Solutions SRL, Romania); Veta Ghenescu (Institute of Space Science - INFLPR Subsidiary, Romania)

**17:30 Multi-Domain Harmonization of GNSS Positioning Requirements Across Air, Maritime and Terrestrial Environments**

Irina Stefanescu (Romanian Space Agency, Romania); Mirela-Madalina Bivolaru (Romanian Space Agency, Romania)



**Friday, May 15 16:10 - 17:50**

**F1Spec: Special Session: ADVANCE TOPICS FOR MAXIMIZING THE RENEWABLE ENERGY HOSTING CAPACITY (Workshop)**

**ROOM – A3.02, 3<sup>rd</sup> floor**

*Chairs: Cornel Panait (Constanta Maritime University, Romania) and George Cristian Lazaroiu (University Politehnica of Bucharest, Romania)*

**16:10 Control Aspects Concerning DC/AC Three Phases Sinusoidal Power Inverter**

Sorin Sintea (Constanta Maritime University, Romania); Cornel Panait (Constanta Maritime University, Romania); Bogdan Hnatiuc (Constanta Maritime University, Romania); Mihaela Hnatiuc (Constanta Maritime University, Romania); Catalin Pomazan (Constanta Maritime University, Romania)

**16:30 Strategic Implementation of a Hybrid Energy Management System for Cruise Vessels**

Mihail-Vlad Vasilescu (Constanta Maritime University, Romania); Mariana Panaitescu (Constanta Maritime University, Romania); Fanel- Viorel Panaitescu (Constanta Maritime University, Bulgaria); Ionut Voicu (Constanta Maritime University, Romania); Catalin Faitar (Constanta Maritime University & CMU, Romania); Cornel Panait (Constanta Maritime University, Romania)

**16:50 Energy Communities - a Solution to Make Consumption More Efficient**

Ing. Iulia Simion (Romania); Gheorghe Lăzăroiu (University Politehnica Bucharest, Romania); Cornel Panait (Constanta Maritime University, Romania)

**17:10 Impact Assessment of High-Power EV Charging on Distribution Transformers with Integrated Battery Energy Storage**

Mohammed Gmal Osman Abdelfadeel (National University of Science and Technology Politehnica Bucharest & Maritime University of Constanța, Romania); Cornel Panait (Constanta Maritime University, Romania); Cristian Valentin Strejoiu (National University of Science and Technology Politehnica Bucharest, Romania); Alina Niculescu (Constanta Maritime University, Romania)

**17:30 A Comparison Between Different Machine Learning Approaches for Pathloss Prediction as a Function of Scatterer Density**

Cristina Sabina Bosoc (Maritime University of Constanta & Politehnica University of Bucharest, Romania); Adelaida Heiman (Constanta Maritime University, Romania); Andreea Constantin (Constanta Maritime University, Romania); Andronic Roxana (Constanta Maritime University, Romania); Rodica Claudia Constantinescu (National University of Science and Technology Politehnica Bucharest, Romania); Razvan D. Tamas (Constanta Maritime University, Romania)