The 2024 IEEE Conference on Advanced Topics on Measurement and Simulation (ATOMS)

28-30 August 2024 | Constanta Maritime University, Cuartului 2, Constanta, Romania

PROGRAMME BOOK
atoms2024.org

CONTENTS

WELCOME TO 2024 IEEE ATOMS

ATOMS is a biennial forum for the exchange of information on the 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, electric engineering, and environment protection, 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 electrooptics, electronic technology, artificial intelligence, applications in energy and electric systems, mechanical and electromechanical systems, environment protection.

ATOMS 2024 is organized by Constanta Maritime University and by the National University of Science and Technology POLITEHNICA of Bucharest. 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, and by the Romanian Association on Antennas and Propagation (RAAP).

We are looking forward to meeting you in Constanta, Romania.

Conference Co-Chairs:

Prof. Cornel PANAIT, Constanta Maritime University

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

Prof. Violeta CIUCUR, Constanta Maritime University

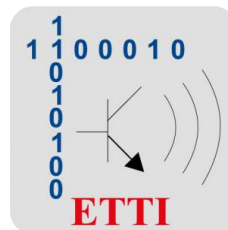Prof. Razvan TAMAS, Constanta Maritime University

ORGANIZING AND SUPPORTING INSTITUTIONS

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

USEFUL INFORMATIONS

2024 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 August 28: 8:00 – 19:30
• Thursday August 29: 9:00 – 19:10
• Friday August 30: 9:00 – 18:30

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 7:30.

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 2024 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 Constanta in August ranges between 27°C – 33°C.

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

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

**Measurement System**

Decimal Metric System.

WELCOME RECEPTION

The Welcome Reception will be organized on Wednesday, August 28 from 20:00 to 22:00 at the Cafeteria near the pontoon at the Nautical Base of the Constanta Maritime University (conference venue). This space offers a very beautiful view of Lake Siutghiol.

The Welcome Reception will be mostly standing so people can move around and greet friends. Of course, some seats will also be available. For a pleasant atmosphere during this event, musical accompaniment will be provided. A selection of drinks is prepared for the participants.

The ticket for this event will be the badge of registered participants of ATOMS 2024. If anyone wishes to bring an accompanying person, we only ask for information in advance to know how many people are likely to attend this event.
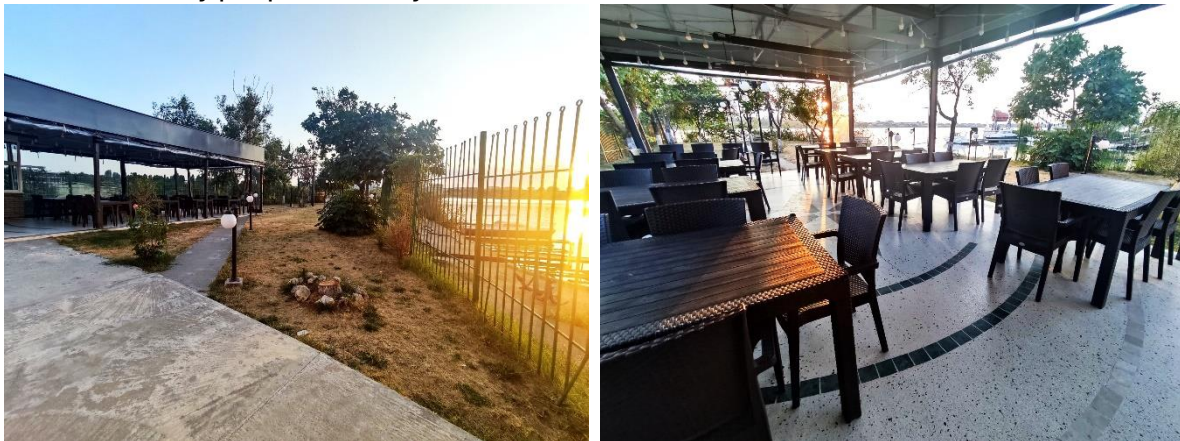
AWARD CEREMONY & GALA DINNER

The Award Ceremony will take place on Thursday, August 29, from 20:00 in Room A201.

A Gala Dinner for ATOMS participants and their guests will be organized on Thursday, August 29, from 20:30 to 22:00 at the Cafeteria near the pontoon at the Nautical Base of the Constanta Maritime University (conference venue). This space offers a spectacular view of Lake Siutghiol, especially at sunset. It will be an opportunity for the participants of ATOMS 2024 in Constanta to meet in person with colleagues and friends.

The Gala Dinner is designed as an opportunity for the participants of ATOMS 2024 in Constanta to meet in person with friends and colleagues and to attend the award ceremony. For a pleasant atmosphere during this event, musical accompaniment will be provided. The participants of the Gala Dinner will be seated at the tables. A selection of drinks is prepared for the participants.

VENUE

Address: Constanta Maritime University, street Cuartului 2, City Constanta, Country Romania.
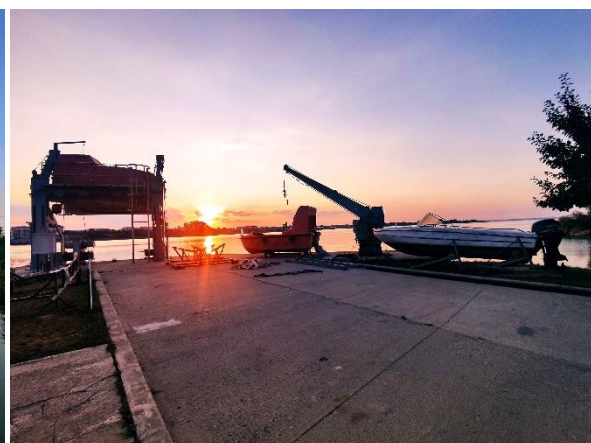
Transport with train from the Airport Henri Coanda to Constanta, Romania:

Route 1: Departure Airport Henri Coanda, arrivel Bucuresti Nord, estimated time 25min, ticket price 5 RON / 1 EUR

Route 2: Departure Bucuresti Nord, arrivel Constanta, estimated time 2h30min, ticket price 75 RON / 15 EUR

More information and online purchase of train tickets **here.**
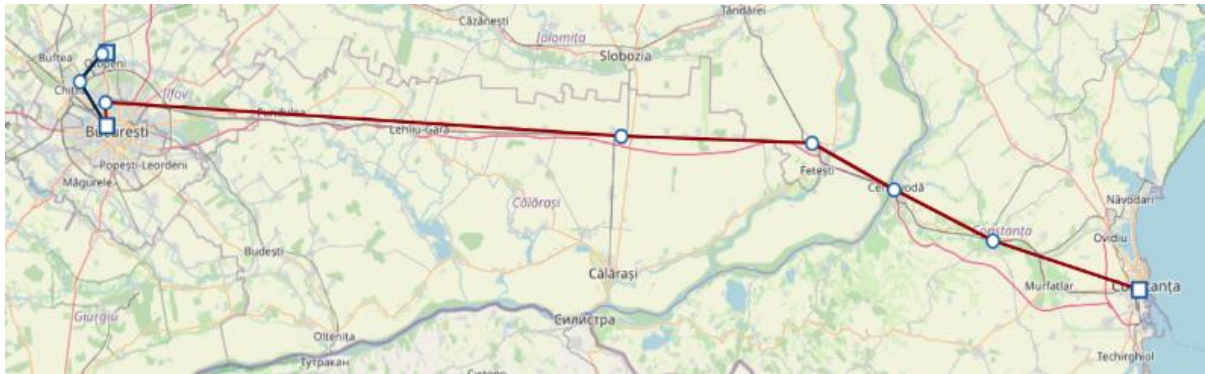
Recommended public transport from the train station to UMC, Cuartului 2, Constanta:

BOLT share ride, estimated time 15min, estimated price: 30 RON / 6 EUR (downland link: Google Play and App Store)

BUS number 2-43 and 5-40, estimated time 40min, ticket price for two trips: 5 RON / 1 EUR
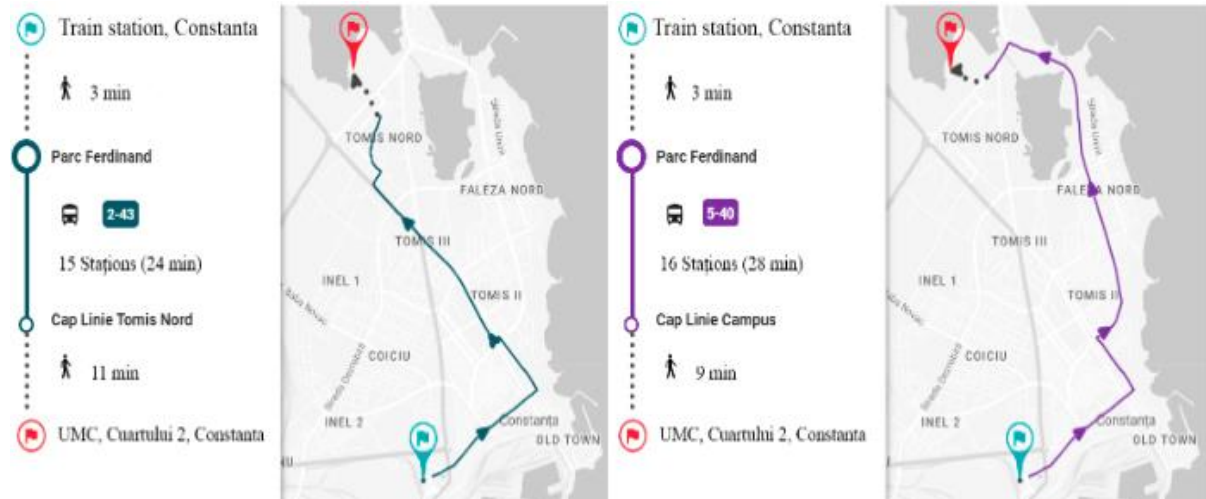
KEYNOTE SPEAKERS

KEYNOTE LECTURE 1 – MANIPULATION OF RADIATION PERFORMANCES OF FLAT AND CONFORMAL ANTENNAS BY COATING WITH (QUASI-)PERIODIC PATTERNING

Speaker: Prof. Ladislau MATEKOVITS, Politecnico di Torino, Italy, Department of Electronics and Telecommunications

Ladislau Matekovits (Senior Member, IEEE) received the degree in electronic engineering from Institutul Politehnic din Bucureşti, Bucharest, Romania, in 1992, and the Ph.D. degree (Dottorato di Ricerca) in electronic engineering from Politecnico di Torino, Turin, Italy, in 1995. Since 1995, he has been with the Department of Electronics and Telecommunications, Politecnico di Torino, first with a Postdoctoral Fellowship and then as a Research Assistant. In 2002, he joined the Department of Electronics and Telecommunications, Politecnico di Torino, as an Assistant Professor. In 2005, he was appointed as a Senior Assistant Professor. In 2005, he was a Visiting Scientist with the Department of Antennas and Scattering, FGAN-FHR (now Fraunhofer Institute), Wachtberg, Germany. In July 2009, for two years, he has been a Marie Curie Fellow at Macquarie University, Sydney, NSW, Australia, where he also held a visiting academic position in 2013 and has been appointed as an Honorary Fellow in 2014. In February 2017, he obtained the full professor qualification in Italy. Since 2020, he has been an Honorary Professor with the Polytechnic University of Timisoara, Romania, and an Associate Professor with the Italian National Research Council. He has been invited to serve as a research grant assessor for government funding calls (Romania, Italy, Croatia, Kazakhstan, and Iceland) and as an international expert in Ph.D. thesis evaluation by several universities from Australia, India, Pakistan, and Spain. He has published more than 400 articles, including more than 125 journal contributions, and delivered seminars on these topics all around the world: Europe, USA (AFRL/MITBoston), Australia, China, and Russia. His main research interests include numerical analysis of printed antennas and in particular development of new, numerically efficient full-wave techniques to analyze large arrays, and active and passive metamaterials for cloaking applications. Material parameter retrieval of these structures by inverse methods and different optimization techniques has also been considered. In the last years, bioelectromagnetic aspects have also been contemplated, such as example design of implantable antennas or the development of nano-antennas for example for drug delivery applications. He has been a member of the Organizing Committee of the International Conference on Electromagnetics in Advanced Applications (ICEAA), since 2010. He was appointed as a member of the National Council for the Attestation of University Degrees, Diplomas and Certificates (CNATDCU), Romania, from 2020 to 2024. He is a member of the

International Advisory Committee and the technical program committee member of several conferences. He was a recipient of various awards in international conferences, including the 1998 URSI Young Scientist Award, Thessaloniki, Greece; the Barzilai Award 1998 (Young Scientist Award, granted every two years by the Italian National Electromagnetic Group); and the Best AP2000 Oral Paper on Antennas, ESA-EUREL Millennium Conference on Antennas and Propagation, Davos, Switzerland. He was a recipient of the Motohisa Kanda Award, in 2018, for the most cited paper of IEEE TRANSACTIONS ON ELECTROMAGNETIC COMPATIBILITY in the past five years. He received the 2019 American Romanian Academy of Arts and Sciences (ARA) Medal of Excellence in Science; the Ad Astra Award, in 2020; a Senior Researcher for Excellence in Research; the Outstanding Associate Editor Award for IEEE ANTENNAS AND WIRELESS PROPAGATION LETTERS, in 2020; and one of the scientists with the highest level of scientific productivity (the top 2% in the world) prepared by Stanford University researchers, in 2022. He has been the Assistant Chairperson and the Publication Chairperson of the European Microwave Week 2002, Milan, Italy; and the General Chair of the 11th International Conference on Body Area Networks (BodyNets 2016). He serves as an Associate Editor for IEEE TRANSACTIONS ON ANTENNAS AND PROPAGATION, IEEE ACCESS, IEEE ANTENNAS AND WIRELESS PROPAGATION LETTERS, and IET MAP. He serves as a reviewer for different journals.

KEYNOTE LECTURE 2 – MEET THE CHALLANGE OF DESIGNING SMALL AND SUPERGAIN ANTENNAS

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 Microondes) in 2017.

KEYNOTE LECTURE 3 – FILLING THE "TERAHERTZ GAP" BY NONLINEAR OPTICS

Speaker: Prof. Qi FENG, Shenyang Institute of Automation, Chinese Academy of Sciences, Director of THz Imaging Laboratory

Professor Qi Feng did bachelor study in Zhejiang University and got master and PhD degrees from Katholieke Unversiteit Leuven, Belgium in 2005, 2011 respectively. He joined RIKEN, Japan in 2011. Between 2014 and 2015, he worked in Goethe University, Germany and University of Birmingham, UK. Then, he came back to his hometown and built THz Imaging Laboratory. He is in charge of several national projects, and now he is the head of Key Laboratory of Imaging and Sensing, Liaoning Province. He is also the committee member of: Key Laboratory of THz Technology, Ministry of Education; Key Laboratory of Opto-Electro Signal Processing, Chinese Academy of Sciences; Key Laboratory of Meta-Materials and Microwave Technology, Guangdong Province. His research interests include microwave, laser and radar. Now the THz Imaging Lab. works both on electronics and photonics and a set of components like THz/IR sources and detectors 、high-performance THz lenses and high-gain THz antennas have been developed, several in-house high-resolution THz imaging algorithms, have been realized. He has published over 130 research papers, including 15 invited talks in international and national conferences. He has served TPC and session chairs for a set of international and national conferences, including ICC, IRMMW-THz etc. He got the Best Paper Award in GSMM 2014.

KEYNOTE LECTURE 4 – UNIPOLAR TRANSISTOR OPERATION – A FLUID DYNAMIC ANALOGY

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 snssors 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 5 – UNLOCKING FRONTIERS: INNOVATIONS AND ADVANCEMENTS IN MEASUREMENT AND SIMULATION TECHNIQUES SHAPING TODAY'S GLOBAL RESEARCH LANDSCAPE

Speaker: Prof. Angelica BAYLON, ERO Director, MAAP Philippines

Professor Angelica Baylon holds 4 Master's & 2 Ph.D. degrees, all earned with distinctions & grants. Her expertise is on Chemistry, Maths, Physics, Educational, and Business Administration, Shipping Business Management, Bioethics, Global Public Health, MET & Sustainability. She is actively involved in Research, Instruction, Productivity and Extension Services (RIPES). As one of the scientific experts, she is recognized in the Philippine Men & Women of Science and in the Specialized Philippine reference for experts and scientists. She collaborated with scholars spreading over global regions (the Asia Pacific and Oceania, the Americas, Europe, and Africa) for international research cooperation. Her papers are cited in Google scholars, the web of science, and semantic scholars as she conducts researches on a wide spectrum, of topics. She is an editorial board member, paper contributor, and paper reviewer of reputable maritime journals like TRANSNAV, Poland; JEMS, Turkey; and JMTE, Romania. A regular member of the National Research Council of the Philippines (NRCP), she accomplished 2 NRCP funded research projects that largely contributed to the adoption of significant policies for the Philippine Maritime Industry. she is a recipient of numerous global awards like the IAMURE Outstanding Asian Research Leadership Award and the Royal Institute of Singapore lifetime Research Fellowship, to cite a few. In the maritime, she is Vice Chair of the Expert Group 3 on Recruitment, Career Development and Job Transitions of APEC –SEN or the Asia Pacific Economic Cooperation for Seafarers Excellence Network ; Secretary-General of both Nautical Institute (NI) and Institute of Marine Engineering Science and Technology (IMarEST); Board of Director of Asian Marine Educators Association (AMEA) and a Fellow TRANSNAV of Gydnia Maritime University and NI Poland As MAAP is an institutional member of the International

Association of Maritime Universities (IAMU), Prof. Baylon as research partner, had contributed to three IAMU & Nippon Foundation funded projects namely SDiMET or Sustainable Development in MET ; GECAMET or Gender Equality and Cultural Awareness in MET which earned for MAAP the Top 2 rank in the First-ever Higher Education Internationalization Award . She is member of the IAMU working group of the Peer Assisted Evaluation Scheme (PAES) project and currently involve in two IAMU funded projects. Prof. Baylon, a MAAP pioneer Executive Maritime Dean & Director for Research & Extension Services, is currently a pioneer External Relations Director of MAAP. She is also the PAEPI Global Chair and President Emeritus.

COMMITTEES

GENERAL CHAIRS

Prof. Cornel Panait, Constanta Maritime University
Prof. Mihnea Udrea, National University of Science and Technology POLITEHNICA of Bucharest
Prof. Violeta Ciucur, Constanta Maritime University
Prof. Razvan Tamas, Constanta Maritime University

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Dr. Ionica Cristea, Constanta Maritime University

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Prof. Lucian Toma, National University of Science and Technology POLITEHNICA of Bucharest, Chair of the IEEE Romania Section
Prof. Ladislau Matekovits, Politecnico di Torino, Italy
Prof. Ala Sharaiha, University of Rennes, France
Prof. Qi Feng, Chinese Academy of Sciences, Shenyang Institute of Automation, China
Dr. Songyang Zhang, University of Louisiana at Lafayette, USA

Dr. Farouk Zouari, National Engineering School of Tunis (ENIT), Tunisia

Prof. Razvan Tamas, Constanta Maritime University, Honorary Chair of the IEEE Romania Section AP-S/CRFID Jt. Chapter

Prof. Tudor Palade, Technical University of Cluj-Napoca, Chair of the IEEE Romania Section AP-S/CRFID Jt. Chapter

Prof. Florin Alexa, University Politehnica of Timisoara, Chair of the IEEE Romania Section CommSoc Chapter

Prof. Gheorghe Brezeanu, National University of Science and Technology POLITEHNICA of Bucharest

Prof. Bogdan Ionescu, National University of Science and Technology POLITEHNICA of Bucharest

Prof. Ioan Nicolaescu, Military Technical Academy "Ferdinand I"

Dr. Ionica Cristea, Constanta Maritime University

Dr. Habil. Aurelian Popescu, National Institute of R&D for Optoelectronics INOE 2000

Dr. Marian Vladescu, National University of Science and Technology POLITEHNICA of Bucharest

Prof. Constantin Paleologu, National University of Science and Technology POLITEHNICA of Bucharest

Prof. Simona Halunga, National University of Science and Technology POLITEHNICA of Bucharest

Prof. Octavian Fratu, National University of Science and Technology POLITEHNICA of Bucharest

Dr. Bogdan Florea, National University of Science and Technology POLITEHNICA of Bucharest

Dr. Bogdan Alexandrescu, National University of Science and Technology POLITEHNICA of Bucharest

Prof. Andrei Anghel, National University of Science and Technology POLITEHNICA of Bucharest

Dr. Cosmin Danisor, National University of Science and Technology POLITEHNICA of Bucharest

Dr. Cristina-Adelaida Heiman, Constanta Maritime University

Dr. Andreea Platica, Constanta Maritime University

Prof. Mariana Panaitescu, Constanta Maritime University

Dr. Catalin Faitar, Constanta Maritime University

Dr. Elena Cristina Rada, Insubria Unversity, Italy

Prof. Marco Ragazzi, Trento University, Italy

PRESENTATION RULES

2024 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 the 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 the in case it contains multimedia (audio and video) material.

- For *Special Session for the Ph.D. Students* – Each oral presentation is scheduled for 15 minutes.

ROOM A201

ROOM A203

TECHNICAL PROGRAM

Wednesday, August 28			
Time	Invited Oral Papers	Open Submission Papers	Plenary Session
08:00-09:00	Registration		
09:00-09:30	Opening ceremony		
09:30-12:15			W1key: *Keynote*
12:15-12:45	Coffee break		
12:45-14:05	W1Inv: *Electromagnetics, radiowaves and antennas*		
14:05-15:35	Lunch		
15:35-17:35	W2Inv: *Remote sensing systems*		
17:35-18:05	Coffee break		
18:05-19:20	W1Spec: *Special Session: Ph.D. students*	W1Int: *Applied electronics, photonics, and telecommunications*	
19:30-22:00	Welcome Reception		

Thursday, August 29			
Time	Invited Oral Papers	Open Submission Papers	Plenary Session
09:00-11:20	T1Inv: *Photonics and Optoelectronics*		
11:20-11:50	Coffee break		
11:50-13:10	T2Inv: *Applied microelectronics*		
13:10-14:40	Lunch		
14:40-16:20	T3Inv: *Computing systems, information theory, and artificial intelligence*		
16:20-16:50	Coffee break		
16:50-18:30	T1Spec: *Special Session: Mobility and training for beyond 5G ecosystems (MOTOR-5G / RECOMBINE)*	T1Int: *Computing systems, information theory and artificial intelligence*	
20:00-22:00	Gala dinner		

Friday, August 30			
Time	Invited Oral Papers	Open Submission Papers	Plenary Session
09:00-09:30	F1W: *First long-distance quantum communication national and metropolitan networks in Romania*		
09:30-11:10	F1Inv: *Signals and systems. Communications*		
11:10-11:40	*Coffee break*		
11:40-13:00	F2Inv: *Environment protection applications*		
13:00-14:30	*Lunch*		
14:30-16:30	F1Spec: *Workshop: Floating Offshore Wind Technologies for Black Sea (BLOW)*	F1Int: *Applications in environment protection, electric, mechanic and electromecanic systems*	
16:30-18:10	F2Spec *Special Session: Maximizing the renewable energy integration capacity of distribution networks (MAREHC)*		

Wednesday, August 28

Wednesday, August 28 8:00 - 09:00

REGISTRATION – Ground floor hall

Wednesday, August 28 9:00 - 09:30

OPENING - Room A 201

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

Prof. Cornel Panait – General Chair, Constanta Maritime University

Prof. Mihnea Udrea – General Chair, National University of Science and Technology Politehnica of Bucharest

Prof. Razvan D. Tamas – General Chair, Constanta Maritime University

Wednesday, August 28 9:30 - 12:00

W1key: KEYNOTE

ROOM A 201

Chairs: Cornel Panait (Constanta Maritime University, Romania), Razvan D. Tamas (Constanta Maritime University, Romania)

9:30 *Manipulation of radiation performances of flat and conformal antennas by coating with (quasi-)periodic patterning*
Ladislau Matekovits (Politecnico di Torino, Italy, Department of Electronics and Telecommunications)

10:00 *Meet the Challange of Designing Small and Supergain Antennas*
Ala Sharaiha (Université de Rennes & IETR, France)

10:30 *Filling the "terahertz gap" by nonlinear optics*
Qi Feng (Shenyang Institute of Automation, Chinese Academy of Sciences, Director of THz Imaging Laboratory)

11:00 *Perspectives of MOS and Bipolar Transistors. Operation - A Hidrodynamic Analogy*
Gheorghe Brezeanu (National University of Science and Technology Politehnica of Bucharest, Romania)

11:30 *Unlocking Frontiers: Innovations and Advancements in Measurement and Simulation Techniques Shaping Today's Global Research Landscape*
Angelica M Baylon (Maritime Academy of Asia and the Pacific & AUSN and EEI, Philippines)

Wednesday, August 28   12:00 - 12:15

ROUND TABLE – Ground floor hall

Wednesday, August 28   12:15 - 12:45

COFFEE BREAK – Ground floor hall

Wednesday, August 28   12:45 - 14:05

W1Inv: ELECTROMAGNETICS, RADIOWAVES AND ANTENNAS

ROOM – A 201

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

12:45 *Radiofrequency Emission Monitoring by ANCOM Fixed Stations in Eight Cities in Romania During One Whole Year*
Delia-Bianca Deaconescu (Technical University of Cluj-Napoca, Romania); Simona Miclaus (Nicolae Balcescu Land Forces Academy, Sibiu, Romania); Teodor Petrita (Politehnica University of Timisoara & ANCOM, Romania)

13:05 *High Frequency Ratio Dual Band Metamaterial Transmission Lines*
Iulia Andreea Mocanu (National University of Science and Technology Politehnica of Bucharest, Romania)

13:25 *A Comprehensive Pipeline for the Integration, Evaluation, and Correction of Heterogeneous Data Sources for Enhanced Q-Band Satellite Signal Analysis*
Raluca Simedroni, Tudor P Palade and Andra Pastrav (Technical University of Cluj-Napoca, Romania); Emanuel Puschita (Technical University of Cluj-Napoca, Romania & National Institute for Research and Development of Isotopic and Molecular Technologies (INCDTIM), Romania); Paul N. Dolea (Technical University of Cluj-Napoca, Romania)

13:45 *Design, Fabrication and Performance Evaluation of Antennas for Smart Urban Agriculture*
Nikolay T Atanasov and Gabriela Atanasova (South-West University Neofit Rilski, Bulgaria); Blagovest N Atanasov (Technical University of Sofia, Bulgaria)

Wednesday, August 28   14:05 - 15:35

LUNCH - Cafeteria

Wednesday, August 28   15:35 - 17:35

W2Inv: REMOTE SENSING SYSTEMS

ROOM – A 201

*Chairs: Andrei Anghel (National University of Science and Technology Politehnica of Bucharest & Center for Spatial Information (CEOSpaceTech), Romania), Cosmin Razvan Danisor (*National University of Science and Technology Politehnica of Bucharest *& National Research Council of Italy, Romania)*

15:35 *RFI Mitigation Method Based on Polarization Rotation for Automotive FMCW Radars*
Grigore Robert Muja (UPB, Romania); Andrei Anghel (National University of Science and Technology Politehnica of Bucharest & Center for Spatial Information (CEOSpaceTech), Romania); Silviu Ciochina (University Politehnica of Bucharest, Romania)

15:55 *Uncertainty-Aware Unsupervised Machine Learning to Draw Coastline in Sentinel-2 Images*
Chandrabali Karmakar, Nina Maria Gottschling and Andrés Camero (Deutsche Zentrum für Luft- und Raumfahrt, Germany); Mihai Datcu (Doctoral School of Electronics, Telecommunications, and Information Technology University Politehnica of Bucharest)

16:15 *Causal Drought Risk Assessment Fusing Meteo Data and Satellite Image Time Series: Case Study of Nuntasi Lake*
Catalin-Andrei Miu and Mihai Datcu (National University of Science and Technology Politehnica Bucharest, Romania)

16:35 *Analyzing Temporal Changes in the Danube Delta: A Time Series Study with Co-Registered Sentinel-1 and Sentinel-2 Data*
Mobina Keymasi (National University of Science and Technology Politehnica Bucharest, Romania); Mihai Datcu (German Aerospace Center, Germany)

16:55 *Harmonizing One Health and Earth Observation to Unravel Climate Change Impact on Vector-Borne Transmitted Disease*
Daniela Faur, Corina Vaduva, Mihai Datcu and Cristi Damian (National University of Science and Technology Politehnica of Bucharest, Romania); Liviu Miron and Mihai Coca (University of Agricultural Sciences and Veterinary Medicine, Romania)

17:15 *Analysis of Constanta Region Using CAESAR Detector on Sentinel-1 Data*
Cosmin Razvan Danisor (University Politehnica of Bucharest & National Research Council of Italy, Romania); Diego Reale and Gianfranco Fornaro (CNR-IREA, Italy); Antonio Pauciullo (IREA, CNR, Italy); Mihai DATCU (National University of Science and Technology Politehnica of Bucharest, Romania)

Wednesday, August 28   17:35 - 18:05

COFFEE BREAK – Second floor hall

Wednesday, August 28   18:05 - 19:20

W1Int: APPLIED ELECTRONICS, PHOTONICS, AND TELECOMMUNICATIONS

ROOM – Ground floor hall

Chairs: Ionica Cristea (Constanta Maritime University, Romania), Adelaida Cristina Heiman (Constanta Maritime University, Romania)

W1Int_01 – *A MIMO 28.5 GHz H-Shaped Microstrip Patch Antenna for 5G Applications*
Majed Dwairi; Elvera Dwairi and Safaa Moqbel (Al-Balqa Applied University, Jordan)

W1Int_02 – *Automatic Vehicle Detection and Tracking Using Cascade Classifiers and CNN-Based Multi-Scale Feature Extraction*
Tudor Barbu, Silviu-Ioan Bejinariu and Ramona Luca (Institute of Computer Science, Romanian Academy - Iasi Branch, Romania)

W1Int_03 – *Low-Cost 24GHz 3D Ground Penetrating Radar*
Mirel Ciprian Paun and Livia Gavrilov (Constanta Maritime University, Romania)

W1Int_04 – *Artificial Intelligence for 3-D Satellite Networks: A Comprehensive Overview*
Lida Kouhalvandi and Mehmet Atif Kasim (Dogus University, Turkey); Ladislau Matekovits (Politecnico di Torino, Italy); Mohammad Alibakhshikenari (Universidad Carlos III de Madrid, Spain)

W1Int_05 – *Evaluation of Simulation-Based Product Validation in Automotive Ethernet via Measurements*
Catalin Pescari, Andrei Silaghi, Aldo De Sabata and Andrei Neiconi (University Politehnica of Timisoara, Romania)

W1Int_06 – *Ultra-Wideband MIMO Antenna for Automotive Applications*
Jeler Florin and Adelaida Cristina Heiman (Constanta Maritime University, Romania)

W1Int_07 – *Phased Patch Antenna Array for Satellite Communications*
Valentina Lupu and Adelaida Cristina Heiman (Constanta Maritime University, Romania); Ionut Ghenu (Invite Systems SRL., Romania)

W1Int_08 – *A Study on Post-Aurora Borealis HF Propagation Effects*
Marius Pastorcici, Andreea Platica and Razvan D. Tamas (Constanta Maritime University, Romania)

W1Int_09 – *A Bistatic NVIS Ionosphere Sounder for HF Propagation Investigation*
Marius Pastorcici, Andreea Platica, Adelaida Cristina Heiman and Razvan D. Tamas (Constanta Maritime University, Romania)

W1Int_10 – *Innovative Dual-Band Antenna for Reliable LoRa IoT Connectivity*
Andreea Platica, Gabriel Ifrim and Razvan D. Tamas (Constanta Maritime University, Romania)

W1Int_11 – *Modeling of Millimeter-Wave Absorption and Scattering of Sand and Dust Particles Based on Mie Theory*

Peng Gao, Jr (Shenyang University of Technology & Shenyang Institute of Automation, Chinese Academy of Sciences, China); Feng Qi (Shenyang Institute of Automation, Chinese Academy of Science, China); ZhenYu Liu (Shenyang University of Technology, China)

W1Int_12 – *Research on Measuring the Thickness of Multi-Layer Non-Metallic Materials Based on Sparse Deconvolution Method*

Haibo Wang (Shenyang Ligong University & Shenyang Institute of Automation Chinese Academy of Sciences, China); Feng Qi (Shenyang Institute of Automation, Chinese Academy of Science, China); Dayou Liu (Shenyang Institute of Automation, Chinese Academy of Sciences, China); Qin Dai (Shenyang Ligong University, China)

W1Int_13 – *Simulation of DFB and DBR Lasers with Surface Gratings*

Ada Lona Dumitrescu (University of Aberdeen, United Kingdom (Great Britain))

W1Int_14 – *A Multi-Staged Dynamic Encryption Scheme Utilizing Composite Chaotic Maps*

Corina Macovei (Nițu), Mircea Raducanu and Dominic Cheroiu (National University of Science and Technology Politehnica of Bucharest, Romania)

W1Int_15 – *DC-DC Buck and Boost Converters with PID Control for Drone Applications*

Kristaps Stumps (University of Aberdeen, United Kingdom (Great Britain))

W1Int_16 – *Efficient Diffraction Grating Coupling of Light with Surface Plasmon Polariton Waves*

Aurelian Popescu and Dan Savastru (National Institute of R&D for Optoelectronics INOE 2000, Romania)

W1Int_17 – *Variable-Length Infrared Laser Cavity for Alternative Energetic Infrastructures*

Mihnea-Antoniu Covaci, Lorant Szolga and Ramona V. Galatus (Technical University of Cluj-Napoca, Romania)

W1Int_18 – *The Optical Absorption and Raman Scattering in Glassy Thin Films from the Intermediate Phase of As-S-Ge System*

Marina Ciobanu, Dumitru Tsiulyanu and Ana-Maria Tiuleanu (Technical University of Moldova, Moldova)

W1Int_19 – *Comparison and Evaluation of Yagi-Uda 5G Rejecting TV Reception Antennas*

Ishq Adam, Evangelos Vassos, Qasim Zeeshan Ahmed, Alistair Sambell and Nigel Schofield (University of Huddersfield, United Kingdom (Great Britain)); Zaharias D. Zaharis (Aristotle University of Thessaloniki, Greece); Vladimir K. Poulkov (Technical University of Sofia, Bulgaria); Pavlos Lazaridis (University of Huddersfield, United Kingdom (Great Britain))

W1Int_20 – *Modelling of Diffraction Efficiency of Surface Relief Gratings*

Alexei Meshalkin, Elena Achimova, Vladimir Abaskin, Alexandru Prisacar and Natalia Tsyntsaru (Moldova State University, Moldova)

W1Int_21 – *An EMI Heatmap with Image Fusion, Using OpenCV and a Logarithmic Detector*

Alexandru Gabriel Indricut (UPT, Romania); Teodor Petrita (Politehnica University of Timisoara & ANCOM, Romania)

W1Int_22 – *Coverage and EMF Spatial Asessment in Proximity of a Base Station with Drones*

> Maria-Lăcrimioara Toma and Cecilia-Valentina Bălulescu (Politehnica University of Timişoara, Romania); Teodor Petrita (Politehnica University of Timisoara & ANCOM, Romania)

W1Int_23 – *An Efficient Indoor Positioning Method Using Machine Learning and Multiple Wi-Fi Access Points*

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

W1Int_24 – *Throughput Performances in 5G MIMO System*

> Madalina-Iasmina Cosnita, Cristina Andras and Florin Alexa (Politehnica University of Timisoara, Romania); Teodor Petrita (Politehnica University of Timisoara & ANCOM, Romania)

Wednesday, August 28   18:05 - 19:20

W1Spec: SPECIAL SESSION: PH.D. STUDENTS

ROOM – A 203

Chairs: Gheorghe Brezeanu (National University of Science and Technology Politehnica of Bucharest, Romania), Adelaida Cristina Heiman (Constanta Maritime University, Romania)

18:05 *Preliminary Exploration of Underwater Debris in Lake Como, Italy During the High Tourist Season for Environmental Protection*

> Jassica Lawrence (University of Insubria, Italy); Nicola Castelnuovo (Villa Geno Proteus Assiciation, Italy); Ramona Giurea (Lucian Blaga University of Sibiu & Nicolae Balcescu Land Forces Academy, Romania); Roberta Bettinetti (Department of Human Sciences, Innovation and Territory University of Insubria)

18:20 *Optimizing Hybrid Vehicle Efficiency Integrating Solar and Wind Energy for Enhanced Performance*

> Cristian Helera and Dan Alexandru Stoichescu (National University of Science and Technology Politehnica Bucharest, Romania)

18:35 *Exploring and Analyzing Internet of Things Devices for Process Optimization in Industrial Environments*

> Marian Ileana, Maria Ioana Oproiu and Constantin Viorel Marian (National University of Science and Technology Politehnica Bucharest, Romania)

18:50 *Strategic Website Evaluation Through Finite State Machine Analysis Employing MATLAB*

> Marian Ileana (National University of Science and Technology Politehnica Bucharest, Romania)

19:05 *A Distance Averanging Approach to Reduce the Multipath Effect in Underwater Transducer Characterization*

> Gabriela Masgras (Constantin), Codruta Pricop and Razvan D. Tamas (Constanta Maritime University, Romania); Petrica Rizea (Invite Systems SRL., Romania)

Wednesday, August 28   19:30 - 22:00

WELCOME RECEPTION **– ROOM A 201 / Cafeteria**

Thursday, August 29

Thursday, August 29 9:00 - 11:20

T1Inv: PHOTONICS AND OPTOELECTRONICS

ROOM – A 201

Chairs: Ionica Cristea (Constanta Maritime University, Romania), Aurelian Popescu (National Institute of R&D for Optoelectronics INOE 2000, Romania)

9:00 *Cooperative Properties of Multiple Scattering Lasing and Their Application in Processing of Information*
> Nicolae Enaki (Institute of Applied Physics, Modova State University, Moldova)

9:20 *Photo-Formation of Solid Electrolytes Based on Self-Organized Chalcogenide Glasses for Memristors and Electronic Switchers*
> Dumitru Tsiulyanu, Ion Stratan and Marina Ciobanu (Technical University of Moldova, Moldova)

9:40 *Improving Foggy Images Acquired Throughout the Day for Better Visual Outcomes*
> Toadere Florin, Dr. (INCDTIM Cluj Napoca, Romania)

10:00 *Bound Excitons in Halogen Intercalated Transition Metal Dicalcogenides*
> Nikita Siminel and Leonid Kulyuk (Moldova State University, Institute of Applied Physics, Moldova)

10:20 *The Generation of Photonic "Molecules Under the Action of Ultraviolet Light in the DNA/RNA Dimerization Process Diana Podoleanu, Igor Costisen, Ion Munteanu, Elena Starodub, Nicolae Enaki*
> Nicolae Enaki (Institute of Applied Physics, Modova State University, Moldova)

10:40 *Low Light Images Enhancement*
> Toadere Florin, Dr. (INCDTIM Cluj Napoca, Romania)

11:00 *Sensing Principles and Methods for Automotive Applications*
> Marian Vladescu and Ionut Romeo Schiopu (National University of Science and Technology Politehnica Bucharest, Romania)

Thursday, August 29   11:20 - 11:50

COFFEE BREAK – Ground floor hall

Thursday, August 29   11:50 - 13:10

T2Inv: APPLIED MICROELECTRONICS

ROOM - A 201

Chair: Gheorghe Brezeanu (University Politehnica of Bucharest, Romania)

11:50 *SiO2/SiC Interface Passivation Techniques Using Thermal Treatments (Abstract)*
Razvan Pascu (National Institute for Research and Development in Microtechnologies - IMT Bucharest & National University of Science and Technology Politehnica Bucharest, Romania); Gheorghe Pristavu and Florin Draghici (National University of Science and Technology Politehnica Bucharest, Romania)

12:10 *Wide Temperature Range Modeling Considerations for Silicon Carbide Schottky Diodes*
Gheorghe Pristavu and Dan-Theodor Oneata (National University of Science and Technology Politehnica Bucharest, Romania); Razvan Pascu (National Institute for Research and Development in Microtechnologies - IMT Bucharest & National University of Science and Technology Politehnica Bucharest, Romania); Alina Elena Marcu, Florin Draghici and Gheorghe Brezeanu (National University of Science and Technology Politehnica Bucharest, Romania)

12:30 *Implementation of Microgrid Networks in Energy Management*
Constantin Hutanu ("1 Decembrie 1918" University, Romania) and Gheorghe Marc (Polytechnic University Energy Services providing Company Timisoara, Romania)

12:50 *Experimental Investigation of an NFC System Performance*
Adrian Tulbure ("1 Decembrie 1918" University of Alba Iulia, Romania); Andrei Tulbure (TU Cluj-Napoca, Romania); Dan Marginean (University of Alba Iulia, Romania); Ioan Szabo (STA Sebes, Romania)

Thursday, August 29   13:10 - 14:40

LUNCH - Cafeteria

Thursday, August 29   14:40 - 16:20

T3Inv: COMPUTING SYSTEMS, INFORMATION THEORY, AND ARTIFICIAL INTELLIGENCE

ROOM - A 201

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

14:40 *YOLOV4 Vs YOLOV8 Decisional Spaces Based Comparative Study*
Rodica Claudia Constantinescu, Bogdan Alexandrescu and Mihai Constantinescu (National University of Science and Technology Politehnica Bucharest, Romania)

15:00 *Real-Time Audio Signal Recognition System Using Machine Learning Techniques for Security Applications*

Rodica Claudia Constantinescu, Bogdan Alexandrescu, Teodora Mîrzan and Lucian Gruia (National University of Science and Technology Politehnica Bucharest, Romania)

15:20 *A Comparative Analysis Regarding the Efficiency of Some Algorithms on a 2D Application*

Bogdan Alexandrescu, Rodica Claudia Constantinescu, Ioana Maria Vadineanu and Alina Elena Sultana (National University of Science and Technology Politehnica Bucharest, Romania)

15:40 *Integrated and Automated Fire Detection System: A Comprehensive Review of Current Challenges and Methods, Future Trends and Prospects for Emerging Electronics Engineering with AI Integration*

Bogdan Alexandrescu, Rodica Claudia Constantinescu, Nicolae Costin Pistol and Dragos Ioan Sacaleanu (National University of Science and Technology Politehnica Bucharest, Romania)

16:00 *Equipment Failure Prediction Using Artificial Intelligence on Vibration Data*

Ovidiu Ratiu, Catalin Pop, Mircea Vlasin, Zoltan Padrah and Adrian Vatamanu (Control Data System, Romania)

Thursday, August 29   16:20 - 16:50

COFFEE BREAK – Ground floor hall

Thursday, August 29   16:50 - 18:30

T1Int: COMPUTING SYSTEMS, INFORMATION THEORY AND ARTIFICIAL INTELLIGENCE

ROOM: Ground floor hall

Chairs: Andreea Platica (Constanta Maritime University, Romania), Rodica Claudia Constantinescu (National University of Science and Technology Politehnica Bucharest, Romania)

T1Int_01 – *Shaping the Future of Intelligent Computing Systems Through Cybersecurity and AI*

Stefania Loredana Nita (Ferdinand I Military Technical Academy, Romania); Marius Iulian Mihailescu (SPIRU HARET University, Romania); Valentina Marascu (National Institute for Laser Plasma and Radiation Physics, Romania & SPIRU HARET University, Romania); Marius Rogobete (TITU MAIORESCU University, Romania)

T1Int_02 – *Application of Singular Value Decomposition for Low Rank Representation of Images*

Emil M Oanta (Constanta Maritime University, Romania)

T1Int_03 – *Methods and Algorithms for Analyzing Network Node Measurements to Predict Load and Correctly Size Nodes*

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

T1Int_04 – *Blockchain Solution for Road Traffic Pollution Monitoring and Regulation*

Bogdan Cristian Florea and Dragos Daniel Taralunga (National University of Science and Technology Politehnica Bucharest, Romania)

T1Int_05 – *Data Collection from Smartwatches and Smartbands*

Cecilia-Valentina Bălulescu (Politehnica University of Timișoara, Romania); Teodor Petrita (Politehnica University of Timisoara & ANCOM, Romania)

T1Int_06 – *A Behavioral Finance Research Agenda in the Era of AI-Driven Commercial Banking*

Nur Iylia Syafiqah Abdul Malik Nisam and Anusuyah Subbarao (Multimedia University Malaysia, Malaysia)

T1Int_07 – *Navigating AI Acceptance in the Restaurant Realm: Assessing the Potential Replacement of Humans by AI in the F&B Industry*

Anusuyah Subbarao (Multimedia University, Malaysia); Dragos Daniel Taralunga (National University of Science and Technology Politehnica Bucharest, Romania); Nur Iylia Syafiqah Abdul Malik Nisam (Multimedia University Malaysia, Malaysia)

T1Int_08 – *KETOP - A Keycloak Extension for TOTP*

Bianca-Daniela Ionașcu and Iulian Aciobanitei (Military Technical Academy Ferdinand I, Romania)

T1Int_09 – *A Versatile Helper Module for Remote Qualified Electronic Signatures*

Andrei Brînzea and Iulian Aciobanitei (Military Technical Academy Ferdinand I, Romania)

T1Int_10 – *K-Means Clustering Solution for Image Compression*

Emil M Oanta (Constanta Maritime University, Romania)

T1Int_11 – *AhoWEF: An Efficient Approach to Web Content Filtering Using Aho-Corasick*

Iulian Aciobanitei and Tudor Lepădatu (Military Technical Academy Ferdinand I, Romania)

T1Int_12 – *Introducing an Improved Approach in the Activity of a Business Through the Use of Modern Web Technologies*

Bogdan Alexandrescu, Rodica Claudia Constantinescu, Andrei Catalin Vlad and Dragos Ioan Sacaleanu (National University of Science and Technology Politehnica Bucharest, Romania)

T1Int_13 – *PKCS#11 Driver for Remote Qualified Electronic Signatures*

Andrei Brînzea, Radu Marian Toader and Mihai Togan (Military Technical Academy Ferdinand I, Romania)

T1Int_14 – *The Automation of the Configuration Process and Monitoring of Events Within a Data Center Network Infrastructure*

Bogdan Alexandrescu, Rodica Claudia Constantinescu and Vasile Vladut Sararu (National University of Science and Technology Politehnica Bucharest, Romania); Adriana Elena Radoi (Special Telecommunications Service, Romania)

T1Int_15 – *Analysis of Filler Concentration Influence on Epoxy Based Composite Properties Based on Neural Network Model*

Cristian Muntenita, Valentin Amortila, Larisa Titire and George Balasoiu (Dunarea de Jos University, Romania)

T1Int_16 – *Optimization of Tribological Behavior for an Epoxy-Clay Composite with Artificial Neural Networks*

Valentin Amortila, George Balasoiu, Cristian Muntenita and Larisa Titire (Dunarea de Jos University, Romania)

T1Int_17 – *Graph Partitioning and Multi-Criteria TOPSIS Analysis for Assessing Vulnerabilities of Critical Infrastructure Networks*

Simona Dinu, Vlad Vulcu, Gabriel Raicu and Ana Olteanu (Constanta Maritime University, Romania)

T1Int_18 – *Medical Image Enhancement Method Based on Wavelet Transform and Tikhonov Filter*

Haider Mustafa Mueen (University of Kufa, Iraq); Mina Zolfy Lighvan (University of Tabriz, Iran); Mohammed Hussein Jabardi (University of Kufa, Iraq)

T1Int_19 – *Utilizing Convolutional Neural Networks for Imbalanced ASNM-NPBO Intrusion Detection Dataset*

Mina Zolfy Lighvan (University of Tabriz, Iran); Neda Matin (Computer, Iran); Najibeh Farzi Veijouyeh (University of Tabriz, Iran); Mahsa Faramarzi Lighvan (Depatment of computer engineering ECE faculty,University of Tabriz Tabriz, Iran)

T1Int_20 – *Using ChatGPT to Write Space-Optimized Code*

Calin Bira, Iulian Busu, Alexandra-Mihaela Enescu and Horia-Răzvan Enescu (National University of Science and Technology Politehnica Bucharest, Romania)

T1Int_21 – *Measurements of Slot-Fed Circularly Polarized Layered Cylindrical DRA for X-Band Applications*

Rawad Asfour, Waled A Mohamed Albakosh and Salam Khamas (University of Sheffield, United Kingdom (Great Britain))

T1Int_22 – *Omnidirectional Hemispherical Dielectric Resonator Antenna for on BodyApplications*

Rawad Asfour, Tarek Saleh Abdou, Salam Khamas (University of Sheffield, United Kingdom (Great Britain))

T1Int 23 – *Dual Band Frequency Reconfigurable X-Band Rectangular Dielectric Resonator Antenna*

Rawad Asfour, Akrem Soltan, Salam Khamas (University of Sheffield, United Kingdom (Great Britain))

Thursday, August 29   16:50 - 18:30

T1Spec: Special Session: Mobility and training for beyond 5G ecosystems (MOTOR-5G / RECOMBINE)

ROOM - A 203

Chairs: Octavian Fratu (National University of Science and Technology Politehnica of Bucharest, Romania), Simona V. Halunga (National University of Science and Technology Politehnica of Bucharest, Romania)

16:50 *Swarm Intelligence for Sustainable 6G: A Novel Approach to Energy-Efficient IoT Networking*

Seyed Salar Sefati, Simona V. Halunga and Octavian Fratu (National University of Science and Technology Politehnica of Bucharest, Romania); Razvan Craciunescu (University Politehnica of Bucharest & Future Networks Lab, Romania)

17:10 *Optimized Tile Quality Selection in 360° Video Streaming*

Moatasim Mahmoud (Aristotle University of Thessaloniki, Greece & Singular Logic, Greece); Stamatia Rizou (Singular Logic, Greece); Andreas S. Panayides (CYENS Centre of Excellence, Cyprus & 3AE Health LTD, Cyprus); Pavlos Lazaridis (University of Huddersfield, United Kingdom (Great Britain)); Nikolaos V. Kantartzis and George K. Karagiannidis (Aristotle University of Thessaloniki, Greece); Vladimir K. Poulkov (Technical University of Sofia, Bulgaria); Zaharias D. Zaharis (Aristotle University of Thessaloniki, Greece)

17:30 *Towards 5G/6G Data Harmonization Through NLP and Semantic Web Technologies*

Mandeep Singh (Birmingham City University, United Kingdom (Great Britain)); Moatasim Mahmoud (Aristotle University of Thessaloniki, Greece & Singular Logic, Greece); Stamatia Rizou (Singular Logic, Greece); Zaharias D. Zaharis (Aristotle University of Thessaloniki, Greece); Pavlos Lazaridis (University of Huddersfield, United Kingdom (Great Britain)); Vladimir K. Poulkov (Technical University of Sofia, Bulgaria); Wenyan Wu (Birmingham City University B5 5JU Birmingham, UK)

17:50 *Codebook Based RIS Passive Beamforming Solutions: A Survey*

Ahmed Nor (University Politehnica Bucharest, Romania & Aswan University, Egypt); Octavian Fratu and Simona V. Halunga (University Politehnica of Bucharest, Romania)

18:10 *Non-Invasive Glucose Level Monitoring from PPG Using A Hybrid CNN-GRU Deep Learning Network*

Abdelrhman Y Soliman, Osama A. Omer and Ahmed Mubarak (Aswan University, Egypt); Ahmed Nor (University Politehnica Bucharest, Romania & Aswan University, Egypt); Octavian Fratu and Simona V. Halunga (University Politehnica of Bucharest, Romania)

Thursday, August 29   20:00 – 20:30

AWARD CEREMONY
ROOM – A 201

Thursday, August 29   20:30 - 22:00

GALA DINNER
ROOM – A 201

Friday, August 30

Friday, August 30   9:00 - 09:30

F1W: FIRST LONG-DISTANCE QUANTUM COMMUNICATION NATIONAL AND METROPOLITAN NETWORKS IN ROMANIA
ROOM – A 201

9:00 *Romanian National Quantum Communication Infrastructure (RoNaQCI)*
Bogdan Ciobanu, Mihai Carabas, Pantelimon George Popescu (National University of Science and Technology Politehnica of Bucharest, Romania)

Friday, August 30   9:30 - 11:10

F1Inv: SIGNALS AND SYSTEMS. COMMUNICATIONS

ROOM – A 201

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

9:30 *Dynamic Filter Length Reduction in NLMS for System Identification*
Elena-Valentina Dumitrașcu and Robert-Alexandru Dobre (National University of Science and Technology Politehnica of Bucharest, Romania)

9:50 *Regularized RLS Algorithm Based on Third-Order Tensor Decomposition*
Radu Otopeleanu, Camelia Elisei-Iliescu and Constantin Paleologu (National University of Science and Technology Politehnica of Bucharest, Romania); Jacob Benesty (INRS-EMT, University of Quebec, Canada); Silviu Ciochina (University Politehnica of Bucharest, Romania)

10:10 *Optimal Configuration of a Low Computational Siren Detector Using Bayesian Optimization*
Elena-Valentina Dumitrașcu and Robert-Alexandru Dobre (National University of Science and Technology Politehnica of Bucharest, Romania)

10:30 *New Affine Projection Tanh-Based Algorithms for Active Impulsive Noise Control*
Felix Albu and Ion Caciula (Valahia University of Targoviste, Romania); Daniela Hagiescu (Advanced Slisys SRL, Romania)

10:50 *Regularized Affine Projection Algorithm for Stereophonic Acoustic Echo Cancellation*
Cristian Stanciu, Cristian Anghel, Laura-Maria Dogariu, Ionut-Dorinel Ficiu and Lucian Stanciu (National University of Science and Technology Politehnica of Bucharest, Romania)

Friday, August 30   11:10 - 11:40

COFFEE BREAK – Ground floor hall

Friday, August 30   11:40 - 13:00

F2Inv: ENVIRONMENT PROTECTION APPLICATIONS

ROOM – A 201

Chairs: Catalin Faitar (Constanta Maritime University & CMU, Romania), Mariana Panaitescu (Constanta Maritime University, Romania)

11:40 *Background Radiation Monitoring*
   Sabina Nedkova (ASEN ZLATAROV & UAZ, Bulgaria); Plamena Atanasova and Stela Naydenova (ASEN ZLATAROV, Bulgaria); Mariana Panaitescu and Fanel- Viorel Panaitescu (Constanta Maritime University, Romania)

12:00 *The Concept of Green Management for Improving the Environmental Performance of Traditional Energy Facilities*
   Anzhelika Karaeva (University of Insubria, Italy); Florentina Aurelia Vasilica (National University of Science and Technology Politehnica Bucharest, Romania); Vincenzo Torretta and Elena Cristina Rada (Insubria University, Italy)

12:20 *Assessment of the Offshore Wind Energy Along the European Cost Line*
   Daniel Ganea and Liliana Rusu (Dunarea de Jos University of Galati, Romania)

12:40 *Artificial NN-Based Analysis of the Black Sea Offshore Wind Patterns*
   Costel Humelnicu and Daniel Ganea (Dunarea de Jos University of Galati, Romania)

Friday, August 30   13:00 - 14:30

LUNCH - Cafeteria

Friday, August 30   14:30 - 16:30

F1Int: APPLICATIONS IN ENVIRONMENT PROTECTION, ELECTRIC, MECHANIC AND ELECTROMECANIC SYSTEMS

ROOM – Ground floor hall

Chairs: Catalin Faitar (Constanta Maritime University & CMU, Romania), Mariana Panaitescu (Constanta Maritime University, Romania)

F1Int_01 – *Experimental Research Regarding the Hydrocarbons in the Romanian Black Sea Waters Area*
   Florentina Aurelia Vasilica and Carmen-Anca Safta (National University of Science and Technology Politehnica Bucharest, Romania); Mariana Panaitescu (Constanta Maritime University, Romania); Fanel- Viorel Panaitescu (Constanta Maritime University, Bulgaria)

F1Int_02 – *Risk Assessment Using New Environmental Simulation Tools*

Florentina Aurelia Vasilica and Carmen-Anca Safta (National University of Science and Technology Politehnica Bucharest, Romania); Mariana Panaitescu, Fanel- Viorel Panaitescu and Sofroniei Cristina (Constanta Maritime University, Romania)

F1Int_03 – *Multi-Processor Architecture Implemented for Indoor Air Quality Monitoring Devices*

Mariana Panaitescu (Constanta Maritime University, Romania); Dumitrescu Marius-Valentin (National University of Science and Technology, Romania); Fanel- Viorel Panaitescu and Ionut Voicu (Constanta Maritime University, Romania); Cocarta Diana-Mariana (National University of Science and Technology Bucharest, Romania)

F1Int_04 – *Marine Auxiliary Engine Piston Assembly Solidworks Study - Dynamic Behaviour Analysis*

Catalin Faitar, Fanel- Viorel Panaitescu, Mariana Panaitescu, Ionut Voicu, Scupi Andrei-Alexandru, Nicolae Buzbuchi and Anastasia Duse (Constanta Maritime University, Romania)

F1Int_05 – *Developing a Conceptual Model for Sustainable Energy Management Systems in Universities*

Alexandru Olteanu (Asociația Conexiuni, Romania); Claudiu Vasile Kifor and Mihai Victor Zerbes (Lucian Blaga University of Sibiu, Romania); Ramona Giurea (Lucian Blaga University of Sibiu & Nicolae Balcescu Land Forces Academy, Romania); Elena Cristina Rada (Insubria University, Italy); Anzhelika Karaeva (University of Insubria, Italy)

F1Int_06 – *Enhancing Operational Efficiency and Environmental Sustainability by Improving the Maintenance Process in an Industrial Organization*

Ioan Cristian Nicolae (Asociația Conexiuni, Romania); Mihai Victor Zerbes and Liliana Georgeta Popescu (Lucian Blaga University of Sibiu, Romania); Elena Cristina Rada (Insubria University, Italy); Ramona Giurea (Lucian Blaga University of Sibiu & Nicolae Balcescu Land Forces Academy, Romania); Anzhelika Karaeva, Vincenzo Torretta and Fabio Conti (University of Insubria, Italy)

F1Int_07 – *Thermodynamic Analysis of a Current Marine Refrigeration System in the Case of Sea Water Cooled Condenser*

Feiza Sucuran Memet (Constanta Maritime University, Romania)

F1Int_08 – *Energy Efficiency Assessment of a Vapour Compression Refrigeration System with R134a, R600a and R600a/Al2O3 – A Theoretical Comparative Study*

Feiza Sucuran Memet (Constanta Maritime University, Romania)

F1Int_09 – *Study of the Drinking Water Quality from Dambovita County*

Ionita Ionica, Hossu Ana-Maria, Avram Daniela, Poinescu Aurora Anca and Mărgărit Roxana Elena (Valahia University, Romania)

F1Int_10– *Maximizing Wind Energy: The Crucial Role of Altitude and Coastal Proximity*

Ciprian Popa, Nicolae-Silviu Popa and Mihai Balaceanu (Politehnica Bucharest National University for Science and Technology, Romania); Alexandru Pohontu, Andrei-Darius Deliu and Mihaita-Catalin Cuciureanu (Marine Engineering Faculty Naval Academy "Mircea cel Bătrân")

F1Int_11 – *Comparing the Performance of Photovoltaic Panels Onboard Ships with Coastal Photovoltaic Installations*

Nicolae-Silviu Popa, Andrei-Darius Deliu and Ovidiu Cristea (MIRCEA CEL BATRAN NAVAL ACADEMY, Romania); Mihai Balaceanu, Alexandru Pohontu and Ciprian Popa (Electrical Engineering Department Politechnica University of Bucharest, Romania)

F1Int_12 – *Study of the Phosphocalcic Glasses Doped with Silver and Copper I. Synthesis and Characterization of the Glasses*

Avram Daniela, Ungureanu Dan Nicolae and Ionita Ionica (Valahia University, Romania); Cosmina Cristiana Avram (SC ALMINA TRADING SA, Romania); Hossu Ana-Maria (Valahia University, Romania)

F1Int_13 – *Study of the Phosphocalcic Glasses Doped with Silver and Copper II. Study of the Bioactivity by XRD Analysis*

Avram Daniela, Ungureanu Dan Nicolae and Ionita Ionica (Valahia University, Romania); Cosmina Cristiana Avram (SC ALMINA TRADING SA, Romania); Poinescu Aurora Anca (Valahia University, Romania)

F1Int_14 – *Qualitative Analysis of Some Benzodiazepines Performed by Densitometry*

Hossu Ana-Maria, Ionita Ionica, Poinescu Aurora Anca, Avram Daniela and Stoica Alexandru (Valahia University, Romania); Cosmina Cristiana Avram (SC ALMINA TRADING SA, Romania)

F1Int_15 – *The Influence of the Chrome Layer Thickness on the Physical-Mechanical Properties of Steels*

Poinescu Aurora Anca, Ionita Ionica, Hossu Ana-Maria, Avram Daniela and Simona Mihai (Valahia University, Romania)

F1Int_16 – *Numerical Simulation of Ballistic Impact of a 1/1 Type Aramid Fabric Panel at Meso-Level*

Larisa Titire and Cristian Muntenita (Dunarea de Jos University, Romania)

F1Int_17 – *Heat Index and Urban Dambovița River Temperature Nexus*

Ionescu Cristina Sorana, Gogoase Nistoran, Ioana Opris, Ştefan Mugur Simionescu and Cristian Copilău (National University of Science and Technology, Politehnica of Bucharest, Romania)

F1Int_18 – *Analytical Models of Experimental Data Expressed as Diagrams in the Automatic Materials' Selection*

Emil M Oanta (Constanta Maritime University, Romania)

F1Int_19 – *Outdoor Measurements of Traffic Pollution near Bucharest City*

Popescu Razvan Stefan (Technical University of Construction Bucharest, Romania); Popescu Lelia Letitia (University of Construction Bucharest, Romania); Andrei Preda (Maritime University of Constanta, Romania)

F1Int_20 – *Effect of Magnetic Traction Force on Drive Vibration Activity*

Genadijs Kobenkins (Riga Technical University, Latvia); Marks Marinbahs (JSC Riga Electric Machine Building Works, Latvia); Nikita Rilevs and Anatolijs Bizans (Riga Technical University, Latvia); Olegs Sliskis (JSC Riga Electric Machine Building Works, Latvia)

F1Int_21 – *Alternative Superstructure Arrangements on Large Oil Tankers - the Orientable Superstructure*

Ene Iulian (Constanta Maritime University, Romania)

F1Int_22 – *Experimental Set-Up and Preliminary Study on the Evolution of Tire-Road Contact Patch*

Ioan-Cozmin Manolache-Rusu (Ștefan Cel Mare University of Suceava, Romania); Cornel Suciu (Stefan Cel Mare University of Suceava, Romania); Ionut-Cristian Românu (Stefan Cel Mare University, Romania); Andrei Cosmin Dumistrăcel (Stefan Cel Mare University of Suceava, Romania)

F1Int_23 – **Preparation of model micro and nano PET particles for environmental research by using laser ablation**

Eliska Kamenikova (Institute of Chemistry and Technology of Environmental Protection, Brno University of Technology, Faculty of Chemistry, Czech Republic), Jakub Palovcik (Materials Research Center, Brno University of Technology, Faculty of Chemistry, Czech Republic), Cristian Udrea, Mihaela Bojan (Laser Department, National Institute for Laser, Plasma and Radiation Physics, Bucharest, Romania), Lucie Sudomova (Research on PET recycling, rPET InWasdte, Rosice, Czech Republic), Jiri Kucerik (Departament of Agrochemistry, Soil Science, Microbiology and Plant Nutrition, Mendel University in Brno, Czech Republic)

Friday, August 30   14:30 - 16:30

F1Spec: WORKSHOP: FLOATING OFFSHORE WIND TECHNOLOGIES FOR BLACK SEA (BLOW)

ROOM – A 203

Chairs: Fanel-Viorel Panaitescu (Constanta Maritime University, Romania), Mariana Panaitescu (Constanta Maritime University, Romania)

14:30 *Sensing System for Environmental Monitoring on the Black Sea Offshore Platform*

Mădălin Silion, Lucian Luminaroiu, Cristian Beceanu, Cornelia Alexandru, Lucia Necula, Maria-Laura Rosu and Ioana Taranu (BEIA Consult International SRL, Romania); George Suciu (Politehnica University of Bucharest & BEIA Consult International SRL, Romania); Mariana Panaitescu (Constanta Maritime University, Romania)

14:50 *Operational Equipments for Wind and Waves Monitoring in Offshore Marine Industry*

Mariana Panaitescu, Fanel- Viorel Panaitescu, Ionut Voicu, Scupi Andrei-Alexandru and Catalin Faitar (Constanta Maritime University, Romania); George Suciu, Mădălin Silion, Stefan Stefanescu and Nicoleta Capbun (Beia Consult International SRL, Romania)

15:10 *Waves Induced Wind Impact on Floating Offshore Wind Turbines (FOWT) in Black Sea*

Gabriela Larisa Maravela (University Politehnica of Bucharest, Romania); Gheorge Lazaroiu (Doctoral School of Energy Engineering University Politehnica of Bucharest Bucharest, Romania)

15:30 *Consequences of a Major Crude Oil Spill in the Territorial Sea*

Ionut Voicu, Mariana Panaitescu and Fanel- Viorel Panaitescu (Constanta Maritime University, Romania)

16:50 *Systems for Wind Monitoring on Black Sea Offshore*

Scupi Andrei-Alexandru, Fanel-Viorel Panaitescu, Mariana Panaitescu, <u>Ionut Voicu</u> and Catalin Faitar (Constanta Maritime University, Romania);

16:10 *Implementation and Evaluation of the Bearing Monitoring System in the Wind Sector Using Vibration Sensors in the Context of Maintenance Engineering*

<u>Paula Gabriela Panait</u> and Chircor Mihael (Constanta Maritime University, Romania); Nedelcu Dumitru (Gheorghe Asachi TUIASI, Romania); Zăgan Remus and Ene Iulian (Constanta Maritime University, Romania)

Friday, August 30 16:30 - 18:10

F2Spec Special Session: Maximizing the renewable energy integration capacity of distribution networks (MAREHC)

ROOM – A 203

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

16:30 *Application of Gasification Technology to Capture CO2 from Combustion Gases*

<u>Mihăescu Lucian,</u> Gheorghe Lăzăroiu, Grigoriu Rodica Manuela and Dorel Stoica (National University of Science and Technology Politehnica Bucharest, Romania); Mohammed Gmal Osman Abdelfadeel (National University of Science and Technology Politehnica Bucharest & Constanta Maritime University, Romania)

16:50 *Optimal Power System Design for Off-Grid Residences in Dobrogea, Romania: Integrating Renewable Energy and Generator Technology*

<u>Mohammed Gmal Osman Abdelfadeel</u> (National University of Science and Technology Politehnica Bucharest & Constanta Maritime University, Romania); Cristian Valentin Strejoiu (National University of Science and Technology Politehnica Bucharest, Romania); Cornel Panait (Constanta Maritime University, Romania); Dorel Stoica and Gheorghe Lăzăroiu (National University of Science and Technology Politehnica Bucharest, Romania)

17:10 *Optimizing Solar Photovoltaic Systems: A Geometric Approach to Enhance Energy Production and Economic Viability*

<u>Cristian Valentin Strejoiu</u> (National University of Science and Technology Politehnica Bucharest, Romania); Mohammed Gmal Osman Abdelfadeel (National University of Science and Technology Politehnica Bucharest & Constanta Maritime University, Romania); Cornel Panait (Constanta Maritime University, Romania); Gheorghe Lăzăroiu and Dorel Stoica (National University of Science and Technology Politehnica Bucharest, Romania)

17:30 *Heat Pump Used for Heating Installations on Ships*

<u>Sorin Dimitriu,</u> Laurentiu Lipan and Alexandra Catalina Lazaroiu (National University of Science and Technology Politehnica Bucharest, Romania)

17:50 *Low Voltage Ride Through Analysis for Connecting Energy Storage Systems to the Power System*

<u>Georgiana Balaban</u> and George Cristian Lazaroiu (National University of Science and Technology Politehnica Bucharest, Romania); Mariacristina Roscia (Universita di Bergamo, Italy)