

12th International Conference on Energy and Environment 2025

Towards Future Energy



FINAL PROGRAM

ABOUT THE ORGANIZERS

National University of Science and Technology POLITEHNICA Bucharest



National University of Science and Technology POLITEHNICA Bucharest (NUSTPB) is a comprehensive university with centuries of tradition. The university branches are positioned strategically in the most industrially developed areas of the country. The Bucharest Branch is the largest and oldest technical university in the country. Since its foundation in 1818, it has worked towards accelerating the industrial revolution of the country and becoming a scientific and cultural hub, not only for the academic community, but for the entire society. The Pitești Branch has been recognized since its foundation in 1962, as the main source of highly qualified specialists in various fields like science, arts, philology, law, economics, automotive engineering and sports. It continues to spark the

interest of many students from all over the world, being one of the largest and oldest centers for teaching Romanian to foreign students.

NUSTPB is now the largest university in the country, with 21 faculties and over 38.000 students, having access to 87 cutting-edge Research Centers and a total of 380 Bachelor and Master's programs of which 55 are taught in English, French, and German. NUSTPB has a constant collaboration with most major companies in the region, and the students benefit from internship agreements with almost 1000 international companies.

Academy of Romanian Scientists



At the first congress organised to celebrate 40 years since the Association of Romanian Scientists was established, with the topic „Science at the End of the Millennium”, General Professor Dr. Vasile Căndea, PhD. proposed the return of the institution to the appellation it had between 1935-1948, namely that of „ACADEMY”, while preserving certain elements of the title of the association, and thus the designation became „Academy of Romanian Scientists”, hereinafter abbreviated AOSR.

The adoption of the name of „Academy of Romanian Scientists (AOSR)” was approved by the General Assembly of AOSR of 22-24 May 1996, held under the title „First Congress of AOSR” in the Parliament House, and in the presence of many members of the Romanian Academy (Eugen Simion, Vice President of the Romanian Academy, Marius Sabin Peculea, General Secretary of the Romanian Academy, N.N. Constantinescu, former General Secretary of the Romanian Academy between 1990-1994, Alexandru Balaci, Mihnea Gheorghiu, President of the Section “Arts, Architecture and Audiovisual” of the Romanian Academy, Nicolae Cajal, President of the Section “Medical Sciences” of the Romanian Academy, Cristofor Simionescu, Vasile Stănescu, Toma Dordea, Constantin Bălăceanu-Stolnici, Gabriel Țepelea, Răzvan Teodorescu, Dorel Zugrăvescu), of prominent members of AOSR (Dan Amedeo Lăzărescu, Corneliu Coposu) and 40 scientists from abroad. Mr. Eugen Simion, Vice President of the Romanian Academy at that time, participated as member of the presidium general assembly. None of the attendees objected to the proposal of debating the change of the name, and the decision was unanimously adopted.

The Academy of Romanian Scientists is the successor and only heir of the Academy of Sciences of Romania (1936-1948) and of the Association of Romanian Scientists, founded by HCM no.1012 / 30 May 1956, and which in 1996 changed its name from Association of Romanian Scientists in Academy of Romanian Scientists (court order of 3 October 1996, adopted by the Bucharest District 1 Court, File 231 / P.J. / 1996).

WEC-Romanian National Committee



The World Energy Council is the principal impartial network of leaders and practitioners promoting an affordable, stable and environmentally sensitive energy system for the greatest benefit of all.

Formed in 1923, the Council is the UN-accredited global energy body, representing the entire energy spectrum, with more than 3000 member organisations located in over 90 countries and drawn from governments, private and state corporations, academia, NGOs and energy-related stakeholders.

The World Energy Council informs global, regional and national energy strategies by hosting high-level events, publishing authoritative studies, and working through its extensive member network to facilitate the world's energy policy dialogue.

The World Energy Council is the world's principal network of energy leaders and practitioners. The organisation has a coordinating Secretariat based in London, United Kingdom, under the direction of the Secretary General who reports to the WEC's board, the Officers Council, under the leadership of an elected Chair.

The key functions of the WEC are guided by the Standing Committees, made up of elected members from across the world. The WEC gathers annually for an Executive Assembly to agree the strategic direction of the organisation.

WEC's National Member Committee operates independently under a regionalised structure, with elected Regional Vice Chair's to oversee activities and ensure coordination.

Since it was created in 1923, when visionary Daniel Dunlop brought together 40 countries to discuss the problems facing the global energy industry, the WEC has been non-governmental and non-commercial. Founded in the aftermath of war, it has withstood many changes, from geopolitical and economic upheavals to a complete shift in the way people understand and use energy. It has had to adapt to a changing world without ever straying from the initial concept of an organisation that is impartial, objective and realistic in its analyses and in its agendas for action in order to promote sustainable energy for all.

Today, the WEC has almost 100 national member committees, and its member list includes governments, businesses and expert organisations. The World Energy Congress, held over 20 times since the WEC's founding, is recognised as the world's premier energy gathering. As we move forward through the 21st century, the WEC continues to grow and expand, building on its long and stable history as one of the key players on the global energy scene.

COMMITTEES

Conference Program Committees

- **Horia Necula**, *IEEE member*
- **Adrian Badea** – *Conference Honorary Chair, IEEE member*
- **Mircea Eremia** – *IEEE Romania Section*
- **Claudia Popescu**, *IEEE member*
- **Lăcrămioara - Diana Robescu**, *IEEE member*
- **Ștefan Gheorghe** - *WEC Romanian Committee, IEEE member*
- **Lucian Toma** - *IEEE Romania Section Chair*

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- **Constantin Bulac** – *National University of Science and Technology POLITEHNICA Bucharest, Romania*

- **Costin Ioan Coşoiu** - *Technical University of Civil Engineering Bucharest, Romania*
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- **Adrian Nicolae Stan**
- **Adrian Stroilescu**
- **Elena Vasile**

CIEM 2025

AT A GLANCE FULL PROGRAM

Thursday 23 rd October 2025								
09:00 – 10:00	Registration: AULA MAGNA, POLITEHNICA Bucharest							
10:00 – 12:30	Opening Ceremony Faculty of Energy Engineering Anniversary - 75 Years of Empowering Excellence in Education, Research and Innovation							
12:30 – 13:30	Lunch (AULA Magna Hall)							
14:00 – 16:00		Workshop Education in energy engineering, university-industry partnership Room 3.1		Section 1 Electrical Power Systems & Smart Grids (1) Papers 3,11,29,50,55,60 Room 4.1		Section 2 Energy Management & Security, Sustainability and Resilience in Energy (1) Papers 6,27,34,47,56 Room 4.2		Section 4 Renewable Energies (1) Papers 19,22,35,39,41 Room 3.2
16:00 – 16:15	Coffe Break							
16:15 - 17:30		Section 5 Advanced Power Generation Systems & Technologies Papers 24,28,42,51,61 Room 3.1		Section 6 Smart Cities & Digital Transformation in Energy Papers 21,40,37,45 Room 3.2				
19:00 – 22:00	Gala Dinner							

CIEM 2025

AT-A-GLANCE FULL PROGRAM

Friday 24 th October 2023						
09:30 – 11:00		Technical Session <i>in honor and in memoriam</i> <i>Professor Cezar Ionescu</i> <i>Data mining and wind / photovoltaic power forecast</i> Papers 8,23,49 Council Room 2nd floor		Section 4 <i>Renewable Energies</i> (2) Papers 16,17,33,43,52,57 Room 3.2	Section 3 <i>Applied energy</i> Papers 18,30,31,32,44,46,53 Room 4.2	Technical Sesssion <i>Hybrid energy system with digital twin augmentation - HESTIA</i> Room 4.1
	11:00 – 11:30	Coffee Break (POLITEHNICA Central Library, 4th floor)				
	11:30 – 13:00		Section 2 <i>Energy Management & Security, Sustainability and Resilience in Energy</i> (2) Papers 5,7,20,25,36 Room 3.2		Section 1 <i>Electrical Power Systems & Smart Grids</i> (2) Papers 9,10,12,15,48,58,59 Room 3.1	Technical Session <i>Energy vectors integration for system and customer benefits</i> Room 4.2
13:00 – 13:30		Closing Ceremony (POLITEHNICA Central Library, Room 4.1)				
13:30 – 14:30	Lunch (POLITEHNICA Central Library, 4th floor)					

*11:30 – 12:00, Opening of the RenewAcad Energetica Practical Training Center, Faculty of Energy Engineering, EM Hall

AT-A-GLANCE FULL PROGRAM

Thursday 23 October 2025

9:00 – 10:00 Registration - **AULA MAGNA, POLITEHNICA Bucharest**

10:00 – 12:30 Opening Ceremony

Faculty of Energy Engineering Anniversary - 75 Years of Empowering Excellence in Education, Research and Innovation

12:30 – 13:30 Lunch - **AULA MAGNA Hall, POLITEHNICA Bucharest**

14:00 – 16:00

- ◆ **Section 1:** Electrical Power Systems & Smart Grids (1) - **POLITEHNICA Central Library, Room 4.1**
- ◆ **Section 2:** Energy Management & Security, Sustainability and Resilience in Energy (1) - **POLITEHNICA Central Library, Room 4.2**
- ◆ **Section 4:** Renewable Energies (1) - **POLITEHNICA Central Library, Room 3.2**
- ◆ **Workshop:** Education in energy engineering, university-industry partnership - **POLITEHNICA Central Library, Room 3.1**

16:00 – 16:15 Coffee break - **POLITEHNICA Central Library, 3rd floor**

16:15 – 17:30

- ◆ **Section 5:** Advanced Power Generation Systems & Technologies - **POLITEHNICA Central Library, Room 3.1**
- ◆ **Section 6:** Smart Cities & Digital Transformation in Energy - **POLITEHNICA Central Library, Room 3.2**

19:00 – 22:00 Gala Dinner (*Aria TNB Restaurant, Bd. Nicolae Bălcescu nr 2, sector 1*)

Friday 24 October 2025

09:30 – 11:00

- ◆ **Section 4:** Renewable Energies (2) - **POLITEHNICA Central Library, Room 3.2**
- ◆ **Section 3:** Applied Energy - **POLITEHNICA Central Library, Room 4.2**
- ◆ **Technical Session** in honor and in memoriam Professor Cezar Ionescu: Data mining and wind / photovoltaic power forecast - **POLITEHNICA Central Library, Council Room 2.2**
- ◆ **Technical Sesssion:** Hybrid energy system with digital twin augmentation-HESTIA - **POLITEHNICA Central Library, Room 4.1**

11:00 – 11:30 Coffee break - **POLITEHNICA Central Library , 4th floor**

11:30 – 13:00

- ◆ **Section 1:** Electrical Power Systems & Smart Grids (1) - **POLITEHNICA Central Library, Room 3.1**
- ◆ **Section 2:** Energy Management & Security, Sustainability and Resilience in Energy (1) - **POLITEHNICA Central Library, Room 3.2**
- ◆ **Technical Session:** Energy vectors integration for system and customer benefits - **POLITEHNICA Central Library, Room 4.2**

11:30 – 12:00

- ◆ Opening of the **RenewAcad Energetica Practical Training Center**, Faculty of Energy Engineering, EM Hall

12:00 – 13:00

- ◆ **Technical Session:** RenewAcad Energetica Practical Training Center - education and university partnerships for the training of the new generation in renewable energy - **POLITEHNICA Central Library, Room 4.1**

13:00 – 13:30 Closing Ceremony – **POLITEHNICA Central Library, Room 3.1**

13:30 – 14:30 Lunch – **POLITEHNICA Central Library , 4th floor**

SECTION 1: Electrical Power Systems & Smart Grids

Thursday 23 October 2025, 14:00 - 16:00

Location: POLITEHNICA Central Library – Room 4.1

Session Chairs:

Bogdan-Constantin NEAGU (Gh. Asachi Technical University of Iași, Romania)

Constantin BULAC (National University of Science and Technology POLITEHNICA Bucharest, Romania)

- **S1-3** - MANAGEMENT OF INTEGRATED RENEWABLE ENERGY SOURCES, STORAGE SYSTEMS, AND RESERVE GENERATION SOURCES IN POWER SYSTEMS - *Adrian Florian Vlada, Stefan Gheorghe*
- **S1-9** - ANOMALY DETECTION IN ELECTRICAL CONSUMPTION DATA WITH CLUSTERING ALGORITHMS - *Daniela F. Niste, Sorin Gh. Pavel, Horia G. Beleiu, Andrei C. Cziker*
- **S1-10** - CLASSIFYING CONSUMERS BASED ON CONSUMPTION PROFILE USING MACHINE LEARNING - *Daniela F. Niste, Radu-Adrian Tîrnovan, Cosmin Dărab, Marius Misaros*
- **S1-11** - OPTIMIZING LOAD DISTRIBUTION TO REDUCE TECHNICAL LOSSES USING GENETIC ALGORITHMS IN MATLAB - *Daniela F. Niste, Andrei C. Cziker, Anca Miron, Marius Misaroș*
- **S1-12** - ANALYZING THE IMPACT OF HARMONICS IN INDUSTRIAL NETWORKS USING FFT IN MATLAB - *Daniela F. Niste, Sorin Gh. Pavel, Radu-Adrian Tîrnovan, Corina G. Martineac, Horia G. Beleiu*
- **S1-15** - POST-PROCESSING DATA IN SMART GRIDS - *Robert-Alexandru Andrei, Bogdan-Mihai Zamfir, Cristian-Cornel Andrei, Radu-Florin Porum*

SECTION 1: Electrical Power Systems & Smart Grids

Friday 24 October 2025, 11:30 - 13:00

Location: POLITEHNICA Central Library – Room 3.1

Session Chairs:

Gheorghe GRIGORAȘ (Gh. Asachi Technical University of Iași, Romania)

Ion TRIȘTIU (National University of Science and Technology POLITEHNICA Bucharest, Romania)

- **S1-29** - BRIEF HISTORY OF THE EVOLUTION OF ELECTRICAL NETWORK AND PROTECTION SYSTEMS – *Ovidiu-Emanuel Chiritescu, Sorina Costinas*
- **S1-48** - LOAD FLOW CALCULATION IN ELECTRICITY DISTRIBUTION SYSTEMS USING ARTIFICIAL NEURAL NETWORKS - *Ovidiu Ivanov, Ana-Jeniffer Bontea, Gheorghe Grigoras, Mihai-Alexandru Baci, Mihai Gavrilas*
- **S1-50** - DECISION-MAKING SUPPORT SYSTEM FOR PHOTOVOLTAIC-RICH LOW VOLTAGE DISTRIBUTION NETWORKS FEATURING INTEGRATED ENERGY STORAGE SYSTEMS - *Gheorghe Grigoras, Stefania Galbau, Bogdan Neagu, Florina Scarlatache, Crenguta Bobric, Ovidiu Ivanov*
- **S1-55** - A COMPARATIVE STUDY OF HYBRID PV–HYDROGEN AND PV–BATTERY STORAGE SYSTEMS FOR OPTIMAL PLANNING OF STAND-ALONE MICROGRIDS - *Florina Scarlatache, Gheorghe Grigoras, Bogdan Constantin Neagu, Vlad Andrei Scarlatache, Nicolae Asavei*
- **S1-58** - MODELLING AND SIMULATION OF LOCAL ENERGY COMMUNITIES – A TECHNICAL POINT OF VIEW - *Bogdan-Petru Dobrin, Lucian Toma, Nicolae Anton, Mihai Sanduleac*
- **S1-59** – ASSESSMENT OF TRANSMISSION GRID HOSTING CAPACITY IN THE SOUTH-EASTERN AREA OF ROMANIA UNDER HIGH RENEWABLE PENETRATION – *Luisa-Nicolle Vochescu, Valentin Mohanu, Andrei-Marius Tudose, Ion Triștiu*

SECTION 2: Energy Management & Security, Sustainability and Resilience in Energy

Thursday 23 October 2025, 14:00 - 16:00

Location: POLITEHNICA Central Library – Room 4.2

Session Chairs:

Roxana PATRASCU (National University of Science and Technology POLITEHNICA Bucharest, Romania)

Eduard MINCIUC (National University of Science and Technology POLITEHNICA Bucharest, Romania)

- **S2-6** - INORGANIC NITROGEN TRANSFORMATIONS USING VARIOUS ATTACHED GROWTH ZONES IN BIOREACTORS - *Adel S. Faskol, Gabriel Racoviteanu, Elena Vulpasu*
- **S2-27** - EXPERIMENTAL IN-SITU RESEARCH ON THE WASTEWATER AERATION PROCESS IN THE SEWERAGE SYSTEM - *Tudor-Adrian Florea, Corina Boncescu, Dan Niculae Robescu*
- **S2-34** - ASSESSING AIR POLLUTION MITIGATION TECHNIQUES IN LARGE-SCALE ENERGY PRODUCTION: A CASE STUDY FROM SOUTHWESTERN ROMANIA – *Elena-Laura Barbu, Diana Mariana Cocârță, Ana-Maria Velcea*
- **S2-47** - CORROSION AND PIPE ROUGHNESS INFLUENCE ON WATER DISTRIBUTION SYSTEM FOR A THERMAL POWER PLANT - *Adrian Cătălin Tudora, Corina Boncescu, Lăcrămioara Diana Robescu*
- **2-56** - SPATIO-TEMPORAL ANALYSIS OF SUSPENDED MATERIAL IN THE LOM-PANGAR DAM USING GIS TECHNIQUE - *Rodrigue Fotie Lele, Marius-Daniel BONTOS, Mihaela-Amalia DIMINESCU, Issoufou OUEDRAOGO, Alphonse EMADAK*

SECTION 2: Energy Management & Security, Sustainability and Resilience in Energy

Friday 24 October 2025, 11:30 - 13:00

Location: POLITEHNICA Central Library – Room 3.2

Session Chairs:

Virginia PETRE (National University of Science and Technology POLITEHNICA Bucharest, Romania)

Codruta BENDEA (University of Oradea, Romania)

- **S2-5-** UNIVERSAL TOWERS: ENHANCING TRANSMISSION LINES RESILIENCE IN ROMANIA - *Gabriel-Răzvan Donciu, Mihai Sănduleac, Daniel Mărginean*
- **S2-7** - A STUDY ON SUSTAINABLE SOLUTIONS FOR AIR FILTRATION IN HVAC SYSTEMS - *Radka Atanasova, Ivan Dimchev, Mihail Panchev*
- **S2-20** - ENERGY RECOVERY FROM RESIDENTIAL AIR CONDITIONING SYSTEMS WITH A THERMOELECTRIC GENERATOR - *Paul Alexandru Danca, Alexandru-Ionel Constantin, Corina Babutanu, Florentina Bunea, Alexandru-Ionel Constantin*
- **S2-25-** SEAT HEATING TECHNOLOGIES IN VEHICLES: A COMPARATIVE PERFORMANCE STUDY- *Paul Alexandru Danca, Alexandru Cernei, Ilinca Nastase, Mihnea Sandu, Nicoleta Tanase, Florin Bode, Paul Alexandru Danca*
- **S2-36-** IMPROVING THE ENERGY PERFORMANCE OF TIMBER HOUSES IN A RESORT VILLAGE - *Penka Zlateva, Martin Ivanov, Momchil Vassilev, Angel Terziev*

SECTION 3: Applied Energy

Friday 24 October 2025, 9:30 - 11:00

Location: POLITEHNICA Central Library – Room 4.2

Session Chairs:

Georgiana DUNCA (National University of Science and Technology POLITEHNICA Bucharest, Romania)

Andrei-Mugur GEORGESCU (Technical University of Civil Engineering Bucharest, Romania)

- **S3-32** - NUMERICAL MODELING OF A CENTER-PIVOT IRRIGATION SYSTEM USING EPANET: TOWARD DIGITAL TWINS IN AGRICULTURAL WATER MANAGEMENT – *Andrei-Mugur Georgescu, Sanda-Carmen Georgescu*
- **S3-31** - NUMERICAL SIMULATION OF THE CAPACITY AND EFFICIENCY OF A HYDRO-PNEUMATIC ENERGY STORAGE SYSTEM - *Matei-Razvan Georgescu, Mihnea Sandu*
- **S3-18** - CALCULUS OF EXERGY DESTRUCTION IN THE TRANSITORY FILLING PROCESS OF A COMPRESSED AIR TANK – *Adalia Andreea Percembli (Chelmuș), Daniel Dima, Horațiu Pop, Alexandru Dobrovicescu, Mariana Lavinia Grosu*
- **S3-30** - REDESIGNING THE SUCTION LINE IN A PUMPING STATION TO IMPROVE PUMP PERFORMANCE – *Lucian-George Primejdie, Diana Maria Bucur, Sanda-Carmen Georgescu, Georgiana Dunca*
- **S3-44** - IN-LABORATORY EVALUATION OF COMPOSITE INSULATORS WITHDRAWN FROM SERVICE – *Tudor Leonida, Marian Costea, Mihaela-Amalia Diminescu, Ciprian Apostol*
- **S3-46** - NUMERICAL INVESTIGATION OF THE EFFECT OF SURFACE ROUGHNESS ON VORTEX SHEDDING BEHIND A HYDROFOIL AT DIFFERENT FLOW REGIMES – *Adrian-Ion Stroilescu, Diana Maria Bucur, Georgiana Dunca, Michel J. Cervantes*
- **S3-53** - FAILURE PATTERNS IN DAMS: A TYPOLOGICAL APPROACH FOR REALISTIC MODELING SCENARIOS – *Constantin Alexandru Baci, Daniela Elena Gogoășe Nistoran*

SECTION 4: Renewable Energy

Thursday 23 October 2025, 14:00 - 16:00

Location: POLITEHNICA Central Library – Room 3.2

Session Chairs:

Cosmin MARCULESCU (National University of Science and Technology POLITEHNICA Bucharest, Romania)

Andrei DAMIAN (Technical University of Civil Engineering Bucharest, Romania)

- **S4-19** - MODELLING AND COMPARATIVE ANALYSIS OF THE PERFORMANCE OF A HYBRID PHOTOVOLTAIC PANEL AND A SIMPLE PHOTOVOLTAIC PANEL USING MATLAB – *Roxana Margareta Grigore, Ioan Viorel Banu, Sorin Gabriel Vernica, Madalina Ioana Barbu*
- **S4-22** - COMPARATIVE ANALYSIS OF SIMULATED AND MEASURED PERFORMANCE IN A LV PHOTOVOLTAIC POWER PLANT – *Mihaita Linca, Constantin Vlad Suru, Cristian Bratu, Laurentiu Alboteanu, Denisa Rusinaru*
- **S4-35** - COMPARISON BETWEEN PHOTOVOLTAIC GLASS AND CLASSICAL WINDOW SYSTEMS – *Nicolae Daniel Furtună, Diana Maria Bucur, Andrei Damian*
- **S4-39** - ANALYSIS OF DIFFERENT ROOF TYPE INSULATIONS ON ENERGY SAVINGS AND ENVIRONMENTAL IMPACT FOR A ROMANIAN BUILDING – *Nicolae Daniel Furtună, Diana Maria Bucur, Andrei Damian*
- **S4-41** - ASSESSMENT OF ANALYTICAL MODELS FOR HIGH-ALTITUDE WIND SPEED EXTRAPOLATION BASED ON LIDAR DATA – *Dragos Machidon, Marcel Istrate, Razvan Beniuga, Alexandru Cocuti*

SECTION 4: Renewable Energy

Friday 24 October 2025, 9:30 - 11:00

Location: POLITEHNICA Central Library – Room 3.2

Session Chairs:

Mihai SĂNDULEAC (National University of Science and Technology POLITEHNICA Bucharest, Romania)

Constantin IONESCU (National University of Science and Technology POLITEHNICA Bucharest, Romania)

- **S4-16** - NUMERICAL SIMULATION OF A HYBRID STIRLING ENGINE POWER SYSTEM – *Iuliana Goga, Iuliana Șoriga, Alexandra Constantin, Camelia Stanciu, Dorin Stanciu*
- **S4-17** - MISCIBILITY OF CH₄ AND H₂ GASES IN A PREMIXING TUBE FOR FUEL ENRICHMENT – *Masoud Sahami, Angel Terziev, George Pitchurov, Martin Ivanov Petrini Marinov*
- **S4-33** - EXPERIMENTAL ANAEROBIC DIGESTION OF SEWAGE SLUDGE AND FOOD WASTE FOR BIOGAS PRODUCTION: INFLUENCE OF BIOCHAR ADDITION ON METHANE YIELD – *Andra-Maria Lăcureanu, Diana Mariana Cocârță*
- **S4-43** - EVALUATING THE SEASONAL PERFORMANCE OF AIR-TO-WATER HEAT PUMPS USING FIELD DATA – *Ivan Dimchev, Iskren Borisov, Borislav Stankov, George Pitchurov*
- **S4-52** - SMART COMPOSTING: CUTTING COSTS THROUGH PROCESS OPTIMIZATION – *Raul Lile, Tiberiu Apostol, Constantin Stan*
- **S4-57** - SUSTAINABLE ENERGY AND WATER SOLUTIONS AT ARAB POTASH COMPANY – *Mustafa Jaradat, Mathhar Bdour, Ahmad A'saf, Codruta Calina Bendea, Gabriel Valentin Bendea*

SECTION 5: Advanced Power Generation Systems & Technologies

Thursday 23 October 2025, 16:15 – 17:30

Location: POLITEHNICA Central Library – Room 3.1

Session Chairs:

Diana Maria BUCUR (National University of Science and Technology POLITEHNICA Bucharest, Romania)

Ciprian ȘORÂNDARU (University Politehnica Timișoara, Romania)

- **S5-24** - EVALUATION OF PAST PERFORMANCE AND MAINTENANCE OF HYDROELECTRIC GENERATING UNITS USING STATISTICAL AND PROBABILISTIC METHODS - *Ionuț Ilișescu, Ciprian Mircea Nemeș*
- **S5-28** - INTELLIGENT LOAD FREQUENCY CONTROL USING GENETIC ALGORITHMS- *Dragos, - Lucian Chiorean, Denisa-Maria Gorea, Radu Porumb, Dorin Bica, Cristian Gorea*
- **S5-38** - NUCLEAR POWER PLANT PERSONNEL TRAINING USING PC BASED AND FULL SCOPE SIMULATORS - *Andrei-Razvan Budu-Stănilă, Gabriel-Lazaro Pavel, Rădulescu Diana-Maria*
- **S5-42** - PERFORMANCE ANALYSIS AND STABILITY LIMITS OF HIGH-POWER WIND TURBINES WITH ADJUSTABLE BLADE PITCH UNDER STRONG WIND CONDITIONS - *Ciprian Șorândaru, Sorin Mușuroi, Samulel Ciucuriță, Cristina Lavinia Miloș, Dănuț Tokar*
- **S5-51** - TECHNO-ECONOMIC ASSESSMENT OF ENERGY EFFICIENCY IMPROVEMENTS IN AN INDUSTRIAL WATER PUMPING SYSTEM - *Tiberiu-Ștefan Uță, Constantin Ionescu*

SECTION 6: Smart Cities & Digital Transformation in Energy

Thursday 23 October 2025, 16:15 – 17:30

Location: POLITEHNICA Central Library – Room 2.2

Session Chairs:

Andrei CZIKER (Technical University of Cluj-Napoca, Romania)

Lucian TOMA (National University of Science and Technology POLITEHNICA Bucharest, Romania)

- **S1-21** - ANALYSIS OF THE ACOUSTIC ENVIRONMENT OF TRAFFIC NOISE IN UZBEKISTAN'S URBAN AREAS - *Ashurmakhmatov Sarvar, Kobilov Ergash Egamberdiyevich, Madjidova Tanzila Raximovna, Tukhtaev Mustafo Kurbonovich, Boratova Mukhtasam Ganiyevna, Rasulov Saydullo Kurbanovich, Mukhammedov Shukhrat Kasimovich, Mansiya Yessenamanova, Luca Adami, Rada Elena Cristina*
- **S1-37** - ASSESSMENT OF A SMART CONTROL ALGORITHM FOR A VENTILATION SYSTEM OPERATING UNDER FIRE-HAZARDOUS CONDITIONS - *Metody Georgiev, Alexandra Georgieva, Martin Ivanov, Angel Terziev*
- **S1-40** - OPTIMISING RASTER DATA FOR CLOUD STORAGE AND OPERATION USING GDAL AND BATCH SCRIPTING FOR FLOOD MODELLING RESULTS - *Andrei Cozma, Daniela Elena Gogoase-Nistoran*
- **S1-45** - MODERN METHODS FOR MV SWITCHGEAR CABINET - *Bogdan-Constantin Paduraru, Maricel Adam, Alin Dragomir, Mihai Boca, Bogdan-Constantin Neagu, Alexandra Bodoga*

TECHNICAL SESSION 1:

Education in energy engineering, university-industry partnership

Thursday 23 October 2025, 14:00 - 16:00

Location: POLITEHNICA Central Library, Room 3.1

Session Chairs:

Lăcrămioara Diana ROBESCU (National University of Science and Technology POLITEHNICA Bucharest)

Horia NECULA (National University of Science and Technology POLITEHNICA Bucharest)

Invitees: students, faculty and companies' representatives

TECHNICAL SESSION 2

Data mining and wind / photovoltaic power forecast - in honor and in memoriam of Professor Cezar Ionescu

Friday 24 October 2025, 9:30 - 11:00

Location: POLITEHNICA Central Library, Council Room 2.1

Session Chair:

Adrian BADEA (National University of Science and Technology POLITEHNICA Bucharest, Romania, Academy of Romanian Scientists)

9:30 – 10:15

- **Short Tributes to Professor Dumitru Cezar Ionescu**
Free-format talks

Session Chairs:

Adrian BADEA (National University of Science and Technology POLITEHNICA Bucharest, Romania, Academy of Romanian Scientists)

Paul ULMEANU (National University of Science and Technology POLITEHNICA Bucharest)

10:15 – 11:00

- 49 – ESTIMATION OF SOLAR POWER GENERATION CAPACITY USING AI AND SATELLITE -BASED WEATHER AND IMAGERY DATA – *Teodor Lupoiu, Constantin Ionescu, Mihail Bogdan Cărutașiu, Anatoli Paul Ulmeanu, Horia Necula*
- 8 – RENEWABLE ENERGY PRODUCTION FORECAST TESTS USING REGRESSION ANALYSIS – *Emil M. Oanță*
- 23 – WEB DATA COLLECTION FOR DECISION SUPPORT IN ENERGY MANAGEMENT - *Emil M. Oanță*

TECHNICAL SESSION 3:

Hybrid energy system with digital twin augmentation-HESTIA

Friday 24 October 2025, 9:30 - 11:00

Location: POLITEHNICA Central Library – Room 4.1

Session Chairs:

Bogdan Mihail CĂRUȚAȘIU (National University of Science and Technology POLITEHNICA Bucharest, Romania)

Vlad PÎRĂIANU (ALIVE Capital, Romania)

TECHNICAL SESSION 4:

Energy vectors integration for system and customer benefits

Friday 24 October 2025, 11:30 – 13:00

Location: POLITEHNICA Central Library – Room 4.2

Session Chair:

George Cristian LĂZĂROIU (National University of Science and Technology POLITEHNICA Bucharest, Romania)

- 60 – GRID FORMING INVERTERS FOR MODER POWER SYSTEMS – *Sorin Alexandru Nistor, Georgiana Balaban, George Cristian Lăzăroiu, Mariacristina Roscia, Soteris Kalogirou*
- Lucian MIHĂESCU - Free-format talk
- George Cristian LĂZĂROIU - Results of the DESEED project

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