

# **INNOVATIVE WEEK OF TECHNOLOGY: ENGINEERING A PREDICTABLE FUTURE**

**The Electroniad 2024 competition**  
**25 June 2024**

**1st Balkan Summit of the IEEE Student Branches &  
EPS Student Branch Chapters**  
**26 June 2024**

**2024 9<sup>th</sup> INTERNATIONAL CONFERENCE ON ENERGY  
EFFICIENCY AND AGRICULTURAL ENGINEERING  
(EE&AE 2024)**  
**27 - 29 June, 2024**

**Ruse, Bulgaria**

## **PROGRAM**



# **EE&AE**



**IEEE**

University of Ruse  
Student Branch

University of Ruse  
IEEE Student Branch



**IEEE  
ELECTRONICS  
PACKAGING  
SOCIETY**

A Student Chapter of the Electronics Packaging Society

# INNOVATIVE WEEK OF TECHNOLOGY PROGRAM

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# INNOVATIVE WEEK OF TECHNOLOGY

25 – 29 June 2024

Ruse, Bulgaria

## Organized by:



Association for Engineering  
and Research in Agriculture



IEEE Bulgaria Section



## Supported by:



University of Ruse "Angel Kanchev"



Technical University of Sofia



Technical University of Varna



Technical University of Gabrovo



Union of Electronics, Electrical Engineering and  
Telecommunications



Union of Scientists - Ruse



Federation of the Scientific Engineering Unions- Ruse

## SPONSORS:



## INDUSTRY PARTNERS:



## WELCOME ADDRESS

Dear colleagues,



It is my honor and privilege to welcome you to the EE&AE 2024 conference! In the vision of the University of Ruse "Angel Kanchev", the dissemination of knowledge, the organization and conduct of fundamental and applied research, and the implementation of innovations in agriculture, industry, and transport occupy a leading place. The impressive number of reports that will be presented at the conference, and the attraction of young researchers, students, and doctoral students to participate in this scientific event unite our efforts to achieve this goal.

I am sure that during the conference you will discuss ideas for joint research, preparation of proposals for participation in various European scientific programs and others that will stimulate young people's interest in engineering sciences. I have no doubt that you will also be interested in our latest project Ruse Research University, funded by the European Union - NextGenerationEU, which is also a great opportunity for a successful partnership.

Dear colleagues, I hope you will have time to familiarize yourself with the history and achievements of the University of Ruse "Angel Kanchev", with the cultural and historical attractions of our city.

I wish all participants of the EE&AE2024 conference successful work and wonderful experiences!

Prof. Dr. Plamen Kangalov.

Rector of the University of Ruse "Angel Kanchev"

## WELCOME ADDRESS

Dear colleagues and friends,



We are together once again at the 9<sup>th</sup> edition of the international scientific conference EE&AE 2024. And again together we will discuss one of the most important issues of the modern world - the provision of accessible and cheap energy and solving the food problem. The results of the research in the field of energy efficiency and precision agriculture will be useful for stimulating the interaction between business and science, and for focusing on the prospects and challenges in the regions.

We continue with the tradition of the Industrial Session, in which leading companies present innovative solutions and modern products in the field of renewable energy and automation of technological processes. I also want to highlight the new idea that we are implementing for the first time - The Innovative Week of Technology, which extends the EE&AE 2024 conference with two student events: Electroniad 2024 and the 1<sup>st</sup> Balkan Summit of the IEEE Student Branches & EPS Student Branch Chapters. In these accompanying events, Bulgarian and foreign students will listen to lectures by leading researchers and specialists, participate in competitive events, and build new friendships. The fact that scientists and listeners from Europe, Africa, Asia, and America are participating in the conference is an indicator of the role of the scientific community in building a more peaceful world.

Dear colleagues and friends, I hope your stay in our beautiful city will be filled with many emotions and wonderful experiences.

Once again, welcome, and good luck to everyone at the EE&AE 2004 conference!

Yours sincerely,

Prof. Dr. Nicolay Mihailov, DHC  
Chair of the EE&AE 2024 Conference

## PROGRAM AT A GLANCE

### Tuesday, 25 June 2024

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#### ELECTRONIAD 2024

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09:00 – 10:00	Registration (University of Ruse, Building 2, Hall 203)
10:00 – 12:30	The ELECTRONIAD Competition (University of Ruse, Building 2, Hall 203)
12:30 – 14:00	Lunch
14:00 – 16:00	Presentation, Demonstration and Assessment of the Participating Teams (University of Ruse, Building 2, Hall 203)
16:00 –	Awarding Ceremony (University of Ruse, Building 2, Hall 203)

### Wednesday, 26 June 2024

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#### 1<sup>st</sup> Balkan Summit of The IEEE Student Branches & EPS Student Branch Chapters

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09:00 – 10:00	Registration (University of Ruse, Building 2, Floor 1 Lobby)
10:00 – 13:00	Presentations (University of Ruse, Building 2, Hall 101)
13:00 – 14:00	Lunch (University of Ruse, Building 2, Hall 203)
14:00 – 16:00	Visit to Steiner Elektronik Ltd.
18:30	IEEE SB and EPS SBC Networking dinner

### Thursday, 27 June 2024

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#### 2024 9<sup>th</sup> International Conference on Energy Efficiency & Agricultural Engineering

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10:00 – 16:00	Registration (University of Ruse, Building 2, Floor 1 Lobby)	
10:00 – 18:15	Virtual Poster Session	
11:00 – 11:30	Opening Ceremony (University of Ruse, Building 2, Hall 101)	
11:30 – 13:00	Plenary Session 1 (University of Ruse, Building 2, Hall 101)	
13:00 – 14:15	Lunch break	
14:15 – 15:45	Oral Session 1 (University of Ruse, Building 2, Hall Γ305)	Oral Session 2 (University of Ruse, Building 2, Hall Γ307)



15:45 – 16:15	Coffee Break (University of Ruse, Building 2, Hall 203)	University – Industry Dialogue Booths (University of Ruse, Building 2, Hall 203)	Huawei Demonstration Bus (University of Ruse, in front of Building 2)
16:15 – 17:15	Poster Session 1 (University of Ruse, Building 2, Floor 1 Lobby)		
17:15 – 18:15	Poster Session 2 (University of Ruse, Building 2, Floor 1 Lobby)		
20:00	Welcome Cocktail (Grand Hotel Riga)		

### Friday, 28 June 2024

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#### 2024 9<sup>th</sup> International Conference on Energy Efficiency & Agricultural Engineering

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09:00 – 16:00	Registration (University of Ruse, Building 2, Floor 1 Lobby)		
09:00 – 16:45	Virtual Poster Session		
09:00 – 10:30	Oral Session 3 (University of Ruse, Building 2, Hall Γ305)	Oral Session 4 (University of Ruse, Building 2, Hall Γ307)	Oral Session 5 (University of Ruse, Building 2, Hall Γ308)
10:30 – 11:00	Coffee Break (University of Ruse, Building 2, Hall 203)	University – Industry Dialogue Booths (University of Ruse, Building 2, Hall 203)	Huawei Demonstration Bus (University of Ruse, in front of Building 2)
11:00 – 12:30	Plenary Session 2 (University of Ruse, Building 2, Hall 101)		
12:30 – 14:00	Lunch Break		
14:00 – 15:00	Industrial Session (University of Ruse, Building 2, Hall 101)		
15:00 – 15:30	Coffee Break (University of Ruse, Building 2, Hall 203)	University – Industry Dialogue Booths (University of Ruse, Building 2, Hall 203)	Huawei Demonstration Bus (University of Ruse, in front of Building 2)
15:30 – 16:30	Poster Session 3 (University of Ruse, Building 2, Floor 1 Lobby)		
16:30 – 17:30	Poster Session 4 (University of Ruse, Building 2, Floor 1 Lobby)		
20:00	Gala Dinner (Mehana Chiflika)		

### Saturday, 29 June 2024

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#### 2024 9<sup>th</sup> International Conference on Energy Efficiency & Agricultural Engineering

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09:00 – 11:00	Registration (University of Ruse, Building 2, Floor 1 Lobby)
09:00 – 11:45	Virtual Poster Session

09:00 – 10:30	Oral Session 6 (University of Ruse, Building 2, Hall Г305)
10:30 – 11:30	Poster Session 5 (University of Ruse, Building 2, Floor 1 Lobby)
11:30 – 12:30	Poster Session 6 (University of Ruse, Building 2, Floor 1 Lobby)
12:30 – 12:45	Farewell Coffee. End of Conference (University of Ruse, Building 2, Hall 203)

## COMMITTEES

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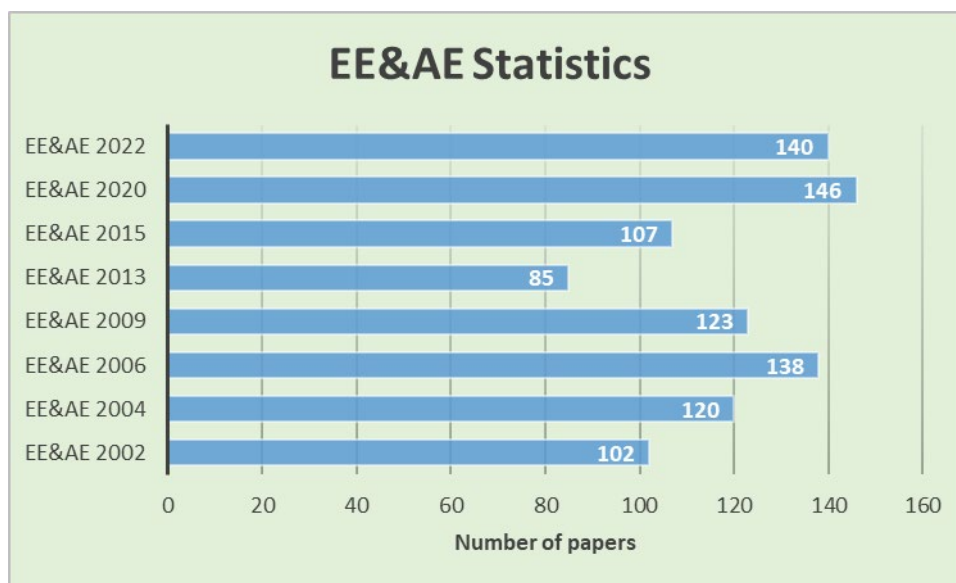
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## EE&AE HISTORY

The EE&AE conference was organized by a group of researchers from the University of Ruse Angel Kanchev, aiming to challenge several fundamental world problems – world hunger and energy poverty. The solutions to these problems are related to energy efficiency, renewable energy sources, precision agriculture, environmental protection, and appropriate educational policies.

The first International Conference on Energy Efficiency and Agricultural Engineering was held back in the year 2002, with the support of the International Commission of Agricultural and Biosystems Engineering (CIGR). It has attracted the attention of more than 102 researchers, academicians, engineers, and students from 23 countries in Europe, Asia, and Africa. Since then, a total of seven conferences were held in Ruse, which maintained the initial interest in the topics.



Traditionally, the EE&AE conference is supported by the University of Ruse Angel Kanchev, as well as by several national and international companies, and since 2020 EE&AE has been technically sponsored by IEEE. Their assistance provides the necessary technical infrastructure and organization of cultural activities creating beneficial conditions for the efficient organization and pleasant atmosphere of the events.

In 2022 for the first time, the so-called Industrial Session as part of the conference, is organized. Leading partners in the Energy sector demonstrated their state-of-the-art products and technologies. This created many new opportunities for cooperation between Business and Science.

## INVITED SPEAKERS

“Microchip's Academic Synergy: Cultivating Innovation through Education and Partnerships”

### **Valentin-Croif CONSTANTIN**

Director of Romania Design Center,  
Microchip Technology



**Valentin Constantin** has been with Microchip since 2008 and was appointed director of the Romania Design Center in September 2022. Prior to his role as Director, he led the RDC's APID (Analog Power Interface Division) Applications team with more than 40 engineers. He has held courses focused on battery chargers for various chemistries, DC-DC voltage converters, and EMC (electromagnetic compatibility) at Microchip MASTERS conferences (2010 – 2016). He holds a Bachelor of Science in Electrical Engineering, and a Master of Science in Power Electronics both obtained from National Science and Technology Politehnica University of Bucharest and a Master of Excellence in Management from EXEC-EDU business school.

“Microchip's Academic Synergy: Cultivating Innovation through Education and Partnerships”

### **Radu BOCA**

HR Generalist,  
Microchip Technology



**Radu Boca** has been with Microchip since 2021 and works as HR Generalist at the Romania Design Center. He is responsible for identifying new talents and recruiting and onboarding employees in Microchip's teams. Radu is a key member of the Microchip EMEA Graduate Program designed to help new college graduates who join Microchip learn more about the culture of the company and have a successful career start by interacting with senior employees. He holds a Bachelor's Degree in Management and a Master's Degree in Human Resource Management from the Bucharest Academy of Economic Sciences.



“GenAI in 2024. From classical machine learning to autonomous agents”

**Dimitar STOYANOV**

AI Community Lead, AI Architect,  
Endava, Bulgaria



**Dimitar Stoyanov** is a seasoned Enterprise and Solutions Architect with management experience and over 25+ years of successful delivery of various software solutions and a deep focus on AI and Generative AI. Past more than 15 years deeply involved in successful digital transformation projects - modernization, monolith decoupling, data migration, coexistence, and integration - of large enterprises in multiple sectors - insurance, banking, finances, and more. Experience driving large-scale projects (150+ members) and leading enterprise transformation both from processes and technology perspectives for Fortune 100 and Fortune 500 companies.

Driving initiatives in the AI and Generative AI area and experience designing complex AI solutions using Generative AI, AI, and LLM. Research efforts in the multi-agent systems area and expertise in the industry standard frameworks - LangChain, LangGraph, LangSmith, LlamaIndex; multi-agent frameworks like CrewAI and AutoGen. Very good understanding of the current AI offering from the major cloud providers.

**Presentation 1** (Balkan Summit): “From Sunlight to Savings: Exploring the Benefits of Renewable Photovoltaic Energy and Huawei Solutions”

**Presentation 2** (EE&AE 2024 Industrial Session): “Evolution of the Bulgarian grid: Improving power supply stability with Huawei solutions”

**Eng. Ivan Valentinov VALCHEV**

ivan.valchev@photomate.eu

Technical Solution Manager,

Photomate Bulgaria, Plovdiv, Bulgaria



**Ivan Valchev** is a Technical Solution Manager at Photomate. He received his engineering degree at the Technical University of Gabrovo. During his professional career, he has been advising designers and engineers on key PV projects in Bulgaria. His research interests include autonomous power systems, EMS systems, and power distribution control. Eng. Valchev has trained more than 400 people to become proficient with Huawei PV solutions.

“How far is precision agriculture technology from meeting its promises?”

**Kamil Okyay SINDIR, PhD**

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Professor,

Ege University, Faculty of Agriculture, Department of  
Agricultural Machinery and Technologies Engineering, Bornova,  
Izmir, Türkiye



**Kamil Okyay Sindir**, born in Bornova, Izmir, Türkiye, has been a senior lecturer since 1987 and a full professor since 2004 at the Ege University, Faculty of Agriculture, Department of Agricultural Machinery and Technologies Engineering where he received his BEng degree in 1984, and MSc degree in 1989. Later, PhD in 1993 at the Cranfield University, UK. Served as the president of the Turkish Chamber of Agricultural Engineers for 14 years and chaired the board of the Union of Turkish Chambers of Engineers and Architects in Izmir. Sindir has worked as the Executive Committee Member of the Agricultural Applications and Research Center of Ege University. He also represented Türkiye at the EFITA (European Federation of Information Technology in Agriculture) and the International Committee of Agricultural Engineers (CIGR). Sindir was the founder coordinator and the first president of the Association of Agricultural Engineers in Southeastern Europe (AESEE), from 2007 to 2010. Between 2008 and 2010, he was elected to the Executive Board of the National Olive and Olive Oil Council. Served as the reporter of the Committee of Agricultural Machinery and Implements and Committee of Tractors to the 7th and 8th Five Year Development Plans of Türkiye. He also worked at the Monitoring Committee of the Turkish Informatics Society and chaired the Agricultural Informatics WG of the Society.

He was elected as the Mayor of Bornova District of Izmir in March 2009 and later represented Izmir province at the Grand National Assembly of Türkiye (GNAT) as the Deputy (Member of Parliament) until 2023. He is also actively involved in the Agriculture, Forestry and Rural Affairs Committee, Planning and Budget Committee, Research Committees on Viticulture, Addition on Information Technologies, Earthquakes, Aquaculture and Fisheries at the GNAT, NATO Parliamentary Assembly (NATO PA), Vice President of the Science and Technology Committee (STC) of the NATO PA and also the Sub-Committee on Technology Trends and Security (TTS) of the STC. He also acted as the Vice President of the European Energy Cities Association.

Sindir has written 6 books, 1 chapter in an international book (CIGR Handbook Volume VI – Information Technology), and more than 130 international scientific papers, publications, and articles in numerous journals, newspapers and virtual media. Sindir’s scientific expertise and major fields of interest are; Planning and Management, Operations Research, CPM/PERT, Precision Farming, Agriculture 4.0, Spatial/satellite technologies, Geographical Information Systems (GIS), Remote Sensing, Informatics and Communication Technologies, Food Safety and Security, Sustainable Energy Resources and Technologies, Energy Transition, Energy Productivity and Saving.

“Enabling energy systems flexibility provision by all actors and sectors through markets and digital technologies”

**Valeri MLADENOV, DSc.**

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Professor,

Technical University of Sofia, Sofia, Bulgaria



**Valeri Mladenov** received his Ph.D. from the Technical University of Sofia (TU Sofia), Bulgaria in 1993. In 2019 he defended a "Doctor of Sciences" thesis at the same institution. In 2004 he became the head of the department Fundamentals of Electrical Engineering. Since June 2011 he has been a Dean of Faculty of Automatics, since Dec. 2011 he has been a Vice-Rector of TU Sofia. Currently, he is Head of the Department of Fundamentals of Electrical Engineering and Head of the Neurocomputing Laboratory of TU-Sofia. He is a guest lecturer at the Faculty of Electrical Engineering, Eindhoven University of Technology, in the Netherlands, and many others. Prof. Mladenov's research interests are in the fields of electrical engineering, artificial intelligence, neural networks, power systems, and electronics. He has received many international research fellowships. He has more than 350 scientific papers in professional journals and conferences. He is a co-author of twenty books and manuals for students. He had received many research grants and also with his team he participated and participated in many national and international projects - H2020, FP7, Royal Society, DFG, NWO, Erasmus+, and others.

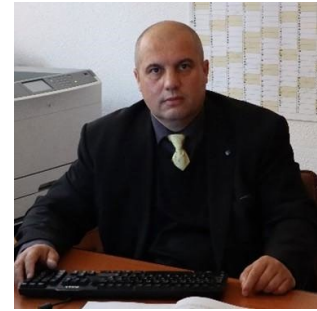
As a member of several editorial boards, Prof. Mladenov serves as an editor-in-chief, associate editor, and reviewer for several professional journals and conferences. He is a Senior Member of IEEE, a member of the IEEE Circuit and Systems Technical Committee (TC) on Cellular Nonlinear Networks and Memristor Array Computing (CNN-MAC), and an Educational Activities Officer of the Bulgarian IEEE section. He is also a Senior Member of the International Neural Networks Society (INNS), a Member of the International Council of Large Electric Systems, (SIGRE), a member of the Steering Committee of the International Symposium on Theoretical Electrical Engineering (ISTET), a member of the Management Boards of the Scientific and Technical Union of the Power Engineers, and the Union of Automation and Informatics in Bulgaria.

“Precision agriculture trends in the context of climate changes”

**Nicolae-Valentin VLĂDUȚ, Ph.D.**

General Director,

The National Institute of Research – Development for Machines  
and Installations Designed for Agriculture and Food Industry –  
INMA Bucharest, Romania



**Nicolae-Valentin Vlăduț** is General Director at INMA Bucharest and Associate Professor at UNST UP Bucharest. He received his MSc, and PhD from the National University for Science and Technology “U.P. Bucharest”, Romania. During his professional career, he has been the Head of the Testing Department and Scientific Director at INMA Bucharest. His research interests include Agriculture technologies, Construction of machines, Bioeconomy, Sustainable agriculture, Conservative agriculture, Renewable resources, Agri-Environment, Agro-Food, etc. He also published more than 160 articles indexed in WoS journals and conference proceedings with hundreds of citations, has 6 patents, 22 patent applications, 35 books, and over 140 prizes, medals, and diplomas obtained at international fairs of inventions, prizes of the Agricultural and Forestry Academy, etc. He is Member of the editorial board of journals: INMATEH - Agricultural Engineering (Romania), HUNGARIAN AGRICULTURAL ENGINEERING (Hungary), "AGRICULTURAL MACHINES" Journal - ACM (Ukraine), BLACK SEA JOURNAL OF AGRICULTURE (Turkey), ECOLOGICA (Serbia), ACTA TECHNICA CORVINIENSIS - BULLETIN OF ENGINEERING (Romania); ANNALS OF FACULTY ENGINEERING HUNEDOARA - INTERNATIONAL JOURNAL OF ENGINEERING (Romania), ISB-INMA TEH - International Symposium (Romania), International Symposium “Environment and Industry” – SIMI (Romania), The International Conference on Hydraulics, Pneumatics, Sealing Elements, Precision Mechanics, Tools, Specific Electronic Equipment & Mechatronics – HERVEX (Romania), International Symposium "Actual Tasks on Agricultural Engineering" (Croatia), Journal of Scientific Society of POWER MACHINES, TRACTORS AND MAINTENANCE (Serbia), etc.

“Business decision-making in husbandry management”

**Todor STOILOV, DSc.**

todor.stoilov@iict.bas.bg

Professor,

Institute of Information and Communication Technologies –  
Bulgarian Academy of Sciences



**Todor Stoilov**, DSc, Ph.D., Eng. is currently working as a Professor at the Institute of Information and Communication Technologies – Bulgarian Academy of Sciences. He is a control engineer, who graduated from the Technical University of Sofia, Bulgaria. He defended his Ph.D. thesis titled “Engineering Design of complex systems”. The next higher academic level for a Doctor of Science (DSc) degree was defended with a doctoral thesis titled “Real-time Coordination in hierarchical systems”. He participated in more than 100 international and national projects funded by the European Commission, Bulgarian National Scientific Fund, Bulgarian Academy of Sciences, etc. His list of publications includes more than 400 scientific publications including 6 monographs, 9 chapters in international books, papers in scientific journals, and proceedings of international events. The list of internationally recognized citations is more than 600. He has active educational activities in several Bulgarian Universities with courses, related to optimal control, decision-making, and portfolio optimization. He has been invited as a visiting professor in universities abroad. His main research interests include optimization, automatic control, control of transportation systems; portfolio optimization, financial investments, decision-making in husbandry management, and e-services in different domains.

## PROGRAM IN DETAILS

### ELECTRONIAD 2024 COMPETITION

**Tuesday, 25 June 2024**

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09:00 – 10:00      Registration (University of Ruse, Building 2, Hall 203)

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10:00 – 10:15      Opening Ceremony (University of Ruse, Building 2, Hall 203)

Prof. DSc. Boris Evstatiev, University of Ruse “Angel Kanchev, Counselor of the IEEE Electronics Packaging Society Student Branch Chapter

Tsvetelina Stefanova, University of Ruse “Angel Kanchev”, Chair of the IEEE Electronics Packaging Society Student Branch Chapter

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10:15 – 10:30      ELECTRONIAD 2024 (University of Ruse, Building 2, Hall 203)

- Instructions for the participants in the Electroniad 2024 competition.
  - Conduction of the Electroniad 2024 competition
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12:30 – 14:00      Lunch

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14:00 – 16:00      Presentation, Demonstration and Assessment of the Participating Teams  
(University of Ruse, Building 2, Hall 203)

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16:00 –              Awarding Ceremony (University of Ruse, Building 2, Hall 203)

# 1ST BALKAN SUMMIT OF THE IEEE STUDENT BRANCHES & EPS STUDENT BRANCH CHAPTERS

**Wednesday, 26 June 2024**

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09:00 – 10:00      Registration (University of Ruse, Building 2, Floor 1 Lobby)

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10:00 – 10:15      Opening Ceremony (University of Ruse, Building 2, Hall 101)

Prof. DSc. Boris Evstatiev, University of Ruse “Angel Kanchev, Counselor of the IEEE EPS Student Branch Chapter

Assoc. Prof. Dr. Galina Ivanova, University of Ruse “Angel Kanchev”, Vice-Rector International Relations

Prof. Dr. Valentina Markova, Chair of IEEE Bulgaria Section

Assist. Prof. Dr. Tsvetelina Mladenova, University of Ruse “Angel Kanchev”, Counselor of the IEEE Student Branch

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10:15 – 11:00      Presentations session 1 (University of Ruse, Building 2, Hall 101)

**Speaker:** Valentin Constantin

**Affiliation:** Microchip Technology, Bucharest, Romania

**Position:** Director of Romania Design Center

**Presentation:** Microchip's Academic Synergy: Cultivating Innovation through Education and Partnerships

**Speaker:** Dimitar Stoyanov

**Affiliation:** Endava Bulgaria, Bulgaria

**Position:** AI Community Lead, AI Architect

**Presentation:** GenAI in 2024. From classical machine learning to autonomous agents

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12:00 – 12:15      Coffee Break (University of Ruse, Building 2, Hall 203)

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12:15 – 13:00      Presentations session 2 (University of Ruse, Building 2, Hall 101)

**Speaker:** Ivan Valchev

**Affiliation:** Photomate Bulgaria, Plovdiv, Bulgaria

**Position:** Technical Solution Manager

**Presentation:** From Sunlight to Savings: Exploring the Benefits of Renewable Photovoltaic Energy and Huawei Solutions

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13:00 – 14:00      Lunch (University of Ruse, Building 2, Hall 203)

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14:00 – 14:30      **Transfer to Steiner Elektronik Ltd**

14:30 – 15:00      **Steiner Elektronik presentation**

15:00 – 15:30      **Steiner Elektronik visit**

15:30 – 16:00      **Transfer back to the University of Ruse**

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18:30                **IEEE SB and EPS SBC Networking dinner**



## 2024 9<sup>th</sup> International Conference on Energy Efficiency & Agricultural Engineering (EE&AE 2024)

### Thursday, 27 June 2024

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10:00 – 16:00      Registration (University of Ruse, Building 2, Floor 1 Lobby)

### Thursday, 27 June 2024, Opening ceremony

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11:00 – 11:30      Opening ceremony (University of Ruse, Building 2, Hall 101)

Prof. Dr. Nicolay Mihailov, University of Ruse Angel Kanchev, Conference Chair

Prof. Dr. Plamen Kangalov, Rector of University of Ruse Angel Kanchev

Prof. Dr. Valentina Markova, Chair of IEEE Bulgaria Section

### Thursday, 27 June 2024, Plenary Session 1

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11:30 – 13:00      Plenary Session 1 (University of Ruse, Building 2, Hall 101, [online](#))

**Session chair:** Boris Evstatiev, University of Ruse “Angel Kanchev”

**Session co-chair:** Florin Nedeff, “Vasile Alecsandri” University of Bacau

#### **PL1.1    How Far is Precision Agriculture Technology from Meeting its Promises?**

Kamil Okyay Sindir (Ege University, Faculty of Agriculture, Department of Agricultural Machinery and Technologies Engineering, Bornova, Izmir, Türkiye)

#### **PL1.2    Enabling energy systems flexibility provision by all actors and sectors through markets and digital technologies**

Valeri Mladenov (Technical University of Sofia, Bulgaria)

### Thursday, 27 June 2024

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13:00 – 14:15      Lunch break

### Thursday, 27 June 2024, Oral Session 1

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14:15 – 15:45      Oral Session 1 (University of Ruse, Building 2, Hall Γ305)

**Session chair:** Tatiana Atanasova, IICT-BAS

**Session co-chair:** Katerina Gabrovska-Evstatieva, University of Ruse “Angel Kanchev”

#### **O1.1    Automatic Drip Irrigation Equipment**

Corina N Sandulescu (CETTI)

#### **O1.2    Two-criteria Study of the Fruit Separation Process During Mechanised Harvesting of Tomatoes Variety Bella**

Yuriy I. Enakiev (Institute of Soil Science, Agro-technology and Plant Protection “Nikola Pushkarov”); Ivan Mortevev (Institute of Soil Science, Agro-technology and Plant Protection

“Nikola Pushkarov”); Elena Grancharova (Institute of Soil Science, Agro-technology and Plant Protection “Nikola Pushkarov”); Kiril Stefanov (University of Forestry)

### **O1.3 Multisensor System for Measuring Air Components in Intelligent Animal Husbandry**

Victor Danev (IICT-BAS); Tatiana Atanasova (IICT-BAS); Kristina Dineva (IICT-BAS); Ivan I. Blagoev (IICT - BAS); Plamen Petrov (IICT-BAS); Nikolay Markov (Research Institute of Mountain Stockbreeding and Agriculture); Miroslav Hristov (Research Institute of Mountain Stockbreeding and Agriculture); Svetoslava Stoycheva (Research Institute of Mountain Stockbreeding and Agriculture); Lora Mondeshka (Research Institute of Mountain Stockbreeding and Agriculture); Irena Valova (University of Ruse Angel Kanchev); Nikolay Valov (University of Ruse Angel Kanchev); Tsvetelina Mladenova (University of Ruse)

### **O1.4 Weather Monitoring System Using IOT-Based Diy Automatic Weather Station**

Stoyan R Stoyanov (Konstantin Preslavsky University of Shumen); Zdravko Y Kuzmanov (Konstantin Preslavsky University of Shumen); Teodora Stoyanova (Konstantin Preslavsky University of Shumen)

### **O1.5 The Study the Compost Mass Moisture and the Degree Of Straw Crushing Effect on Compost Temperature in a Multifactorial Experiment**

Yuriy I. Enakiev (Institute of Soil Science, Agro-technology and Plant Protection “Nikola Pushkarov”); Vsevolod Lapushkin (Russian State Agrarian University – Moscow Timiryazev Agricultural Academy); Ivan Morteve (Institute of Soil Science, Agro-technology and Plant Protection “Nikola Pushkarov”); Elena Grancharova (Institute of Soil Science, Agro-technology and Plant Protection “Nikola Pushkarov”); Aliya Bakhitova (Russian State Agrarian University – Moscow Timiryazev Agricultural Academy); Anastasia Lapushkina (Russian State Agrarian University – Moscow Timiryazev Agricultural Academy)

## **Thursday, 27 June 2024, Oral Session 2**

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14:15 – 15:45 Oral Session 2 (University of Ruse, Building 2, Hall Г307)

**Session chair:** Lucian Mandache, University of Craiova

**Session co-chair:** Tsvetelina Mladenova, University of Ruse “Angel Kanchev”

### **O2.1 Data Exchange between Distributed Energy Resources and Active Customers for Stable Grid and Energy Saving by Efficient Storage**

Dimitar Chalamov (Sofia University); Simeon Tsvetanov (Sofia University); Anastasius Papapostolu (Sofia University)

### **O2.2 Design and Development of an Experimental Photovoltaic System**

Ventsislav P Keseev (University of Ruse "Angel Kanchev"); Nicolay Mihailov (University of Ruse Angel Kanchev); Boris I Evstatiev (University of Ruse "Angel Kanchev"); Tsvetelina Mladenova (University of Ruse); Vladislav Hinkov (University of Ruse "Angel Kanchev"); Nikolay Valov (University of Ruse Angel Kanchev)

### **O2.3 Modeling and Simulation of Three-Phase Grid-Connected Solid-Oxide Fuel Cell Systems**

Ioan Viorel Banu (Vasile Alecsandri University of Bacau); Roxana Grigore (Universitatea Vasile Alecsandri din Bacau); George Culea (Vasile Alecsandri University of Bacau); Sorin Gabriel Vernica (Vasile Alecsandri University of Bacau); Sorin Eugen Popa (Vasile Alecsandri University of Bacau)

## **O2.4 On the Analysis of Power Chain and Dynamics of Electric Cars**

Lucian Mandache (University of Craiova); Ioana-Gabriela Sirbu (University of Craiova); Dan Gabriel I Stanescu (University of Craiova, Faculty of Electrical Engineering); Mircea-Emilian S Ardeleanu (universitatea din craiova)

## **O2.5 Efficiency Evaluation and Performance Analysis of a Photovoltaic Park Connected to a 20 kV Distribution Network in Galati County, Romania**

Cristian V Strejoiu (Polytechnic University of Bucharest); Gheorghe Lazaroiu (University POLITEHNICA of Bucharest); Mohammed Gamal (University POLITEHNICA of Bucharest)

## **O2.6 Maximizing Solar Power Potential: A Study Case of Solar Radiation and Panel Positioning in South-Eastern Region of Romania**

Catalin Popa (Mircea cel Batran Naval Academy); Nicolae-Silviu POPA (Mircea cel Batran Naval Academy); Ionela Goia (Politechnica University of Bucharest)

## **O2.7 Energy Management to Provide Multiple Services from Battery to Grid**

Irem Disiacik (Marmara University); Mustafa Alparslan Zehir (Marmara University); Elma Zana (Polytechnic University of Tirana); Oguzhan Ceylan (Kadir Has University)

### **Thursday, 27 June 2024**

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15:45 - 16:15 Coffee Break (University of Ruse, Building 2, Hall 203)

### **Thursday, 27 June 2024**

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15:45 - 16:15 University – Industry Dialogue Booths (University of Ruse, Building 2, Hall 203)

### **Thursday, 27 June 2024**

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15:45 - 16:15 Huawei Demonstration Bus (University of Ruse, In Front of Building 2)

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### **Thursday, 27 June 2024, Poster Session 1**

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16:15 – 17:15 Poster Session 1 (University of Ruse, Building 2, Floor 1 Lobby)

**Session chair:** Ivaylo STOYANOV, University of Ruse “Angel Kanchev”

**Session co-chair:** Teodor ILIEV, University of Ruse “Angel Kanchev”

## **P1.1 Experimental Study Of Photovoltaic Panels’ Degradation And Technology Evolution**

Ludmil Stoyanov (Technical University of Sofia); Zahari Zarkov (Technical University of Sofia); Valentin Milenov (Technical University of Sofia); Ivan Bachev (Technical University of Sofia); Vladimir Lazarov (Technical University of Sofia)

### **P1.2 Automation System for Wind Turbines**

Mariana Panaitescu (Maritime University); Fanel-Viorel Panaitescu (Maritime University); Ionut Voicu (Constanta Maritime University); Paula-Gabriela Panait (Constanta Maritime University); Mihael Chircor (Constanta Maritime University)

### **P1.3 Laboratory Verification of Simulation Studies of Bipolar Transistor**

Kaloyan I Ivanov (Prof. "Assen Zlatarov" University Burgas); Ivaylo Belovski (Prof. Assen Zlatarov University Burgas)

### **P1.4 Simulation Verification of Studies of Thermoelectric Cooling System**

Kaloyan I Ivanov (Prof. "Assen Zlatarov" University Burgas); Ivaylo Belovski (Prof. Assen Zlatarov University Burgas)

### **P1.5 Study of the Presence of Pulse Width Modulated Flicker of the Led Display Backlight**

Kaloyan I Ivanov (Prof. "Assen Zlatarov" University Burgas); Ivaylo Belovski (Prof. Assen Zlatarov University Burgas)

### **P1.6 Optimizing Energy Efficiency: Dynamic Numerical Simulation for Educational Buildings**

Lelia Letitia Popescu (Universitatea Tehnica de Constructii Bucuresti); Razvan Stefan Popescu (Universitatea Tehnica de Constructii Bucuresti)

### **P1.7 Ventilation Effect on the Particulate Concentration in Educational Buildings**

Razvan Stefan Popescu (Universitatea Tehnica de Constructii Bucuresti); Lelia Letitia Popescu (Universitatea Tehnica de Constructii Bucuresti)

### **P1.8 Outdoor Vocs' Concentration Monitoring due to Traffic Emission**

Razvan Stefan Popescu (Universitatea Tehnica de Constructii Bucuresti); Lelia Letitia Popescu (Universitatea Tehnica de Constructii Bucuresti)

### **P1.9 Utilizing Computational Modeling for Real-Time Analysis of Energy Dynamics in Educational Structures**

Lelia Letitia Popescu (Universitatea Tehnica de Constructii Bucuresti); Razvan Stefan Popescu (Universitatea Tehnica de Constructii Bucuresti)

### **P1.10 Risk Assessment of a Base Power Deficit in the Electric Power System**

Hristo S Ilchev (Technical University of Sofia)

### **P1.11 Application of Fuzzy Logic to Short-Term Planning of Electric Loads**

Petya I Tsvetkova (Technical University of Sofia); Nikolay Savov (Technical University of Sofia)

### **P1.12 Designing Oscillating Circuits: A Combined Approach with MATLAB and MicroCAP for Synthesis and Analysis**

Adriana N. Borodzhieva (University of Ruse); Snezhinka Zaharieva (University of Ruse); Ivan Georgiev (University of Ruse); Slavi Georgiev (University of Ruse)

### **P1.13 Optimum Regime Parameters in Electrical Networks with Connected Decentralized Energy Sources**

Mehmed Hassan (University "Prof.Asen Zlatarov")

**P1.14 Variant study of the electrical energy supply to an autonomous consumer by means of wind power plants**

Mehmed Hassan (University "Prof.Asen Zlatarov")

**P1.15 Analysis of the Electrical Characteristics of Hall Elements Made of Germanium and Gallium Arsenide**

Gergana Dimitrova Mironova (Technical University of Gabrovo); Goran Goranov (TU-Gabrovo)

**P1.16 Use of Unmanned Aircraft for Assessment of Maize Vegetation in Southern Dobruja**

Asparuh Atanasov (Technical University of Varna, Bulgaria); Gallina Mihova (Dobruja Agriculture Institute, Agricultural Academy General Toshevo, ); Svilen Stoyanov (Technical University of Varna, Bulgaria); Desislava P. Mihaylova (Technical University of Varna); Aleksandrina Bankova (Technical University of Varna)

**P1.17 Operational Reliability of Connection Schemes of Photovoltaic Systems with Three Single-Phase Grid Inverters**

Konstantin V. Raykov (Technical University of Sofia, EPF-Sliven)

**P1.18 Study of the change of ultrafiltration polymer membranes specific electrical conductivity**

Violeta Raykova (Technical University of Sofia, College Sliven); Konstantin V. Raykov (Technical University of Sofia, EPF-Sliven)

**P1.19. Extraction of  $\beta$ -carotene from peppers by means of certain organic solvents**

Violeta Raykova (TU-Sofia, College-Sliven); Gjore Nakov (Technical University of Sofia, College Sliven); Nastya Ivanova (Technical University of Sofia, College Sliven)

**P1.20 Communication Challenges in Smart Irrigation Systems**

Filip A. Tsvetanov (South West University, Blagoevgrad); Kiril Kuzmanov (South West University, Blagoevgrad)

**Thursday, 27 June 2024, Poster Session 2**

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17:15 – 18:15      Poster Session 2 (University of Ruse, Building 2, Floor 1 Lobby)

**Session chair:** Ludmil STOYANOV, Technical university of Sofia

**Session co-chair:** Seher KADIROVA, University of Ruse “Angel Kanchev”

**P2.1 An Experimental Investigation of the Stroke of the Nozzle Needle on Hydraulic Characteristics of Electromagnetic Fuel Injectors**

Simeon P Iliev (University of Ruse); Valentin Manev (University of Ruse); Milen Sapundzhiev (University of Ruse)

**P2.2 Examining the Changes in Pressure Regulator Characteristics of Automatic Transmissions After Prolonged Operation**

Simeon P Iliev (University of Ruse); Stefan Stefanov (Technical University of Varna); Sergey G Belchev (TU-Varna); Ismail Mehmedov (Technical University of Varna)

### **P2.3 Model for Thermal Studies of Automotive Engine Cylinder Heads**

Simeon P Iliev (University of Ruse); Sergey G Belchev (TU-Varna); Delyan Petkov (TU-Varna); Stefan Stefanov (Technical University of Varna); Valentin Manev (University of Ruse)

### **P2.4 Using of Four-Dimensional Electromagnetic Potentials in Cases of Movement. Part I: Basic Definitions**

Atanas Chervenkov (Technical University of Sofia)

### **P2.5 Using of Four-Dimensional Electromagnetic Potentials in Cases of Movement. Part II: Examples**

Atanas Chervenkov (Technical University of Sofia)

### **P2.6 Real-Time IOT System for Monitoring of Indoor Comfort and Health in Office Buildings**

Andreea El-Leathey (ICPE-CA); Alexandru-Ionel Constantin (National Institute for Research and Development in Electrical Engineering ICPE-CA); Gabriela Circiumaru (INCDIE ICPE-CA); Paula Anghelita (ICPE-CA); Rareş A Chihaiia (ICPE-CA)

### **P2.7 SWOT Analysis in Building a Blockchain Data Sharing System**

Teodora V Hristova (University of Mining and Geology "St. Ivan Rilski"); Peyo Hristov (Cisco Systems); Grigor Mihaylov (University of Telecommunications and Post); Albena Taneva (Technical University of Sofia in Plovdiv, Bulgaria)

### **P2.8 Methodology for the Selection of Raw Materials and Production of Hydrogen**

Olga Vlaykova (University of Mining and Geology "St. Ivan Rilski"); Teodora V Hristova (University of Mining and Geology "St. Ivan Rilski"); Boris I Evstatiev (University of Ruse "Angel Kanchev")

### **P2.9 Modeling of the Operation of DC Motor with Series Excitation in Matlab Environment**

Anka Krasteva (University of Ruse Angel Kanchev); Vyara Ruseva (University of Ruse "Angel Kanchev", ); Konstantin G Koev (University of Ruse Angel Kanchev)

### **P2.10 Modelling and Simulation of an Electric Transport High-Power Three-Phase Full-Wave Uncontrolled Rectifier in the Matlab/Simulink Environment**

Konstantin G Koev (University of Ruse Angel Kanchev); Vyara Ruseva (University of Ruse Angel Kanchev); Anka Krasteva (University of Ruse Angel Kanchev)

### **P2.11 Profile Length Measurement System Using USB Camera**

Petar Panayotov (TU Gabrovo); Goran Goranov (TU-Gabrovo)

### **P2.12 Inhibitory Effect of Ethanol Extract of Bilberry on Aluminium Alloy Corrosion EN AW-2024**

Iva Naydenova (Technical University of Sofia, branch Plovdiv); Kalina Kamarska (Technical University of Sofia, branch Plovdiv); Ivalina Petrova (Technical University of Sofia, branch Plovdiv); Desislava Dimowa (Technical University of Sofia, branch Plovdiv); Georgi Dobrev (Technical University of Sofia, branch Plovdiv)

### **P2.13 Effect of Camera Orientation Angle on UAV Crop Assessment Accuracy**

Asparuh Atanasov (Technical University of Varna, Bulgaria); Aleksandrina Bankova (Technical Unieristy of Varna)

**P2.14 The Influence of Location Accuracy on the Estimation of Crops with a Budget UAV in Dobrudja**

Asparuh Atanasov (Technical University of Varna, Bulgaria); Aleksandrina Bankova (Technical University of Varna)

**P2.15 Analyzing the Potential of Savonius Wind Turbines for Low-Wind Energy Areas**

Marius S.V Mares (UPB); Gheorghe-Alexandru Mătuşa (UPB); Paul Svasta (UPB-CETTI); Sandra-Maria Porumbel (ASE)

**P2.16 Designing and Examining Reactive (LC) Filters Using Computerized Tools**

Adriana N. Borodzhieva (University of Ruse); Snezhinka Zaharieva (University of Ruse); Ivan Georgiev (University of Ruse); Slavi Georgiev (University of Ruse)

**P2.17 Possibility for Extension of the Production Tolerance of a Cylindrical Gauge by Relating it to Risks Type I And Type II when Controlling the Functional Surfaces of Electrical Motors**

Danko Tonev (University of Ruse "Angel Kanchev")

**P2.18 Determination of photocell efficiency**

Georgi L Dobrev (Technical University of Sofia branch Plovdiv)

**Thursday, 27 June 2024**

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20:00 Welcome Cocktail (Grand Hotel Riga, White Saloon)

**From Thursday, 27 June 2024 to Saturday, 29 June 2024, Virtual Poster Session**

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10:00 – 16:00 Virtual Poster Session (Available at the conference website)

**Session chair:** Atanas ATANASOV, University of Ruse “Angel Kanchev”

**Session co-chair:** Svilen KUNEV, University of Ruse “Angel Kanchev”

**VP1 Gaseous Fuel Preparation for Power Plants Using a New Adsorbent-Indicator from Solid Waste from Industrial and Energy Complex Enterprises**

Iliya K. Iliev (Ruse University); Antonina Filimonova (Kazan State Power Engineering University); Alena Vlasova (Kazan State Power Engineering University); Ivan Beloev (University of Ruse)

**VP2 Development of a Methodological Approach for the Analysis of Urban Metabolism**

Iliya K. Iliev (Ruse University); Alexander Fedyukhin (NRU Moscow Power Engineering Institute Moscow)

**VP3 Management by Objectives: Modeling the Investment Policy of Service Enterprises from the Perspective of the Digital Economy**

Mikhail K Chernyakov (Siberian University of Consumer Cooperation, Kazan Cooperative Institute (branch) of the Russian University of Cooperation); Olga Chistyakova (Siberian University of Consumer Cooperation); Vladislav Chernyakov (Siberian Institute of Management)

**VP4 Modeling of the Processes of Using Agricultural Machinery Products for Automation of Personal Subsidiary Farms**

Mikhail K Chernyakov (Siberian University of Consumer Cooperation, Kazan Cooperative Institute (branch) of the Russian University of Cooperation); Maria Chernyakova (Siberian University of Consumer Cooperation); Viktor Chechulin (Siberian University of Consumer Cooperation); Shakir Suleymanov (Siberian University of Consumer Cooperation)

**VP5 Intelligent Systems and Technologies in the Field of Hotel Services**

Mikhail K Chernyakov (Siberian University of Consumer Cooperation, Kazan Cooperative Institute (branch) of the Russian University of Cooperation); Maria Chernyakova (Siberian University of Consumer Cooperation); Alexandr Kapustin (Siberian University of Consumer Cooperation)

**VP6 Modeling of Business Processes in the Conditions of Green Economy Growth**

Marat V. Mardanov (Kazan Cooperative Institute (branch) ANO VPO Central Union of the Russian Federation “Russian University of Cooperation”); Lyudmila Gainulova (Kazan Cooperative Institute (branch) ANO VPO Central Union of the Russian Federation “Russian University of Cooperation”); Nadezhda Kozar (Kazan Cooperative Institute (branch) ANO VPO Central Union of the Russian Federation “Russian University of Cooperation”); Alexander Kozar (Kazan Cooperative Institute (branch) ANO VPO Central Union of the Russian Federation “Russian University of Cooperation”); Farit Nurgaliev (Kazan State Academy of Veterinary Medicine named after N.E. Bauman)

**VP7 Development of a New Front Heat Generator Device and Results of Numerical Simulation on Comsol Multiphysics**

Aigerim Sapargaliyeva (S.Seifullin Kazakh Agrotechnical Research University)

**VP8 A Computational Approach for Predicting the Short-Term Output Power of a Wind Turbine in an Urban Area**

Alina Fazylova (Satbayev University); Grigor Mihaylov (University of Telecommunications and Post); Teodor B. Iliev (University of Ruse); Ivaylo Stoyanov (University of Ruse); Selahattin Kosunalp (Bandirma Onyedi Eylul University); Gani Balbayev (Eurasian national university )

**VP9 Extending the Life of Batteries through Rational Exploitation**

Constantin Daniel Oancea (University Politehnica of Bucharest); Daniel Laurentiu Cazacu (Robert Bosch - Engineering Center Sofia)

**VP10 Investigating the Challenges of Monitoring Open-Pit Mining Slope Conditions for the Safe Operation of Earthmoving and Construction Machinery**

Tatyana Golubeva (Almaty University of Power Engineering and Telecommunications); Viktor Tailakov (Almaty University of Power Engineering and Telecommunications named after Gumarbek Daukeyev); Sergey Konshin (Almaty University of Power Engineering and Telecommunications); Teodor B. Iliev (University of Ruse); Ivan Beloev (University of Ruse); Yaroslav Napadailo (Almaty University of Power Engineering and Telecommunications)

**VP11 The dependence of the membrane performance indicator on the service life of reverse osmosis plants**

Ainur Begimbetova (Almaty University of Power engineering and Telecommunications named G.Daukeyev ); Aliya Yelemanova (Almaty University of Power engineering and Telecommunications named G.Daukeyev ); Bermeta Kali (Almaty University of Power engineering and Telecommunications named G.Daukeyev)



**VP12 Some Considerations Regarding Obtaining Hydrogen by Electrolysis**

Constantin Daniel Oancea (University Politehnica of Bucharest); Daniel Bostan (RARTEL SA)

**VP13 Monitoring the Homogeneity of Temperature Fields in Thermal Chambers**

Daniel Laurentiu Cazacu (Robert Bosch - Engineering Center Sofia); Constantin Daniel Oancea (University Politehnica of Bucharest)

**VP14 Photovoltaic System for Pulse Charging of Battery Power Supply of Sensor Devices in Greenhouses**

Svetoslav Cv Ivanov (TU Sofia, branch Plovdiv); Yanka Ivanova (Trakia University Stara Zagora); Seher Kadirova (University of Ruse "Angel Kanchev")

**VP15 Severity Classification of Philippine Downy Mildew in Corn using Infrared Thermography and Deep Learning**

Mark O Montances (De La Salle University Dasmariñas); Ryan Aldwin Reyes (De La Salle University Dasmariñas); Maria Angela Francisco (De La Salle University Dasmariñas); Kyla Rose Macalanda (De La Salle University Dasmariñas); Earl Jayson Alvaran (De La Salle University Dasmariñas)

**VP16 Research of Electromagnetic Field Distribution when UHF-Drying Wool in the Device**

Natalia Kosulina (State Biotechnological University); Yuri Handola (State Biotechnological University); Mariia Chorna (State Biotechnological University); Vitaly Sukhin (State Biotechnological University); Stanislav Kosulin (Kharkiv National Medical University); Kostiantyn K Korshunov (State Biotechnological University)

**VP17 Chemical characteristics of soap with using hot pepper seeds oil (*Capsicum annum* L.)**

Nikolaya Delinska (UHT Plovdiv)

**VP18 Physical characteristics of soaps obtained with the participation of red hot pepper seed oil (*Capsicum Annuum* L.)**

Nikolaya Delinska (UHT Plovdiv)

**VP19 Assessment of the Quality Profile of Oriental Tobacco from the Commodity Segment of Basma Variety Group (Ecotype Krumovgrad)**

Violeta Nikolova (Institute of Food Preservation and Quality); Nikolay Nikolov (Tobacco and Tobacco Products Institute); Venelina Popova (University of Food Technologies)

**VP20 Comparative Technological Assessment of the Quality Formation of Local and Introduced Varieties of Virginia Flue-cured and Burley Tobaccos**

Nikolay Nikolov (Tobacco and Tobacco Products Institute); Violeta Nikolova (Institute of Food Preservation and Quality); Venelina Popova (University of Food Technologies)

**VP21 Effects of Seed Priming and Foliar Application of Se NPs in the Germination, Seedling Growth and Reproductive Stage of Tomato and Maize**

Ezequiel García-Lo Cascio (Tecnologico de Monterrey); Edgardo I. Valenzuela (Tecnologico de Monterrey); Pabel Cervantes-Avilés (Tecnologico de Monterrey)

**VP22 Energy Efficiency-Oriented Entrepreneurship or Entrepreneurship-Oriented Energy Efficiency Initiatives: A Future Experts' Perspective**

Emil Kotsev (University of Ruse Angel Kanchev); Svilen Kunev (University of Ruse Angel Kanchev)

**VP23 Concept for an IOT-Based Electronic System for Smart Home Automation**

Vladimir V Tsankov (University of Ruse "Angel Kanchev"); Boris I Evstatiev (University of Ruse "Angel Kanchev"); Irena Valova (University of Ruse Angel Kanchev)

**VP24 A Concept of an IoT-Based System for Monitoring the Operation Parameters of Vehicles**

Stiliyan Okishelov (University of Ruse "Angel Kanchev"); Boris I Evstatiev (University of Ruse "Angel Kanchev"); Seher Kadirova (University of Ruse "Angel Kanchev")

**VP25 The Role of Human Capital in the Innovative Development of the Region**

Julya Sergeevna Valeeva (Russian University of Cooperation)

**VP26 Peculiarities of development of modern agricultural cooperation**

Julya Sergeevna Valeeva (Russian University of Cooperation)

**VP27 Macroeconomic Factors Affecting the Value Added Tax Receipts in the Consolidated Budget**

Julya Sergeevna Valeeva (Russian University of Cooperation)

**VP28 Power System Fast Frequency Control in Low Inertia Environment using MPC**

Byungchul Kim (University of Maryland at College Park)

**VP29 Frequency Management Strategy with Management of a Hybrid Energy Storage System in Island Microgrid**

Byungchul Kim (University of Maryland at College Park)

**VP30 Frequency Control in the Islanded Smart Microgrid Via Diesel-engine Generator**

Byungchul Kim (University of Maryland at College Park)

**VP31 Price disproportions and other barriers to technological development of agricultural enterprises**

Marina Uryadnikova (Kazan Cooperative Institute (branch) of the Russian University of Cooperation); Yana Nashirvanova (Kazan Cooperative Institute (branch) of the Russian University of Cooperation); Nadezhda Zhilina (Kazan Cooperative Institute (branch) of the Russian University of Cooperation); Natalya Sharnina (Kazan Cooperative Institute (branch) of the Russian University of Cooperation)

**VP32 Research of the method of dust extraction efficiency reducing the soot concentration in exhaust gases and justification of protective measures**

Assel Abikenova (Almaty University of Power engineering and Telecommunications named G.Daukeyev); Toty Sanatova (Almaty University of Power engineering and Telecommunications named G.Daukeyev); Farida Zhandauletova (Almaty University of Power engineering and Telecommunications named G.Daukeyev)

**VP33 The modern concept of franchisee partnership in terms of strategic management**

Anna Shokhnekh (Volgograd State Socio-Pedagogical University )

**VP34 Problems of quantitative assessment of the state financial security and ways to overcome them**

Anna Shokhnekh (Volgograd State Socio-Pedagogical University )

**VP35 Theoretical prerequisites for improving the efficiency of tractor operation in agriculture**

Julya Sergeevna Valeeva (Russian University of Cooperation)

**VP36 The essence and significance of modern industrial policy**

Julya Sergeevna Valeeva (Russian University of Cooperation)

**VP37 Instrumental and methodological approaches to assessing the effectiveness of the franchising mechanism in regional entrepreneurship**

Anna Shokhnekh (Volgograd State Socio-Pedagogical University)

**VP38 Developing and Evaluating IoT-based Digital Farming and Environmental Security Course: Al Istiqlal University Experience**

Walid Khalilia (Al Istiqlal University)

**VP39 Study of Voltage Stability in Microgrid with PV**

Gergana Vacheva (Technical University of Sofia); Plamen Stanchev (Technical University of Sofia); Nikolay Hinov (Technical University of Sofia)

**VP40 A Platform for the Development of Software Applications for the Control of Power Electronic Devices**

Gergana Vacheva (Technical University of Sofia); Kiril Genev (Technical University of Sofia); Nikolay Hinov (Technical University of Sofia)

**VP41 Harmonic Analysis of Flyback DC-DC Converter**

Gergana Vacheva (Technical University of Sofia); Plamen Stanchev (Technical University of Sofia); Nikolay Hinov (Technical University of Sofia)

**VP42 Innovations in Electric Vehicle Supply Equipment: The Path Towards Smart Agriculture**

Mircea-Alexandru I Călin (Polytechnic University of Bucharest); Paul Svasta (UPB-CETTI)

**VP43 Economical Temperature Level for Hybrid Systems Composed of Air to Water Heat-Pump and Boiler**

Mugurel F Talpiga (Doctoral School of Technical University of Civil Engineering Bucharest)

**Friday, 28 June 2024**

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09:00 – 16:00 Registration (University of Ruse, Building 2, Floor 1 Lobby)

**Friday, 28 June 2024, Oral Session 3**

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09:00 - 10:30 Oral Session 3 (University of Ruse, Building 2, Hall Г305)

**Session chair:** Angel Terziev, Technical university of Sofia

**Session co-chair:** Hristo Milushev, Nikola Vaptsarov Naval Academy

**O3.1 A Synergetic Approach for the Analysis of Volume Mixture Formation in Modern Marine Diesel Engines**

Yuliyen Moskov (Nikola Vaptsarov Naval Academy); Hristo Milushev (Nikola Vaptsarov Naval Academy)

### **O3.2 Experimental Investigation of Production of Hydrochar from Straw**

Rositsa Velichkova (Technical University of Sofia)

### **O3.3 Numerical Analysis of a Resorption Heat Pump with two Useful Heating Effects**

Cristian C Iosifescu (Univ "Dunarea de Jos " Galati); Gelu I Coman (Dunarea de Jos University)

### **O3.4 Estimation of the Seasonal Coefficient of Performance of Air-to-Water Heat Pumps in Temperate Climate**

Ivan Dimchev (Technical University of Sofia); Angel K Terziev (Technical University of Sofia); Martin P. Ivanov (Technical University - Sofia)

### **O3.5 Constructive Parametric Modeling of The Fuel Supply Law for Building a Synergetic System**

Yuliyana Moskov (Nikola Vaptsarov Naval Academy); Hristo Milushev (Nikola Vaptsarov Naval Academy); Aleksandra Buserska (Nikola Vaptsarov Naval Academy)

### **O3.6 Low Cost Speed Estimator for Marine Generators**

Milen Bonev (Nikola Vaptsarov Naval Academy); Hristo Milushev (Nikola Vaptsarov Naval Academy)

## **Friday, 28 June 2024, Oral Session 4**

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09:00 - 10:30 Oral Session 4 (University of Ruse, Building 2, Hall Г307)

**Session chair:** Krasimira Stoilova, IICT-BAS

**Session co-chair:** Donika Dimanova, Konstantin Preslavsky University of Shumen

### **O4.1 Animal Husbandry Production Forecasting**

Krasimira Stoilova (Institute of Information and Communication Technologies - Bulgarian Academy of Sciences); Todor Stoilov (Institute of information and communication technologies - Bulgarian Academy of Sciences)

### **O4.2 Cattle-Based Manure Management and Soil Fertilization System for Labor Efficiency**

Youjin Kim (Kyung Hee University); Chaerim Lim (Yonsei University); Seunghyeon Cho (Daegu Catholic University); Hayoung Kim (Soonchunhyang University); Olivia Anderson (Purdue University); Duong Dinh (Purdue University); Anthony Smith (Purdue University)

### **O4.3 Augmentation of Farmers' Income through Non Pesticidal Management (NPM) Input Production: An Economic Analysis**

Aravind Kumar Saride (Indian Institute of Technology, Kharagpur); Mrigank Sharad (Indian Institute of Technology, Kharagpur)

### **O4.4 Risk Management in Farming: An Overview of Sources, Decision-making and Reduction Strategies**

Yordanka Boneva (Institute of Information and Communication Technologies - Bulgarian Academy of Sciences); Boriana Vatchova (Institute of Information and Communication Technologies - Bulgarian Academy of Sciences); Krasimira Stoilova (Institute of Information and Communication Technologies - Bulgarian Academy of Sciences)

#### **O4.5 Natural Disaster Frequency Model Program with Chebyshev Polynomial**

Donika V Dimanova (Konstantin Preslavsky University of Shumen); Zdravko Y Kuzmanov (Konstantin Preslavsky University of Shumen)

#### **O4.6 Implementing the Green Deal and CSRD in Bulgaria – A Challenge or an Opportunity for The Business?**

Elitsa Kuzmanova (Konstantin Preslavsky University of Shumen); Donika V Dimanova (Konstantin Preslavsky University of Shumen)

### **Friday, 28 June 2024, Oral Session 5**

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09:00 - 10:30 Oral Session 5 (University of Ruse, Building 2, Hall Г308)

**Session chair:** Gabriel Negreanu, University Politehnica of Bucharest

**Session co-chair:** Grigor Mihaylov, University of Telecommunications and Post

#### **O5.1 Analysis model for CO<sub>2</sub> emissions of Romanian Power Plants fueled with Natural Gas**

Gabriel P. Negreanu (UPB); Lucian Mihaescu (University Politehnica of Bucharest); Ionel Pisa (UP Bucuresti); Gheorghe Lazaroiu (University POLITEHNICA of Bucharest)

#### **O5.2 Analysis of Synchronization Process of Synchronous Generators in Shipboard Power Systems: A Laboratory Study**

Dimitar Tsvetanov (Naval academy N.Y.Vaptsarov); Hristo Milushev (Nikola Vaptsarov Naval Academy); Nikolay Djagarov (Nikola Vaptsarov Naval Academy); Zhivko Grozdev (Nikola Vaptsarov Naval Academy)

#### **O5.3 Possibilities for using Magic Formula for Characteristics Prediction**

Rosen Ivanov (University of Ruse Angel Kanchev)

#### **O5.4 A Comparison between Some Properties of Electric and Compressed Air Cars**

Rosen Ivanov (University of Ruse Angel Kanchev)

#### **O5.5 Microgrid Model for Evaluating the Operational Dynamics of Solar-Powered Hydrogen Production**

Mohammed Gamal (University POLITEHNICA of Bucharest); Cristian V Strejoiu (Polytechnic University of Bucharest); Gheorghe Lazaroiu (University POLITEHNICA of Bucharest); Cornel Panait (University MARITIMA of Constanța)

#### **O5.6 Vegetable Biomass – Source of Green Hydrogen Production Through Gasification**

Lucian Mihăescu (National University of Science and Technology Politehnica Bucharest); Gheorghe Lazaroiu (University POLITEHNICA of Bucharest); Gabriel P Negreanu (University Politehnica of Bucharest); Ionel Pisa (UP Bucuresti); Rodica M Grigoriu (University Politehnica of Bucharest); Dorel Stoica (UPB); Iulia Simion (UPB); Bogdan Niculescu (Dâmbovița Agricultural Directorate)

### **Friday, 28 June 2024**

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10:30 - 11:00 Coffee Break (University of Ruse, Building 2, Hall 203)

### Friday, 28 June 2024

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10:30 - 11:00      University – Industry Dialogue Booths (University of Ruse, Building 2, Hall 203)

### Friday, 28 June 2024

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10:30 - 11:00      Huawei Demonstration Bus (University of Ruse, In Front of Building 2)

### Friday, 28 June 2024, Plenary Session 2

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11:00 – 12:30      Plenary Session 2 (University of Ruse, Building 2, Hall 101, [online](#))

**Session chair:** Irena Valova, University of Ruse “Angel Kanchev”

**Session co-chair:** Gheorghe Lazaroiu, University POLITEHNICA of Bucharest

#### **PL2.1    Precision agriculture trends in the context of climate changes**

Nicolae-Valentin Vlăduț (The National Institute of Research – Development for Machines and Installations Designed for Agriculture and Food Industry – INMA Bucharest, Romania)

#### **PL2.2    Business Decision-Making in Husbandry Management**

Todor Stoilov (Institute of Information and Communication Technologies – Bulgarian Academy of Sciences, Bulgaria), Krasimira Stoilova (Institute of Information and Communication Technologies – Bulgarian Academy of Sciences, Bulgaria)

### Friday, 28 June 2024

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12:30 - 14:00      Launch Break

### Friday, 28 June 2024

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14:00 – 15:00      Industrial Session (University of Ruse, Building 2, Hall 101)

**Session chair:** Tzvetelin Gueorguiev, University of Ruse “Angel Kanchev”

**Session co-chair:** Nikolay Valov, University of Ruse “Angel Kanchev”

#### **IS1    Evolution of the Bulgarian Grid: Improving Power Supply Stability with Huawei Solutions**

Ivan Valentinov Valchev (Photomate Bulgaria, Plovdiv, Bulgaria)

### Friday, 28 June 2024

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15:00 – 15:30      Coffee Break (University of Ruse, Building 2, Hall 203)

## Friday, 28 June 2024

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15:00 – 15:30      University – Industry Dialogue Booths (University of Ruse, Building 2, Hall 203)

## Friday, 28 June 2024

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15:00 – 15:30      Huawei Demonstration Bus (University of Ruse, In Front of Building 2)

## Friday, 28 June 2024, Poster Session 3

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15:30 – 16:30      Poster Session 3 (University of Ruse, Building 2, Floor 1 Lobby)

**Session chair:** Teodora HRISTOVA, University of Mining and Geology "St. Ivan Rilski"

**Session co-chair:** Ventsislav KESEEV, University of Ruse "Angel Kanchev"

### **P3.1      Exploratory Statistical Analysis of Heating and Cooling Degree Days in Bulgaria**

Margarita Shopova (Tsenov Academy of Economics); Evgeni Ovchinnikov (Tsenov Academy of Economics)

### **P3.2      Development of an IOT-Based System for Recovery of Potential-Induced Degradation in PV Strings**

Atanas Kabakchiev (University of Ruse "Angel Kanchev"); Boris I Evstatiev (University of Ruse "Angel Kanchev")

### **P3.3      An IOT-Based System for Monitoring and Control of Irrigation Processes**

Reni Kabakchieva (University of Ruse "Angel Kanchev"); Katerina Gabrovska-Evstatieva (University of Ruse Angel Kanchev); Boris I Evstatiev (University of Ruse "Angel Kanchev")

### **P3.4      Integrated Assessment of Groundwater Quality: A Case Study of the Roman City and Its Northern Surroundings**

Petrut Liviu P Bogdan ("Vasile Alecsandri" University of Bacău); Valentin Nedeff ("Vasile Alecsandri" University of Bacau); Mirela Panainte Lehadus (Vasile Alecsandri University of Bacau); Emilian Mosnegutu ("Vasile Alecsandri" University of Bacau); Oana Irimia (Vasile Alecsandri University of Bacau)

### **P3.5      Advanced Management Technologies for Intelligent Cattle Breeding Systems**

Iliyan Damyanov (Technical University of Sofia); Durhan Saliev (Technical university of Sofia); Kalin L Dimitrov (TU-Sofia); Vladimir Hristov (Technical university of Sofia)

### **P3.6      Pasture Biomass Research Using Unmanned Aerial Vehicle**

Durhan Saliev (Technical university of Sofia); Iliyan Damyanov (Technical University of Sofia); Kalin L Dimitrov (TU-Sofia); Georgi Mladenov (Technical university of Sofia)

### **P3.7      Pasture Terrain Research Via Drone**

Durhan Saliev (Technical university of Sofia); Kalin L Dimitrov (TU-Sofia); Georgi Mladenov (Technical university of Sofia); Tsvetan I Valkovski (Technical University of Sofia)

### **P3.8 Optical Properties of Apple Varieties Grown in Bulgaria**

Krastena Nikolva (Meical University Varna)

### **P3.9 Electrochemical Properties of Phycocyanin, Extracted from Spirulina by Green Methods**

Krastena Nikolva (Medical University Varna)

### **P3.10 Software Uses in Precision Agriculture Based on Drone Image Processing – A Review**

Ioja F Iosif (University of Bacau „Vasile Alecsandri”); Valentin Nedeff (“Vasile Alecsandri” University of Bacau); Agop Maricel (Universitatea Tehnică „Gheorghe Asachi” din Iași); Florin Nedeff (“Vasile Alecsandri” University of Bacau); Claudia C Tomozei (Vasile Alecsandri University of Bacau)

### **P3.11 Experimental Pasture Model with Remote Access of the Data**

Atanas Sevov (Agricultural University - Plovdiv); Georgi Stanchev (Agricultural University - Plovdiv); Georgi Komitov (AgriculturalUniversity-Plovdiv)

### **P3.12 General Methodology Determination of the Total Greenhouse Gas Generated By Conventional and Robotic Crops**

Georgi Komitov (AgriculturalUniversity-Plovdiv); Evgeni Kehayov (AgriculturalUniversity-Plovdiv); Ivan Mitkov (AgriculturalUniversity-Plovdiv); Vladimir Kotev (University of National and World Economy); Atanas Sevov (Agricultural University - Plovdiv); Georgi Stanchev (Agricultural University - Plovdiv)

### **P3.13 Study of the Noise Level in an Ice Cream Factory Working Environment**

Claudia C Tomozei (Vasile Alecsandri University of Bacau); Emilian Mosnegutu ("Vasile Alecsandri" University of Bacau); Valentin Nedeff (“Vasile Alecsandri” University of Bacau); Oana Irimia ( Vasile Alecsandri University of Bacau); Mirela Panainte Lehadus (Vasile Alecsandri University of Bacau); Florin Marian Nedeff (Vasile Alecsandri University of Bacau); Alexandra-Dana Chitimus (Vasile Alecsandry University of Bacau); Narcis Barsan (Vasile Alecsandri University of Bacau)

### **P3.14 Calculation Methods for Energy Conservation in Street Lighting**

Mila I Obretenova (Mining and Geology University); Radi Pipev (“Sofia project”, Municipal Company)

### **P3.15 Sensor-Driven Motorized Solution for Beehive Entrance Control**

George M Florea (UPB-CETTI); Norocel Codreanu (UPB-CETTI)

### **P3.16 Study of Bulgarian Consumers’ Attitude Towards the Use of Sunflower Husk Pellets**

Penka Zlateva (Technical University of Varna); Mariana Murzova (Technical University of Varna); Angel K Terziev (Technical University of Sofia)

### **P3.17 Considerations Regarding Barley Germination**

Gaudentiu Varzaru (Syswin Solutions); Viorel Fatu (Institute for Research and Development for Plant Protection); Roxana Tulea (Syswin Solutions); Razvan Ungurelu (SYSWIN Solutions); Mihai Secere (Syswin Solutions); Cristina Fatu (Institute for Research and Development for Plant Protection); Carmen-Mihaela Botea (Institute for Research and Development for Plant Protection)

### **P3.18 Production of biodiesel form low-quality vegetable oils with a high content of free fatty acids by acid-catalyzed transesterification**



Vasil Kopchev (University of Ruse “Angel Kanchev”); Stanislav Bayryamov (University of Ruse “Angel Kanchev”)

**P3.19 Production of biodiesel from low-quality vegetable oils with a high content of free fatty acids by alkaline transesterification**

Vasil Kopchev (University of Ruse “Angel Kanchev”)

**Friday, 28 June 2024, Poster Session 4**

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16:30 – 17:30      Poster Session 4 (University of Ruse, Building 2, Floor 1 Lobby)

**Session chair:** Stanislav PENCHEV, University of Ruse “Angel Kanchev”

**Session co-chair:** Ioan Viorel BANU, “Vasile Alecsandri” University of Bacau

**P4.1 Potential Use of the Vibroacoustic Analysis of an Engine in the Analysis of Exhaust Gases Composition**

Radostin D Dimitrov (Technical university of Varna)

**P4.2 Creation of Software Management for Water Dynamometer**

Radostin D Dimitrov (Technical university of Varna)

**P4.3 Winter Wheat Varieties Responsiveness to Soil and Foliar Fertilization**

Radostin D Dimitrov (Technical university of Varna); Neli Veleva (Technical University of Varna)

**P4.4 Black Chokeberry (Aronia Melanocarpa) Copigmentation Reaction: Thermodynamic and Kinetic Investigations**

Vanya D Gandova (University of Food Technologies); Ivalina Petrova (Technical University-Plovdiv)

**P4.5 Thermal Degradation Kinetic and Thermodynamic Investigation of Two Types Cold-Pressed Vegetable Oils**

Vanya D Gandova (University of Food Technologies)

**P4.6 Viscosity and Surface Properties of Three Essential Oils**

Vanya D Gandova (University of Food Technologies)

**P4.7 Coefficient of diffusion of tannins in extracts from red and black hawthorn Fruit**

Anton Lazarov (University of Food Technologies, Plovdiv); Vanya Prodanova-Stefanova (Technical University of Sofia, College Sliven); Ira Taneva (Trakia University)

**P4.8 Influence of the Surface Tension of Teas on the Temperature and Addition of Common Thyme and Summer Savory Essential Oils**

Anton Lazarov (University of Food Technologies, Plovdiv); Vanya D Gandova (University of Food Technologies); Albena Stoyanova (University of Food Technologies)

**P4.9 Effect of Sterilization of Sweet Fennel Fruits (Foeniculum Vulgare var. Dulce mill.) on Essential Oil Yield and Composition**

Anton Lazarov (University of Food Technologies, Plovdiv); Martina Pencheva (University of Ruse “Angel Kanchev”, Ruse); Ivan Iliev (University of Plovdiv “Paisii Hilendarski”,

Bulgaria); Vanya Prodanova-Stefanova (Technical University of Sofia, Sliven Faculty and College, Sliven)

**P4.10 Effect of Lemon Balm (*Melissa officinalis* L.) Essential Oil on Some Characteristics of Oil/Water Food Emulsions**

Ivan Iliev (University of Plovdiv "Paisii Hilendarski", Bulgaria); Vanya D Gandova (University of Food Technologies); Albena Stoyanova (University of Food Technologies)

**P4.11 l-Carvone - Prediction of Potential Absorption, Distribution, Metabolism and Excretion**

Ivan Iliev (University of Plovdiv "Paisii Hilendarski", Bulgaria); Yana Koleva Koleva (University Prof. Dr. Assen Zlatarov); Vanya D Gandova (University of Food Technologies); Albena Stoyanova (University of Food Technologies)

**P4.12 Lipid Composition and Physicochemical Parameters of Unrefined Sunflower Oil**

Ivan Iliev (University of Plovdiv "Paisii Hilendarski", Bulgaria); Vanya D Gandova (University of Food Technologies); Olga Teneva (University of Plovdiv "Paisii Hilendarski", Plovdiv); Zhana Petkova (University of Plovdiv "Paisii Hilendarski", Plovdiv); Albena Stoyanova (University of Food Technologies)

**P4.13 Spatial Distribution and Variability of Soil Agrochemical Properties in Botevgrad Valley**

Biser Hristov (University of Forestry)

**P4.14 Skin Sensitization Evaluation of a Flavanol from Processed Rose Wastewater for Cosmetic Application**

Yana Koleva Koleva (University Prof. Dr. Assen Zlatarov); Milena Miteva (University Prof. Dr. Assen Zlatarov); Viktoria Trifonova (University Prof. Dr. Assen Zlatarov); Elisaveta Todorova-Koynova (University Prof. Dr. Assen Zlatarov); Desislava Komunova (University Prof. Dr. Assen Zlatarov)

**P4.15 Possible Toxicological Properties of Catechin from Processed Rose Wastewater**

Yana Koleva Koleva (University Prof. Dr. Assen Zlatarov); Viktoria Trifonova (University Prof. Dr. Assen Zlatarov); Milena Miteva (University Prof. Dr. Assen Zlatarov); Elisaveta Todorova-Koynova (University Prof. Dr. Assen Zlatarov); Desislava Komunova (University Prof. Dr. Assen Zlatarov)

**P4.16 Soil Peroxidase and Polyphenoloxidase Activity under Soil Conservation Practices on Sloping Terrains**

Gergana Slavova Kuncheva (ISSAPP Nikola Poushkarov)\*; Iliana Ivanova (IASS "Obraztsov Chiflik" – Ruse); Galin Gynchev (IASS "Obraztsov Chiflik" – Ruse)

**P4.17 Content of Biologically Active Substances and Antioxidant Activity of Aqueous-Ethanol Extracts of Cultivated Rosehip Fruit Obtained by Ultrasonic Extraction**

Iliana Nikolova (University of Ruse); Ira Taneva (Trakia University); Nadezhda Mazova (University of Food Technologies); Martina Pencheva (University of Ruse)

**P4.18 Chemical Composition and Antioxidant Activity of Propolis, Stored for More Than 30 Years**

Iliana Nikolova (University of Ruse); Stanka Damyanova (University of Ruse); Iliana Kostova (University of Ruse); Ira Dimitrova (Trakia University); Iva Dincheva (Agricultural Academy); Martina Pencheva (University of Ruse); Vanya Prodanova (Technical University of Sofia, Sliven Faculty and College); Albena Stoyanova (University of Food Technologies); Darina Gerogieva (University of Ruse)

#### **P4.19 Some Practical Approaches of the Poultry Slaughter Wastewater Treatment by Apply Physico-Chemical Treatment**

Andrei C Zaharia (Vasile Alexandri University from Bacau); Valentin Nedeff ("Vasile Alecsandri" University of Bacau); Nicoleta Frunza (Agricola international S.A.); Florin Nedeff (Vasile Alexandri University from Bacau); Narcis Barsan (Vasile Alecsandri University of Bacau); Alexandra-Dana Chitimus (Vasile Alecsandry University of Bacau)

**Friday, 28 June 2024**

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20:00                      **Gala Dinner (Mehana Chiflika)**

**Saturday, 29 June 2024**

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09:00 – 11:00            **Registration** (University of Ruse, Building 2, Floor 1 Lobby)

**Saturday, 29 June 2024, Oral Session 6**

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09:00 – 10:30            **Oral Session 6** (University of Ruse, Building 2, Hall Γ305)

**Session chair:** Tsvetelina Georgieva, University of Ruse "Angel Kanchev"

**Session co-chair:** Tzvetelin Gueorguiev, University of Ruse "Angel Kanchev"

#### **O6.1 The Process Approach in Artificial Intelligence Management Systems**

Tzvetelin Gueorguiev (University of Ruse "Angel Kanchev")

#### **O6.2 Sociological Imagination on Green Technology: The Influence of Occupational and Professional Background on the Architectural Photovoltaic Application**

Saba Alnusairat (Al-Ahliyya Amman University); Jenan Abu Qadourah (Mutah University)

#### **O6.3 Enhancing Quality Management Systems with Knowledge Management in a University Context**

Tzvetelin Gueorguiev (University of Ruse "Angel Kanchev"); Irina Kostadinova (University of Ruse "Angel Kanchev")

#### **O6.4 Analysis of the Possible Solar Range and Economic Viability of Solar Electric Vehicles**

Ventsislav P Keseev (University of Ruse "Angel Kanchev")

#### **O6.5 Approach for Indirect Measurement of Chlorophyll and Phenophases of Maize Plant Using Image Processing**

Tsvetelina Georgieva (University of Ruse Angel Kanchev); Stanislav Penchev (University of Ruse); Eleonora St Kirilova (University of Ruse); Plamen Daskalov (University of Ruse)

## Saturday, 29 June 2024, Poster Session 5

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10:30 – 11:30      **Poster Session 5** (University of Ruse, Building 2, Floor 1 Lobby)

**Session chair:** Tsvetelina GEORGIEVA, University of Ruse “Angel Kanchev”

**Session co-chair:** Dimitar TRIFONOV, University of Ruse “Angel Kanchev”

### **P5.1      Engineering Methods for Calculating the Process of Filtration of Vegetable Oils under Ultrasonic Cavitation Conditions**

Yuriy I. Enakiev (Institute of Soil Science, Agro-technology and Plant Protection “Nikola Pushkarov”); Petr Osadchuk (Odesa National Technological University); Dmitry Domuschi (Odesa State Agrarian University); Valentyna Bandura (National University of Life and Environmental Sciences of Ukraine); Blagoj Elenov (Institute of Soil Science, Agro-technology and Plant Protection “Nikola Pushkarov”)

### **P5.2      Implementing a Direct Connection Between Employers and Graduates by Means of a Web Based Platform**

Ivan Evstatiev (University of Ruse Angel Kanchev); Georgi Georgiev (Ruse University)

### **P5.3      LQR-based PID Control of DC Motor Speed`**

Donka Ivanova (University of Ruse Angel Kanchev); Nikolay Valov (University of Ruse Angel Kanchev)

### **P5.4      How to Educate Students in Technology Entrepreneurship**

Pavel Vitliemov (University of Ruse)

### **P5.5      A Model for Simulation of the Temperature Field of Flexible Printed Circuit Boards**

Nadezhda Evstatieva ( University of Ruse Angel Kanchev); Boris I Evstatiev (University of Ruse "Angel Kanchev")

### **P5.6      Simulation Study of the Temperature Field of a Flexible PCB**

Boris I Evstatiev (University of Ruse "Angel Kanchev"); Nadezhda Evstatieva ( University of Ruse Angel Kanchev)

### **P5.7      Investigation of Measurement with Cutting Tool Method for Achieving Accuracy with Trial Transition**

Svetlana Koleva (University of Ruse); Kristiyan VeleV (University of Ruse); Milko Enchev (University of Ruse)

### **P5.8      Training of Professionals on PV Systems in Bulgaria**

Boris I Evstatiev (University of Ruse "Angel Kanchev"); Nikolay Valov (University of Ruse Angel Kanchev); Tsvetelina Mladenova (University of Ruse); Vladislav Hinkov (University of Ruse "Angel Kanchev"); Nicolay Mihailov ( University of Ruse Angel Kanchev)

### **P5.9      Analysis of Test Data on the Use of Agras MG-1S UAV for Plant Protection in Precision Farming**

Komil Dullievich Astanakulov (“Tashkent Institute of Irrigation and Agricultural Mechanization Engineers” National Research University)

**P5.10 Potential Use of the Vibroacoustic Analysis of an Engine in the Analysis of Exhaust Gases Composition**

Radostin D Dimitrov (Technical university of Varna)

**P5.11 Creation of Software Management For Water Dynamometer**

Radostin D Dimitrov (Technical university of Varna)

**P5.12 Robot to Collect Cattle Droppings from Pastures - Concept**

Vladimir Dimitrov Hristov (Technical University of Sofia); Ivan Chekurov (Technical University of Sofia); Iliyan Damyanov (Technical University of Sofia)

**P5.13 Results from the Application of a Remote Photovoltaic Lab in STEM Education**

Todor Yordanov (University of Ruse "Angel Kanchev"); Katerina Gabrovska-Evstatieva (University of Ruse Angel Kanchev); Nicolay Mihailov (University of Ruse Angel Kanchev)

**P5.14 Interface for Monitoring of Electrical and non Electrical Data on Board a Vessel**

Hristo Milushev (Nikola Vaptsarov Naval Academy); Nikolay Djagarov (Nikola Vaptsarov Naval Academy); Georgi Enchev (Nikola Vaptsarov Naval Academy)

**P5.15 Advantages and disadvantages of energy storage systems for energy produced by small and medium photovoltaic systems**

Polina Kalinova Petkova (TU-Sofia)

**Saturday, 29 June 2024, Poster Session 6**

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11:30 – 12:30      **Poster Session 6** (University of Ruse, Building 2, Floor 1 Lobby)

**Session chair:** Mila Ilieva-Obretenova, University of Mining and Geology "St. Ivan Rilski"

**Session co-chair:** Nadezhda Evstatieva, University of Ruse "Angel Kanchev"

**P6.1 Pressure gradient resulting from turbulent and viscous friction in smooth pipes**

Roumen Gadjev (ISSAP)

**P6.2 Water distribution by self balanced non-automated facilities in irrigation canals**

Romen Gadjev (ISAP)

**P6.3 Dependency for determination and distribution of tangential tensions of flows in smooth pipes at irrigation**

Roumen Gadjev (ISSAP)

**P6.4 Tailored Review on the Research in the Electric-Energy Efficiency of Transport Processes (Part 1): Bulk Materials and Fluids**

Ognyan Dinolov ("Angel Kanchev" University of Ruse); Radoslav Yordanov (University of Ruse)

**P6.5 Modern technologies for work environment microclimate**

Emil Yankov (University of Ruse); Tzvetelin Gueorguiev (University of Ruse "Angel Kanchev")

**P6.6 CFD Investigation of the Intensity of Heat Transfer at Forced Convection of Preheated Air in a Steel Pipe**

Zhivko Kolev (University of Ruse); Seher Kadirova (University of Ruse "Angel Kanchev"); Daniel Lyubenov (University of Ruse "Angel Kanchev"); Georgi Kadikyanov (University of

Ruse); Bartosz Wieczorek (Poznań University of Technology); Łukasz Warguła (Poznań University of Technology)

**P6.7 Study of the Influence of Pre-Sowing Electromagnetic Treatments on the Length and Mass of Cotton Plant Sprouts After Long-Term Storage**

Kiril Sirakov (University of Ruse)

**P6.8 Development of the Primary Root System after Pre-Sowing Electromagnetic Treatments of Cotton Seeds Stored Under Natural Ageing Conditions**

Kiril Sirakov (University of Ruse)

**P6.9 Evaluation of Triticale Grain Yield After Pre-Sowing Electromagnetic Seed Treatment**

Kiril Sirakov (University of Ruse)

**P6.10 Increase in Convective Intensity Drying of Sweet Root Fruits**

Yuriy I. Enakiev (Institute of Soil Science, Agro-technology and Plant Protection “Nikola Pushkarov”); Olena Husarova (National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”); Vadym Paziuk (Institute of Engineering Thermophysics of NAS of Ukraine); Petr Osadchuk (Odesa National Technological University); Tetyana Semko (Vinnytsia Trade and Economics Institute of the State Trade and Economics University); Valentyna Bandura (National University of Life and Environmental Sciences of Ukraine)

**P6.11 Improvement of Technology in the Cultivation of Strawberries Hybrid Soraya F1 During a Vegetative Trial**

Yuriy I. Enakiev (Institute of Soil Science, Agro-technology and Plant Protection “Nikola Pushkarov”); Halyna Balan (Odesa State Agrarian University); Andriy Melnychenko (Odesa State Agrarian University); Valentyna Sergiyenko (Institute of Plant Protection of the National Academy of Agrarian Sciences); Dmitry Domuschi (Odesa State Agrarian University)

**P6.12 Family Businesses and Green Transformation - Attitudes and Opportunities for the Development of Sustainable Intergenerational Businesses**

Daniel Y Pavlov (University of Ruse "Angel Kanchev"); Matei Tamasila (Politehnica University of Timisoara); Ana Todorova (University of Ruse "Angel Kanchev"); Julia Murzina (Tyumen State University)

**P6.13 The Role of Environmental Non-Governmental Organizations in Achieving Energy Efficiency**

Ana Todorova (University of Ruse "Angel Kanchev"); Irina Kostadinova (University of Ruse "Angel Kanchev")

**P6.14 Performance Analysis of a 5 kW Photovoltaic Installation for Water Pumping in Rural Areas in Yemen**

Musaab Almaidan (Mugla Sitki Kocman University); Mahmut Tenruh (Mugla Sitki Kocman University); Katerina Gabrovska-Evstatieva (University of Ruse Angel Kanchev); Nikolay Valov (University of Ruse Angel Kanchev); Ventsislav P Keseev (University of Ruse "Angel Kanchev"); Seher Kadirova (University of Ruse Angel Kanchev), Nicolay Mihailov (University of Ruse Angel Kanchev)

**Saturday, 29 June 2024**

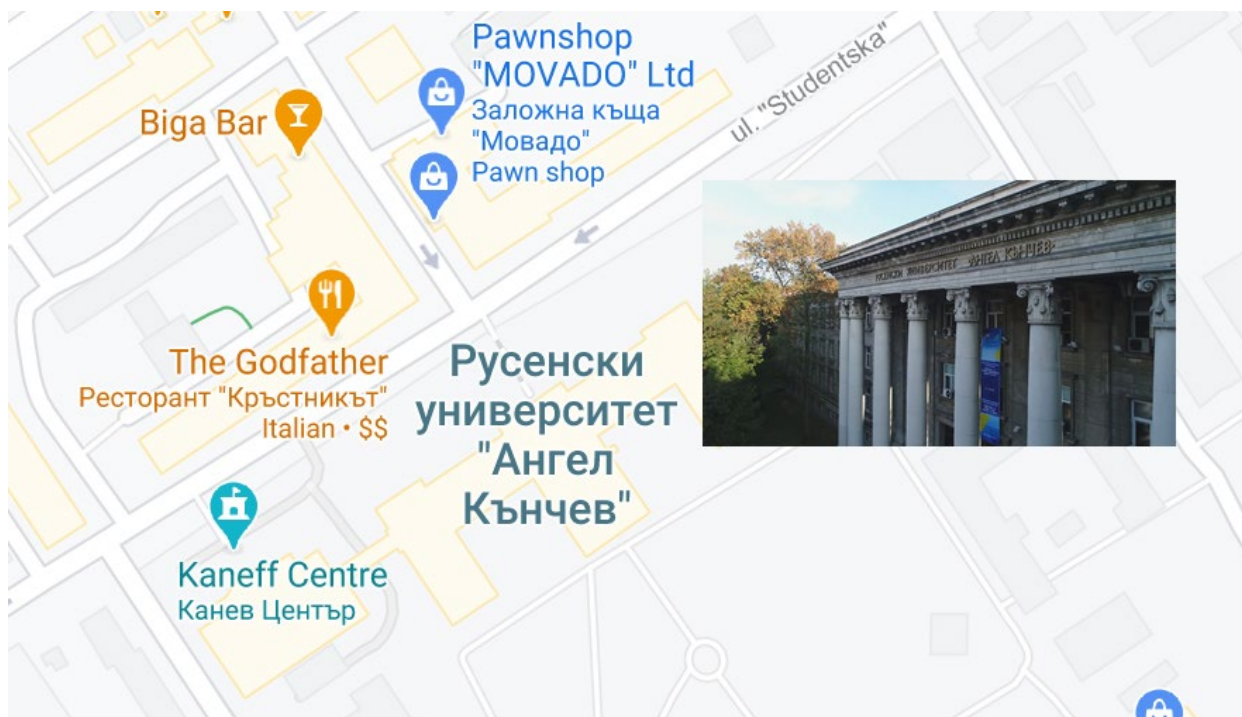
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12:30-12:45

**Farewell Coffee, End of Conference (University of Ruse, Building 2, Hall 203)**

## VENUE

The Innovative Week of Technology will take place in the University of Ruse “Angel Kanchev”, 8 Studentska Str., 7017 Ruse, Bulgaria.



For further directions use the GPS coordinates: 43.8546277, 25.9701036.



### CONTACT INFORMATION:

Conference e-mail: [eeae@uni-ruse.bg](mailto:eeae@uni-ruse.bg)

Mobile 1: (00359) 888 53 93 88

Mobile 2: (00359) 887 49 99 34

### WIFI INFORMATION:

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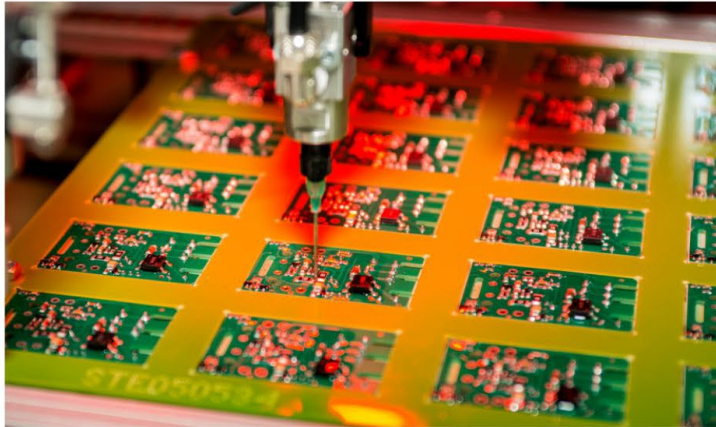
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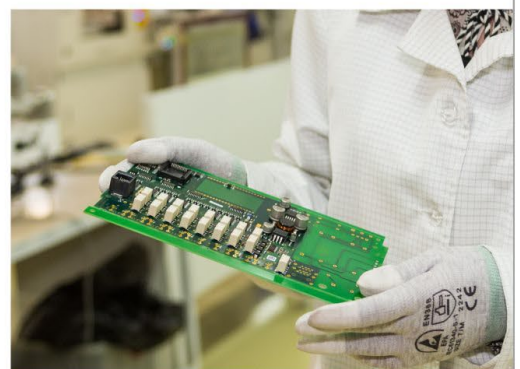
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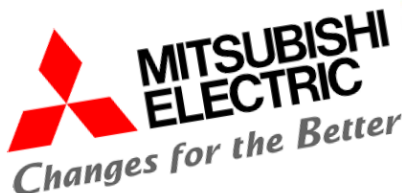
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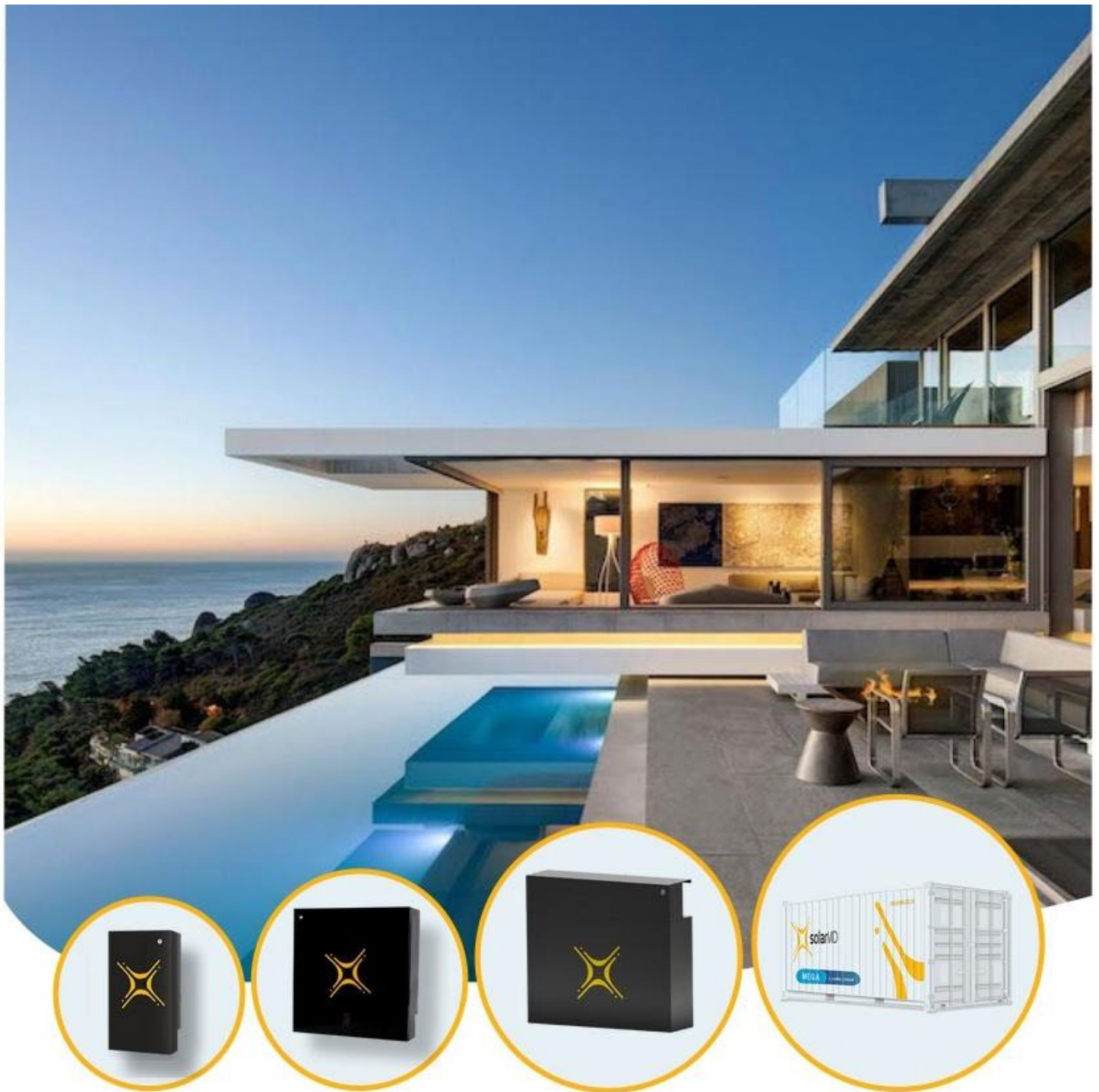


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