



EEPES.EU

International Conference on Electronics,
Engineering Physics and Earth Science

EEPES 2023

**International Conference on
Electronics, Engineering Physics and Earth Science**

**June 21-23, 2023,
Kavala, Greece**

Conference Programme



Organized by:



Association on Communication, Information, Electronic and Energy System

Institutional Partners:



University of Ruse "Angel Kanchev"



University of Telecommunications and Post
Sofia, Bulgaria



International Hellenic University
Kavala, Greece

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Municipality of Kavala,
Greece



Dimofeleia, Kavala, Greece

Welcome to EEPES 2023

Dear participants,

It is our great pleasure to welcome you to the EEPES 2023, Kavala, Greece. The EEPES 2023 Conference is the premier international venue focused on understanding the current state and the evolution of the science through the lens of engineering physics, electronics devices and microelectronics, telecommunications, optical and electromagnetic communication, artificial Intelligence and soft computing, environmental physics and renewable energy and many other disciplines. It is a place where researchers, academics, people in industry, students and the alike to present and discuss progress in research, development, standards, and applications related to the applied and engineering physics.

The technical program of this year's edition of the conference consists of two plenary lecturers: Prof. Dr. George A. Papakostas of Greece and Prof. Dr. Veneta Aleksieva of Bulgaria, 1 technical session and 16 tracks for research papers. The EEPES 2023 conference is in collaboration with AIP Publishing, E3S Web of Conferences and MDPI Engineering Proceedings.

We are thankful to all the people who helped us organizing the conference and that are listed in the next section. In particular, special thanks to the Local Organizing Committee, Conference Chairs, Program Committee members, and reviewers for their wonderful efforts in making a successful and rigorous technical program. Without them, this event would have never happened. Finally, we thank the members of the International Scientific Committee, for providing insightful guidelines and support in preparing and organizing the conference, the organizing committee for their tireless efforts, and for the highly professional work done on all aspects of the local organization of the EEPES 2023 Conference. We are confident that this conference will be a stimulating and rewarding experience, and we hope that you will also have an enjoyable and memorable time during the conference.

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EEPES 2023 CONFERENCE – SESSION SCHEDULE

Wednesday, June 21

Time	Session name	Place	Virtual Room
16:00 - 17:30	Registration	Oceanis Hotel	-
17:30 - 18:00	Opening ceremony (OC)	Conference hall	VR_Hall 1
18:00 - 19:00	Plenary Keynote Lectures	Conference hall	VR_Hall 1
19:00 - 19:15	Coffee break	Conference hall	-
19:15 - 19:35	Technical presentations by Raycap	Conference hall	VR_Hall 1
19:35 - 19:55	Technical presentations by EN.PO.KA S.A.	Conference hall	VR_Hall 1
20:00 – 21:00	Cocktail	Conference hall	-

Join VR_Hall 1 via the following ZOOM link:

<https://us06web.zoom.us/j/6027117207?pwd=YlhBOUU4RkY5UkxxaU9JclBOeWtJZz09>

Meeting ID: 602 711 7207

Passcode: BBXmV6



Join VR_Hall 2 via the following ZOOM link:

<https://us06web.zoom.us/j/4729709196?pwd=YkM4cHQvSDZsWE9sMGxVVGZJeGRxZz09>

Meeting ID: 472 970 9196

Passcode: R8T4ZK



IMPORTANT:

1. Please note that at least one author per paper is requested to attend their session.
2. All times are presented in [Eastern European Time \(EET\)](#), so be careful in the recalculation to your national time zone. (EET= CET+1=GMT +2)
3. The details for joining the scheduled conference sessions on Zoom platform will be available on the official website.

Thursday, June 22

In person sessions:

Time	Session name	Place	Type
09:00 - 10:00	Registration	International Hellenic University, Kavala Campus Foyer	
09:30 - 11:00	Energy Efficiency and Applied Thermodynamics	International Hellenic University, Kavala Campus Hall TIE	In person
09:30 - 11:00	Mechatronics and Industrial Automation 1	International Hellenic University, Kavala Campus Hall Pantelis Antoniadis	In person
11:00 – 11:15	Coffee Break	International Hellenic University, Kavala Campus Coffee break & lunch area	
11:15 - 12:45	Mechatronics and Industrial Automation 2	International Hellenic University, Kavala Campus Hall Pantelis Antoniadis	In person
11:15 - 12:45	Information Technologies and Artificial Intelligence 1	International Hellenic University, Kavala Campus Hall TIE	In person
13:00 – 14:00	Lunch	International Hellenic University, Kavala Campus Coffee break & lunch area	
19:30 – 20:00	Kavala sightseeing tour * <i>ask on the registration desk</i>	Meeting point: 3 Ionos Dragoumi Str.	

* **Kavala sightseeing tour:** Needs a reservation in advance on the registration desk, due to the limited availability of places.

Thursday, June 22

Online sessions:

Time	Session name	Place	Virtual Room
09:30 - 11:00	Applied and Engineering Physics 1	Online	VR_Hall 1
09:30 - 11:00	Engineering Education and Engineering Management 1	Online	VR_Hall 2
11:15 - 12:45	Information Technologies and Artificial Intelligence 2	Online	VR_Hall 1
11:15 - 12:45	Engineering Education and Engineering Management 2	Online	VR_Hall 2
13:00 - 14:30	Telecommunication Systems 1	Online	VR_Hall 1

Join VR_Hall 1 via the following ZOOM link:

<https://us06web.zoom.us/j/6027117207?pwd=YlhBOUU4RkY5UkxxaU9JclBOeWtJZz09>

Meeting ID: 602 711 7207

Passcode: BBXmV6



Join VR_Hall 2 via the following ZOOM link:

<https://us06web.zoom.us/j/4729709196?pwd=YkM4cHQvSDZsWE9sMGxVVGZJeGRxZz09>

Meeting ID: 472 970 9196

Passcode: R8T4ZK






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Friday, June 23

In person sessions:

Time	Session name	Place	Type
09:30 - 11:15	Applied and Engineering Physics 2	International Hellenic University, Kavala Campus Hall Pantelis Antoniadis	In person
09:30 - 11:15	Telecommunication System 2	International Hellenic University, Kavala Campus Hall TIE	In person
11:15 - 11:30	Coffee Break	International Hellenic University, Kavala Campus Coffee break & lunch area	
11:30 – 13:00	Renewable Energy and Green Technologies 1	International Hellenic University, Kavala Campus Hall TIE	In person
13:00 – 14:00	Lunch	International Hellenic University, Kavala Campus Coffee break & lunch area	
20:00 – 23:00	Closing Ceremony & Official dinner	Restaurant Apiko	

Friday, June 23

Online sessions:

Time	Session name	Place	Virtual Room
09:30 - 11:00	Mechatronics and Industrial Automation 3	Online	VR_Hall 1
09:30 - 11:15	Electronics, Power Electronics and EMC	Online	VR_Hall 2
11:15 - 13:00	Information Technologies and Artificial Intelligence 3	Online	VR_Hall 1
11:15 - 13:00	Renewable Energy and Green Technologies 2	Online	VR_Hall 2
13:10 - 13:20	Closing ceremony	Online	VR_Hall 1

Join VR_Hall 1 via the following ZOOM link:

<https://us06web.zoom.us/j/6027117207?pwd=YlhBOUU4RkY5UkxxaU9JclBOeWtJZz09>

Meeting ID: 602 711 7207

Passcode: BBXmV6



Join VR_Hall 2 via the following ZOOM link:

<https://us06web.zoom.us/j/4729709196?pwd=YkM4cHQvSDZsWE9sMGxVVGZJeGRxZz09>

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PLENARY KEYNOTE LECTURES

Wednesday, June 21, 2023

Presentation: Computer Vision in the Industry Era



PROF. Dr. GEORGE A. PAPAHOSTAS

(Department of Computer Science, International Hellenic University, Kavala, Greece)

Short biography: Dr George A. Papakostas, received a diploma in Electrical and Computer Engineering in 1999 and the M.Sc. and Ph.D. degrees in Electrical and Computer Engineering in 2002 and 2007, respectively, from the Democritus University of Thrace (DUTH), Greece. Dr. Papakostas is a Tenured Full Professor in the Department of Computer Science, International Hellenic University, Greece.

Dr. Papakostas has 10 years of experience in large-scale systems design, as a senior software engineer and technical manager in INTRACOM TELECOM S.A. and INTALOT S.A. companies.

Currently, he is the Director of the “MLV Research Group” (Machine Learning & Vision Research Group). He has (co)authored more than 200 publications in indexed journals, international conferences and book chapters, 1 book (in greek), 2 edited books and 6 journal special issues. His publications have more than 3000 citations with h-index 32 (GoogleScholar). His research interests include machine learning, computer/machine vision, pattern recognition, computational intelligence. Dr. Papakostas served as a reviewer in numerous journals and conferences and he is a member of the IAENG, MIR Labs, EUCogIII and the Technical Chamber of Greece (TEE).

Presentation: Blockchain Based Solutions: Industry’s Dreams or Reality



PROF. Dr. VENETA ALEKSIEVA

(Computer Science Department, Technical University of Varna, Bulgaria)

Short biography: Dr. Veneta Aleksieva has a Doctoral Diploma in Computer Science and Electrical Engineering in Industry. Currently she is a Full Professor at Department of Computer Science, Technical University of Varna, Bulgaria. She is also a Certified CCNA, CCAI from Cisco Systems, Certified R&M Freenet Certified Designer. Her research interest include Quality of Services in wireless technologies, data security and

data protection, Blockchain technologies.

She participated in more than 15 scientific project as a team member and in 4 as a project coordinator. She is author of more than 120 scientific papers, published in scientific journals or conference proceedings..

EEPES 2023 Conference – Session List

Thursday, June 22, 2023

Session:	Energy Efficiency and Applied Thermodynamics	Time:	09:30 - 11:00
Chair:	Jaroslav MARKOWSKI, Poland		
Hall:	International Hellenic University, Kavala Campus Hall TIE	In person	

№	Paper
ID102	<p>Methodology for energy savings assessment, at engine oil change of road vehicles Angel Terziev¹, Penka Zlateva², and Martin Ivanov¹ ¹ <i>Technical university Sofia, Sofia, Bulgaria</i> ² <i>Technical university Varna, Varna, Bulgaria</i></p>
ID106	<p>Carbon footprint of reservoirs in Bucharest Gabriela Elena Dumitran¹, Liana Ioana Vuță¹, Angela Neagoe¹, Eliza-Isabela Tică¹ and Bogdan Popa¹ ¹ <i>University Politehnica of Bucharest, Bucharest, Romania</i></p>
ID42	<p>A concept for flood early warning Iskra Simova¹, Borislav Ganev¹, Rositsa Velichkova¹, Elitsa Gieva¹ ¹ <i>Technical University of Sofia, Sofia, Bulgaria</i></p>
ID128	<p>IoT sensing node for Fe₂O₃ optical detection in liquid oil suspensions Valentin Mateev¹ and Iliana Marinova¹ ¹ <i>Technical University of Sofia, Sofia, Bulgaria</i></p>
ID78	<p>Experimental investigation of water turbine with oscillating blades Rositsa Velichkova¹, Martin Pushkarov¹, Iskra Simova¹, Detelin Markov¹, Ivan Denev¹, and Radostina Angelova¹ ¹ <i>Technical University of Sofia, Sofia, Bulgaria</i></p>
ID72	<p>Modeling of pollutant emissions from the turbine engine of the main propulsion of a vessel in operating conditions Pawel Wirkowski¹, Jaroslav Markowski², Pawel Imilkowski², Ilia Iliev³, Krzysztof Jesionek⁴, Janusz Badur⁵, Piotr Dlugiewicz⁶, Jacek Madry⁷, Grzegorz Wieczorkiewicz⁸ and Pawel Benedict² ¹ <i>Polish Naval Academy of the Heroes of Westerplatte, Gdynia, Poland</i> ² <i>Poznan University of Technology, Poznan, Poland</i> ³ <i>University of Ruse "Angel Kanchev", Ruse, Bulgaria</i> ⁴ <i>Vitelon Collegium State University, Legnica, Poland</i> ⁵ <i>Institute of Flow Machines of Robert Szwedowski Polish Academy of Sciences, Gdansk, Poland</i> ⁶ <i>Imagine Flying LLC, Ponte Vedra Beach, FL, USA</i> ⁷ <i>SpinTechSystem Sp. z o.o., Sroda Wielkopolska, Poland</i> ⁸ <i>Lower Silesian Center of Modern Technologies Sp. z o.o. Wroclaw, Poland</i></p>

Thursday, June 22, 2023

Session:	Mechatronics and Industrial Automation 1	Time:	09:30 - 11:00
Chair:	Vladislav IVANOV, Bulgaria		
Hall:	International Hellenic University, Kavala Campus Hall Pantelis Antoniadis	In person	

№	Paper
ID6	Classification of parallel kinematics robots Stiliyan Nikolov ¹ , Reneta Dimitrova ¹ , Stanislav Tsolov ¹ and Lubomir Dimitrov ¹ ¹ <i>Technical University of Sofia, Sofia, Bulgaria</i>
ID84	Investigation of a passive ankle joint exoskeleton designed for movements with dorsal and plantar flexion Zhetenbayev Nursultan ¹ , Balbayev Gani ¹ , Abu-Alim Ayazbay ¹ , Nurgizat Yerkebulan ¹ , Duisebayeva Aknur¹ and Kuzembay Serikbol ¹ ¹ <i>University of Power Engineering and Telecommunications, Almaty, Kazakhstan</i>
ID99	Structural design of a rehabilitation robot for the upper limb Bizhanov Dauren ¹ , Zhetenbayev Nursultan¹ , Balbayev Gani ¹ , Kassymbek Ozhikenov ¹ , Kuzembay Serikbol ¹ , and Yussupova Saltanat ¹ ¹ <i>Satbayev University - Almaty, Kazakhstan</i>
ID64	The influence of planet position on axle loads in double planet planetary gear trains Angel Alexandrov¹ , Vladislav Ivanov ¹ ¹ <i>Technical University of Sofia, Sofia 1000, Bulgaria</i>
ID96	Construction and testing of a hydraulic flow meter in a hydraulic system Martin Pushkarov ¹ , Iskra Simova¹ , and Rositsa Velichkova ¹ ¹ <i>Technical University of Sofia, Sofia, Bulgaria</i>
ID63	Load sharing analysis of a full planet engagement planetary gear train Vladislav Ivanov¹ ¹ <i>Technical University of Sofia, Sofia 1000, Bulgaria</i>

Thursday, June 22, 2023

Session:	Mechatronics and Industrial Automation 2	Time:	11:15 - 12:45
Chair:	Foteini KOGIA, Greece		
Hall:	International Hellenic University, Kavala Campus Hall Pantelis Antoniadis	In person	

№	Paper
ID14	Size ranges optimization of pneumatically driven linear modules in the presence of constraints on the values of the modules' main parameters Ivo Malakov ¹ , Velizar Zaharinov¹ , and Hasan Hasansabri ¹ ¹ <i>Technical University of Sofia, Sofia, Bulgaria</i>
ID23	Development of electrical and software part of an automated system for sowing, watering and chemical treatment Slav Dimitrov ¹ , Dimitar Totev ¹ and Anna-Maria Lazarova ¹ ¹ <i>Technical University of Sofia, Sofia, Bulgaria</i>
ID39	Main steps in the process of upgrade of existing systems for automation and control of industrial and manufacturing processes in order to fulfill the requirements of the concept "Industry 4.0" Dimitar Totev ¹ , Reneta Dimitrova ¹ and Slav Dimitrov ¹ ¹ <i>Technical University of Sofia, Sofia, Bulgaria</i>
ID122	Autonomous robotic platform for comprehensive environmental monitoring and mapping: design, implementation, and integration Theodosios Katis ¹ and Theodore H. Kaskalis ¹ ¹ <i>University of Macedonia, Thessaloniki, Greece</i>
ID143	Design of an automated system for sowing, watering and chemical treatment Reneta Dimitrova ¹ , Stiliyan Nikolov ¹ , Slav Dimitrov ¹ and Anna-Maria Lazarova ¹ ¹ <i>Technical University of Sofia, Sofia, Bulgaria</i>
ID46	Research on energy consumption of rolling stocks and approaches to its digitalization Vasil Dimitrov¹ ¹ <i>Todor Kableshkov University of transport, Sofia, Bulgaria</i>

Thursday, June 22, 2023

Session:	Information Technologies and Artificial Intelligence 1	Time:	11:15 - 12:45
Chair:	Teodora HRISTOVA, Bulgaria		
Hall:	International Hellenic University, Kavala Campus Hall TIE	In person	

№	Paper
ID10	Fuzzy logic control in building automation application Albena Taneva ¹ , Desislava Atanasova ¹ and Atanas Daskalov ¹ ¹ <i>Technical University of Sofia, Plovdiv branch Plovdiv, Bulgaria</i>
ID28	Measuring and analysis of speech-to-text accuracy of some automatic speech recognition services in dynamic environment conditions Hasan Gyulyustan ¹ , Hristo Hristov ¹ , Stefan Stavrev¹ , Svetoslav Enkov ¹ ¹ <i>Plovdiv University "Paisii Hilendarski", Plovdiv, Bulgaria</i>
ID62	Electronic booking and payment platforms for inter-campus e-bikes Sinovuyo Dunga ¹ , Oluwafemi Oni ¹ and Omowunmi Mary Longe ¹ ¹ <i>University of Johannesburg, Johannesburg, South Africa</i>
ID104	Hybrid speed bump-PV-battery-grid power generation in a smart grid environment Oluwafemi Oni ¹ , Robert Thokozani Skhosana ¹ and Omowunmi Mary Longe ¹ ¹ <i>University of Johannesburg, Johannesburg, South Africa</i>
ID61	IoT and IoT blockchain market analyzes and benefits in Europe Daniela Mechkaroska ¹ , Ervin Domazet ² , Era Kica ¹ , Amra Feta² , and Aneta Velkoska ¹ ¹ <i>University for Information Science and Technology "St. Paul the Apostle", Ohrid, R. N.Macedonia</i> ² <i>International Balkan University, Skopje, R. N.Macedonia</i>
ID76	Students self- assessment of the importance of presentation skills Irena Popović¹ , Miljenko Hmelina ¹ , Radovan Cesarec ¹ , and Igor Klopotan ² ¹ <i>University of Applied Sciences Hrvatsko Zagorje Krapina, Croatia</i> ² <i>Međimurje University of Applied Sciences, Croatia</i>
ID27	Increasing the functionality of water supply systems for Bulgarian conditions through automation via IoT and blockchain technologies Teodora Hristova¹ , Ivaylo Stoyanov ² , and Boris Evstatiev ² ¹ <i>University of Mining and Geology "St. Ivan Rilski", Sofia, Bulgaria</i> ² <i>University of Ruse "Angel Kanchev", Bulgaria</i>

Thursday, June 22, 2023

Session:	Applied and Engineering Physics 1	Time:	09:30 - 11:00
Chair:	Svilen RACHEV, Bulgaria		
Hall:	Online	Virtual room:	VR_Hall 1

№	Paper
ID31	Thermal stress of photovoltaic panels Abdulah Akšamovic ¹ , Senad Odžak ² , Almasa Odžak ² , and Ajdin Fejzi ¹ ¹ <i>University of Sarajevo, Faculty of Electrical Engineering, Sarajevo, Bosnia and Herzegovina</i> ² <i>University of Sarajevo, Faculty of Science, Sarajevo, Bosnia and Herzegovina</i>
ID98	Voltage asymmetry in electric arc furnaces Kiril Dzhustrov ¹ ¹ <i>University of Mining and Geology "St. Ivan Rilski", Sofia, Bulgaria</i>
ID81	Numerical simulation of solid oxide fuel cell energy production processes Ivan Beloev ¹ , Antonina Filimonova ² , Alexander Pechenkin ² , Azamat Gizzatullin ² , Artem Vinogradov ² , Iliya Iliev ¹ ¹ <i>University of Ruse "Angel Kanchev", Ruse, Bulgaria</i> ² <i>Kazan State Power Engineering University, Kazan, Russia</i>
ID116	The optimized power flow control system for the photovoltaic DC microgrid Elvin Yusubov ¹ , Lala Bekirova ¹ ¹ <i>Azerbaijan State Oil and Industry University, Baku, Azerbaijan</i>
ID21	Pollution of Varna lake and possibilities of using the pollutants as resources Todor Ganchev ¹ , Valentina Markova ¹ , Ivalena Valcheva-Georgieva ¹ , and Ivan Dobrev ² ¹ <i>Technical University of Varna, Varna, Bulgaria</i> ² <i>Hydro-Map EOOD, Varna, Bulgaria</i>
ID86	Introduction of optimal photovoltaic and wind power balance algorithm in power systems Emmanuel Karapidakis ¹ , Marios Nikologiannis ² , George Konstantinidis ¹ , and Yiannis Katsigiannis ¹ ¹ <i>Hellenic Mediterranean University, Heraklion, Greece</i> ² <i>University of Crete, Crete, Greece.</i>
ID125	Study on behaviour of centrifugal pump driven by medium-voltage induction motor during operation control Svilen Rachev ¹ , Kremena Dimitrova ² , and Lyubomir Dimitrov ¹ ¹ <i>Technical University - Gabrovo, Gabrovo, Bulgaria</i> ² <i>Technical University - Sofia, Sofia, Bulgaria</i>

Thursday, June 22, 2023

Session:	Engineering Education and Engineering Management 1	Time:	09:30 - 11:00
Chair:	Bozhana STOYCHEVA, Bulgaria		
Hall:	Online	Virtual room:	VR_Hall 2

№	Paper
ID19	The adaptability of a quality management system to external and internal factors at manufacturing companies Grozovskiy G I ¹ , Levina T A ² , Noskova V E ² and Ershov D S ² ¹ <i>Scientific Technical Center "Industrial Safety", Moscow, Russia</i> ² <i>Moscow Polytechnic University, Moscow, Russia</i>
ID26	Study of the students' grades and motivation in online learning Iglika Getova ¹ , Nikolay Yanev ² , Yordanka Anastasova ² , and Mariana Trifonova ² ¹ <i>University of Library Study and Information Technologies, Sofia, Bulgaria</i> ² <i>University of Mining and Geology "St. Ivan Rilski", Sofia, Bulgaria</i>
ID109	The goals of restructuring the physical production system into an engineering smart production model Miglena Temelkova ¹ and Nikola Bakalov ¹ ¹ <i>University of Telecommunications and Posts, Sofia, Bulgaria</i>
ID134	Designing a heuristic model for SMART management in the medium industrial enterprise Iliyan Bakalov ¹ ¹ <i>Ministry of Innovation and Growth Bulgaria, Sofia, Bulgaria</i>
ID140	An approach to a business intelligence system development Georgi Georgiev ¹ and Pavel Vitliemov ¹ ¹ <i>University of Ruse "Angel Kanchev", Ruse, Bulgaria</i>
ID138	Antecedents of individual innovativeness: exploring gender, age and job nature Emil Kotsev ¹ , and Bozhana Stoycheva ¹ ¹ <i>University of Ruse "Angel Kanchev", Ruse, Bulgaria</i>

Thursday, June 22, 2023

Session:	Information Technologies and Artificial Intelligence 2	Time:	11:15 - 12:45
Chair:	Jacob FANTIDIS, Greece		
Hall:	Online	Virtual room:	VR_Hall 1

№	Paper
ID1	Face mask-wearing classification using machine learning Kalaimagal Ramakrishnan ¹ , Vimala Balakrishnan ² , Wong Hui Yeok ² , Tay Shi Hui ² , Soo Kar Lok ² , and Kiew Weng Kiat ² ¹ <i>University of Nottingham Malaysia, Semenyih, Selangor, Malaysia</i> ² <i>University Malaya, Kuala Lumpur, Malaysia</i>
ID49	Modeling of the magnetic system of an aircraft DC generator Kiril Kambushev ¹ and Martin Kambushev ¹ ¹ <i>Bulgarian Air Force Academy "Georgi Benkovski", Dolna Mitropolia, Bulgaria</i>
ID30	IceColor: A software tool for color evaluation with application in food development Magdalena Kutryanska ¹ , Atanaska Bosakova-Ardenska ¹ , Petya Boyanova ¹ and Peter Panayotov ¹ ¹ <i>University of Food Technologies, Plovdiv, Bulgaria</i>
ID32	Performance testing of virtualization systems on the assembly of different guest prefabricated systems Anatoliy Sergeev ¹ , Evgenia Rezedinova ¹ , and Anna Khakhina ¹ ¹ <i>Peter the Great St.Petersburg Polytechnic University, St.Petersburg, Russia</i>
ID37	A method for calculating the difference between two iris codes Gergana Spasova ¹ , and Iliyan Boychev ¹ ¹ <i>Technical University of Varna, Varna, Bulgaria</i>
ID41	Some issues on information management system for construction raw materials Sami Duraku ¹ and Shpend Lutfiu ¹ ¹ <i>St. Cyril and St. Methodius University of Veliko Tarnovo, Veliko Tarnovo, Bulgaria</i>
ID43	Intensification of research work using images processing by application of parallel filtering on multi-core architectures Atanaska Bosakova-Ardenska ¹ , and Hristina Andreeva ¹ ¹ <i>University of Food Technologies, Plovdiv, Bulgaria</i>

Thursday, June 22, 2023

Session:	Engineering Education and Engineering Management 2	Time:	11:15 - 12:45
Chair:	Athanasia THOMOGLU, Greece		
Hall:	Online	Virtual room:	VR_Hall 2

№	Paper
ID91	Artificial vision for manipulators: a review Perizat Rakhmetova ¹ , Beibit Shingissov ² , Abish Torgaev ² , Saltanat Yussupova ³ , Yerbol Kaliyev ² ¹ Satbayev University, Almaty, Kazakhstan ² Academy Logistics and Transport, Almaty, Kazakhstan ³ Almaty University of Power Engineering and Telecommunications, Almaty, Kazakhstan
ID22	A data model for semi-structured data Alexander Schukin ¹ , Nikolai Scerbakov ² , and Eugenia Rezedinova ¹ ¹ Peter the Great St. Petersburg Polytechnic University, St. Petersburg, Russia ² Graz University of Technology, Graz, Austria
ID48	Internet of things in education Atanas Kostadinov ¹ , and Krassimir Kolev ² ¹ Technical University of Sofia, Plovdiv branch, Plovdiv, Bulgaria ² University of Food Technologies, Plovdiv, Bulgaria
ID101	A model for the integration of automotive quality management system requirements Tzvetelin Gueorguiev ¹ ¹ University of Ruse "Angel Kanchev", Ruse, Bulgaria
ID145	A model of a cyber-physical installation for smart greenhouse agriculture Miglena Temelkova ¹ and Nikola Bakalov ¹ ¹ University of Telecommunications and Post, Sofia, Bulgaria
ID118	Ergonomical design and material sustainability in fashion manufacturing: A framework for analysis and evaluation Aakanksha ¹ and Kapoor Vibha ² ¹ Sharda University, India ² Bansthali Vidhyapith, Rajasthan, India

Thursday, June 22, 2023

Session:	Telecommunication Systems 1	Time:	13:00 - 14:30
Chair:	Strahil SOKOLOV, Bulgaria		
Hall:	Online	Virtual room:	VR_Hall 1

№	Paper
ID38	An educational tool for Z-wave network simulations and finding optimal routes Diyan Dinev ¹ , Aydan Haka ¹ , Veneta Aleksieva ¹ , Hristo Valchanov ¹ , and Biliyana Ilieva ¹ ¹ <i>Technical University of Varna, Varna, Bulgaria</i>
ID149	Monitoring and evaluation of radio frequency coverage in terrestrial digital video broadcasting systems Krasen Angelov ² , Panagiotis Kogias ² , Stanimir Sadinov ¹ , Michail Malamatoudis ² , ¹ <i>Technical University of Gabrovo, Gabrovo, Bulgaria</i> ² <i>International Hellenic University, Kavala, Greece</i>
ID144	Measurements of the non-ionizing radiation of 5G base station of mobile operator Makedonski Telekom AD Skopje and electricity supply with photovoltaic plant Arsov Boris ¹ , Arsova Elizabeta ¹ , and Stanimir Sadinov ² ¹ <i>International Slavic University Sv Nikole, Sv Nikole, N. Macedonia</i> ² <i>Technical University, Gabrovo, Bulgaria</i>
ID69	Role and policy based authorization microservice module for web application systems: DockMan© Egnar Ozdikililer ¹ ¹ <i>Istanbul Technical University, Istanbul, Turkey</i>
ID54	Increasing the efficiency of the information management system for controlling the spatial orientation of objects in geophysical research Tykhon Sytnikov ¹ , Anatoliy Bilenko ¹ , Valerii Sytnikov ¹ , Oleh Streltsov ¹ , Pavlo Stupen ¹ ¹ <i>Odessa Polytechnic National University, Odessa, Ukraine</i>
ID135	Overview of resource scheduling techniques in distributed systems Strahil Sokolov ¹ , Pavel Bliznakov ¹ ¹ <i>University of Telecommunications and Post, Sofia, Bulgaria)</i>
ID136	Technique for enhancing fraud detection in banking with facial biometric feature storage Strahil Sokolov ¹ , Liliya Mileva ² ¹ <i>University of Telecommunications and Post, Sofia, Bulgaria</i> ² <i>Bulgarian American Credit Bank, Sofia, Bulgaria</i>

Friday, June 23, 2023

Session:	Applied and Engineering Physics 2	Time:	09:30 - 11:15
Chair:	Jacob FANTIDIS, Greece		
Hall:	International Hellenic University, Kavala Campus Hall Pantelis Antoniadis	In person	

№	Paper
ID15	<p>A simple, yet efficient computational model for electromagnetic propagation among sensors in corn fields Alexandros Hatzitolios¹, Hristos T. Anastassiou¹ ¹ <i>International Hellenic University, Serres, Greece</i></p>
ID18	<p>Investigation of sinusoidally arranged boreholes as metamaterials on reduction of seismic waves Selcuk Kacin¹, Murat Ozturk¹, Umur Korkut Sevim¹, Muharrem Karaaslan¹, Oguzhan Akgol¹, Zafer Ozer², Mustafa Demirci¹, Emin Unal¹, Bayram Ali Mert¹, Maide Erdoğan Alkurt¹, Fatih Özkan Alkurt¹, Mustafa Tunahan Başar¹, Seyda Gülsüm Kaya¹ ¹ <i>Iskenderun Technical University, Hatay, Turkey</i> ² <i>Mersin University, Mersin, Turkey</i></p>
ID16	<p>Reduction of earthquake amplification by seismic metamaterials made of circular positioned concrete piles Selcuk Kacin¹, Murat Ozturk¹, Umur Korkut Sevim¹, Muharrem Karaaslan¹, Oguzhan Akgol, Zafer Ozer², Mustafa Demirci¹, Emin Unal¹, Bayram Ali Mert¹, Maide Erdoğan Alkurt¹, Fatih Özkan Alkurt¹, Mustafa Tunahan Başar¹, Seyda Gülsüm Kaya¹ ¹ <i>Iskenderun Technical University, Hatay, Turkey</i> ² <i>Mersin University, Mersin, Turkey</i></p>
ID103	<p>Student Laboratory Measurements Based on VEML7700 Light Sensor Marian Janek¹ ¹ <i>Zilina University, Zilina, Slovakia</i></p>
ID73	<p>Comparison of shielding material for neutron and γ via Be(p,n) reaction in beryllium target Fantidis G. Jacob¹, George Nikolaou², and Biziota Eleni¹ ¹ <i>International Hellenic University, Kavala, Greece</i> ² <i>Democritus University of Thrace, Xanthi, Greece</i></p>
ID113	<p>Mechanical characterization of Nano-reinforced Mortar: X-Ray Micro-CT for 3D imaging of microstructure Athanasia K. Thomoglou^{1,2}, Jacob G. Fantidis¹, Maristella E. Voutetaki², Zoi S. Metaxa¹ and Constantin E. Chalioris² ¹ <i>International Hellenic University, Kavala, Greece</i> ² <i>Democritus University of Thrace, Xanthi, Greece</i></p>
ID115	<p>Experiential learning in architectural engineering school through the hands-on workshop: practically without calculations Maristella E. Voutetaki¹, Athanasia K. Thomoglou¹. ¹ <i>Democritus University of Thrace, Xanthi, Greece</i></p>

Friday, June 23, 2023

Session:	Telecommunication System 2	Time:	09:30 - 11:15
Chair:	Grigor MIHAYLOV, Bulgaria		
Hall:	International Hellenic University, Kavala Campus Hall TIE	In person	

№	Paper
ID71	<p>Cognitive radio network technology for IoT-enabled devices Omer Mohammed Khodayer Al-Dulaimi¹, Mohammed Khodayer Hassan Al-Dulaimi², Aymen Mohammed Khodayer Al-Dulaimi², and Maiduc Osiceanu Alexandr¹ ¹ <i>University POLITEHNICA of Bucharest, Bucharest, Romania</i> ² <i>Al-Rafidain University College, Baghdad, Iraq</i></p>
ID126	<p>Fiber optic data transmission system for temperature measurements Valentin Mateev¹ and Iliana Marinova¹ ¹ <i>Technical University of Sofia, Sofia, Bulgaria</i></p>
ID141	<p>Evaluating the lifetime of energy-harvesting wireless sensor networks with ALOHA Sami Acik¹, Selahattin Kosunalp² and Mehmet Baris Tabakcioglu³ ¹ <i>University of Gaziantep Islam Science and Technology, Gaziantep, Türkiye</i> ² <i>University of Bandirma Onyedi Eylul, Bandirma/Balıkesir, Türkiye</i> ³ <i>University of Bursa Technical, Bursa, Türkiye</i></p>
ID142	<p>Experimental study and methods of a model for transmission of digital television signal according to DVB-S/S2 standard Panagiotis Kogias¹, Michail Malamatoudis¹, Stanimir Sadinov², Krasen Angelov² ¹ <i>International Hellenic University, Kavala, Greece</i> ² <i>Technical University of Gabrovo, Gabrovo, Bulgaria</i></p>
ID111	<p>Voice profile identification using FFT, multilayer PNN and FFNN approach Ivelina Balabanova¹, Kristina Sidorova¹, and Georgi Georgiev¹ ¹ <i>Technical University of Gabrovo, Gabrovo, Bulgaria</i></p>
ID112	<p>Amplitude noise level prediction in signals with noises by statistics extraction and CFNN techniques Ivelina Balabanova¹, Teodora Zhorova¹, and Georgi Georgiev¹ ¹ <i>Technical University of Gabrovo, Gabrovo, Bulgaria</i></p>
ID77	<p>Evaluation of signal level distribution in 5G radio relay transmissions Teodor Iliev¹, Ivaylo Stoyanov¹, Grigor Mihaylov², Alina Fazylova³, and Maria S. Papadopoulou⁴ ¹ <i>University of Ruse "Angel Kanchev", Ruse, Bulgaria</i> ² <i>University of Telecommunications and Post, Sofia, Bulgaria</i> ³ <i>Almaty University of Power Engineering and Telecommunications named after Gumarbek Daukeyev, Almaty, Kazakhstan</i> ⁴ <i>International Hellenic University, Sindos, Greece</i></p>

Friday, June 23, 2023

Session:	Renewable Energy and Green Technologies 1	Time:	11:30 - 13:00
Chair:	Dimitrios Th. KAZOLIS, Greece		
Hall:	International Hellenic University, Kavala Campus Hall TIE	In person	

No	Paper
ID29	<p>Evaluation of waste in seismic metamaterial applications Volkan Akdoğan¹, Selcuk Kacin¹, Umur Korkut Sevim¹, Muharrem Karaaslan¹, Mustafa Tunahan Başar^{1,2} ¹ <i>Iskenderun Technical University, Hatay, Turkey</i> ² <i>Amasya University, Vocational School of Tasova Yüksel Akin, Amasya, Turkey</i></p>
ID68	<p>Extensive use of net-metering in Crete's region public buildings Marini Markaki¹, Emmanuel Karapidakis¹, Yiannis Katsigiannis¹, Maria Apostolaki², Giannis Kornilakis¹, and Panagiotis Floyris¹ ¹ <i>Hellenic Mediterranean University, Heraklion, Greece</i> ² <i>Region of Crete, Environment & Spatial Planning Directorate, Crete, Greece</i></p>
ID70	<p>Deep learning-based dynamic state estimation for frequency stability monitoring in power systems with high penetration of renewable generation Said Čosić¹, and István Vokony¹ ¹ <i>Budapest University of Technology and Economics, Budapest, Hungary</i></p>
ID137	<p>Ultra-high share of RES in interconnected island system Emmanuel Karapidakis¹, Ioannis Mozakis¹, and Ioannis Iliadis¹ ¹ <i>Hellenic Mediterranean University, Heraklion, Greece</i></p>
ID17	<p>Effects of boron utilization in square array layered seismic metamaterials Selcuk Kacin¹, Murat Ozturk¹, Umur Korkut Sevim¹, Muharrem Karaaslan¹, Oguzhan Akgol¹, Zafer Ozer², Mustafa Demirci¹, Emin Unal¹, Bayram Ali Mert¹, Maide Erdoğan Alkurt¹, Fatih Özkan Alkurt¹, Mustafa Tunahan Başar¹, Seyda Gülsüm Kaya¹ ¹ <i>Iskenderun Technical University, Hatay, Turkey</i> ² <i>Mersin University, Mersin, Turkey</i></p>
ID146	<p>Energy cluster analysis based on consumption data in different weather condition Dimitrios Th. Kazolis¹, Panagiotis G.Kogias¹, Nikolaos I. Roumeliotis² ¹ <i>International Hellenic University, Kavala, Greece</i> ³ <i>HEDNO, Public's Electricity Company, Kavala, Greece</i></p>

Friday, June 23, 2023

Session:	Mechatronics and Industrial Automation 3	Time:	09:30 - 11:00
Chair:	Seher KADIROVA, Bulgaria		
Hall:	Online	Virtual room:	VR_Hall 1

№	Paper
ID40	Development of a hardware RTC timer based on TTL logic Iliyan Boychev¹ and Gergana Spasova ¹ <i>¹ Technical University of Varna, Varna, Bulgaria</i>
ID45	Optimize energy consumption with soft-switching resonant LC-converter for battery charging applications Vasil Mihov¹ , Angel Lichev ¹ , Yassen Madankov ¹ <i>¹ University of Food Technologies, Plovdiv, Bulgaria</i>
ID132	A Method for Derating Power of a MW Direct-Drive Wind Turbine Permanent Magnet Generator as Over Allowable Working Temperature Hung Xuan Vu¹ <i>¹ Hanoi University of Science and Technology, Hanoi, Vietnam</i>
ID56	Calculating of induced voltages in railway lines via finite elements analysis of electromagnetic fields Peter Uzunov¹ , Krasimir Ivanov¹ , Nikolai Iliev ¹ <i>¹ Technical University of Gabrovo, Gabrovo, Bulgaria</i>
ID93	Effects of exhaust gas recirculation (EGR) rates on emission characteristics of ethanol and methanol diesel blended fuels Simeon P Iliev¹ <i>¹ University of Ruse "Angel Kanchev", Bulgaria</i>
ID147	Development of a prototype for remote locking system Seher Kadirova¹ , Atila Pandzar ¹ and Martin Nedelchev ¹ <i>¹ University of Ruse "Angel Kanchev", Ruse, Bulgaria</i>

Friday, June 23, 2023

Session:	Electronics, Power Electronics and EMC	Time:	09:30 - 11:15
Chair:	Konstantinos KARAKOULIDIS, Greece		
Hall:	Online	Virtual room:	VR_Hall 2

№	Paper
ID33	Development of a system for automatic feeding and orientation of cylindrical parts Penko Mitev ¹ , and Ivo Malakov ¹ ¹ <i>Technical University of Sofia, Sofia, Bulgaria</i>
ID44	Synthesizing and study a fuzzy control system for the longitudinal motion of an unmanned aerial vehicle Radostina Calovska ¹ , Angel Genchev ² , and Stefan Biliderov ¹ ¹ <i>BAFA 'Georgi Benkovski', Dolna Mitropolia, Bulgaria</i> ² <i>BDI 'Professor Tsvetan Lazarov', Sofia, Bulgaria</i>
ID47	Study of problems in application and design of SCARA robots in the semiconductor industry Vanesa Chavushyan ¹ , Stiliyan Nikolov ¹ , Vania Georgieva ¹ ¹ <i>Technical University of Sofia, Sofia, Bulgaria</i>
ID55	Analysis of the quality of polymer parts for automatic assembly Valko Mitev ¹ , and Ivo Malakov ¹ ¹ <i>Technical University of Sofia, Sofia, Bulgaria</i>
ID58	Combination of an ERP system with other technological approaches to increase sustainability in discrete manufacturing Dominika Lothary ¹ , Pancho Tomov ¹ , and Lubomir Dimitrov ¹ ¹ <i>Technical University of Sofia, Sofia, Bulgaria</i>
ID13	Construction of a profile trajectory of an involute spur gear. Macros and developing Aleksandrina Bankova ¹ , Stefan Tenev ¹ , Ismail Mehmedov ¹ , Zoya Tsoneva ¹ , Trifon Uzuntonev ² , and Sergey Belchev ² ¹ <i>Technical University of Varna, Varna, Bulgaria</i>
ID131	Algorithm of class F RF amplifying stage design Miroslav Tomov ¹ , Panagiotis Kogias ² , Michail Malamatoudis ² , and Stanimir Sadinov ¹ ¹ <i>Technical University, Gabrovo, Bulgaria</i> ² <i>International Hellenic University, Kavala, Greece</i>

Friday, June 23, 2023

Session:	Information Technologies and Artificial Intelligence 3	Time:	11:15 - 13:00
Chair:	Michael MALAMATOUDIS, Greece		
Hall:	Online	Virtual room:	VR_Hall 1

№	Paper
ID50	Analyzing attacks on ICS/SCADA wind farm physical testbed with ML Evgeni Sabev ¹ and Roumen Trifonov ² <i>¹ Technical University of Sofia, Sofia, Bulgaria</i>
ID51	Data exploration of neural network for predicting the effect of phosphorus on the yield of spring wheat Saltanat Sharipova ¹ , Akerke Akanova ¹ , Nazira Ospanova ² <i>¹ Kazakh agrotechnical research university, Astana, Kazakhstan</i> <i>² Toraighyrov University, Pavlodar, Kazakhstan</i>
ID53	Using a monocular camera for 360° dynamic object instance segmentation in traffic Goran Oreskia ¹ and Lucija Babic ¹ <i>¹ Juraj Dobrila University of Pula, Pula, Croatia</i>
ID85	Aspects of artificial intelligent applications in cyber security to decrease threats and restrict cyber attacks for smart grids Mohammed Khodayer Hassan Al-Dulaimi ¹ , Aymen Mohammed Khodayer Al-Dulaimi ¹ , Omer Mohammed Khodayer Al-Dulaimi ² and Maiduc Osiceanu Alexandra ² <i>¹ Al-Rafidain University College, Baghdad, Iraq</i> <i>² University POLITEHNICA of Bucharest, Bucharest, Romania</i>
ID95	Design and implementation of the system for dynamic generation of accessible web content Hristo Hristov ¹ , Milen Bliznakov ¹ , Elena Somova ¹ and Vladimir Valkanov ¹ <i>¹ University of Plovdiv "Paisii Hilendarski", Plovdiv, Bulgaria</i>
ID92	Training data for parking guidance system Neyko Neykov ¹ and Svetlana Stefanova ¹ <i>¹ University of Ruse "Angel Kanchev", Ruse, Bulgaria</i>
ID74	Service-to-SLA lifecycle model with blockchain management Ivaylo Chenchev ¹ <i>¹ University of Telecommunications and Post, Sofia, Bulgaria</i>

Friday, June 23, 2023

Session:	Renewable Energy and Green Technologies 2	Time:	11:15 - 13:00
Chair:	Ventsislav KESEEV, Bulgaria		
Hall:	Online	Virtual room:	VR_Hall 2

№	Paper
ID100	<p>Assessments regarding the performances of wind turbines from the roofs of buildings Sanda Budea¹ ¹ <i>University Politehnica of Bucharest, Romania</i></p>
ID124	<p>Energy efficiency index of industry in the conditions of energy transition in Bulgaria Dimitrina Koeva¹ ¹ <i>Technical University of Gabrovo, Gabrovo, Bulgaria</i></p>
ID139	<p>Optimization of the blade profile of a vertical axis wind turbine based on aerodynamic analysis Alina Fazylova^{1,2}, Michail Malamatoudis³, and Panagiotis Kogias³ ¹ <i>Satbayev University, Almaty, Kazakhstan</i> ² <i>Almaty University of Power Engineering and Telecommunications named after G.Daukeev, Almaty, Kazakhstan</i> ³ <i>International Hellenic University, Kavala, Greece</i></p>
ID82	<p>Design and calculation of an environmentally friendly carbon-free hybrid plant based on a microgas turbine and a solid oxide fuel cell Ivan Beloev¹, Antonina Filimonova², Andrey Chichirov², Artem Vinogradov², Iliya Iliev¹, Egor Mayorov² ¹ <i>University of Ruse "Angel Kanchev", Ruse, Bulgaria</i> ² <i>Kazan State Power Engineering University, Kazan, Russia</i></p>
ID59	<p>Detailed infrared diagnostics of photovoltaic panels for higher safety and optimal energy generation Ventsislav Keseev¹ ¹ <i>University of Ruse "Angel Kanchev", Ruse, Bulgaria</i></p>
ID60	<p>Measuring half-wave voltage of crystal in sinusoidal electric field S. S. Arsentev^{1,2}, E. A. Smirnova^{1,2}, A. A. Khyshov¹, M. A. Novikov¹ ¹ <i>Institute of Applied Physics of the Russian Academy of Sciences, Nizhny Novgorod, Russia</i> ² <i>Lobachevsky State University of Nizhny Novgorod, Nizhny Novgorod, Russia</i></p>
ID110	<p>Investigation on structural analysis in marine structures using finite element method Z.Salleh¹, M.A.A.Zullastri¹, M.H.Zohari², A.A.Malik¹ and J.M.Jani³ ¹ <i>Universiti Kuala Lumpur, Malaysian Institute of Marine Engineering Technology, Perak, Malaysia</i> ² <i>Universiti Malaysia Pahang, 26600 Pekan, Pahang, Malaysia</i> ³ <i>Universiti Kuala Lumpur, Malaysia Italy Design Institute, Kuala Lumpur, Malaysia</i></p>



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