



17-18th November, Niš, Serbia

FINAL PROGRAM

SESSIONS OVERVIEW

Thursday, November 17, 2022		
<i>Time</i>	<i>Activities</i>	<i>Place</i>
10:30 – 11:00	Registration	Lobby D
11:00 – 11:30	Opening Ceremony	Room 1
11:30 – 12:15	Welcome Cocktail	Faculty Restaurant
12:15 – 13:15	Plenary Session	Room 1
13:15 – 13:30	Break	
13:30 – 15:00	Session A: Information and Communication Technologies	Room 1
13:30 – 15:00	Session B: Measurements & Instrumentation, Applied Mathematics	Room 2
15:00 – 16:30	Session C: Manufacturing and Information Technologies	Room 1
15:00 – 16:30	Session D: Mechatronics and Robotics	Room 2
19:00	Conference Dinner	

Friday, November 18, 2022		
<i>Time</i>	<i>Activities</i>	<i>Place</i>
10:00 – 11:30	Session E: Artificial Intelligence and Machine Learning	Room 1
11:30 – 13:00	Session F: Renewable and Non-Conventional Energy Sources	Room 1
13:00 – 15:00	Project Session : ERASMUS + and H2020 projects presentation	Room 1
15:00	Conference Closing	

All sessions will be held at the **Faculty of Electronic Engineering in Niš**, street Aleksandra Medvedeva 14, 18000 Niš (<https://goo.gl/maps/NhdxL8KzsaxeScQt7>)

Lobby D – Lobby is located in front of the Dean's office

Room 1 – Congress hall is located on the left side before Dean's office

Faculty Restaurant – next to the Room 1

Room 2 – floor M1, between Faculty library and Room 1

CONTENT

Thursday 17th November 2022

<u>Plenary Session</u> <u>Thursday, 17th November, 12:15 – 13:15 (local time)</u>		
Plenary Session	P1 • Invited paper	
S.-D. Stan, A. Plesa, and E. Teutan Kinematics Simulation and Analysis in MATLAB/Simscape for a Class of 2-DOF Parallel Robots		
Plenary Session	P2 • Invited paper	
S. Šprager and K. Benkič Metrel Cloud – R&D Challenges Towards the Most Convenient Way to Achieve Efficient Connectivity		
Plenary Session	P3 • Invited paper	
M. Banić, M. Simonović, L. Stojanović, D. Rangelov, A. Miltenović, and M. Perić Digital Twin-Based Unmanned Outdoor Field Robots Lightweighting		

<u>Session A – Information and Communication Technologies</u> <u>Thursday, 17th November, 13:30 – 15:00 (local time)</u> Chairperson: Dragan Stojanović		
Session A	A1 • Regular paper	
A. Stojnev Ilić, D. Stojanović, N. Stojanović, and M. Ilić A Big Data System Architecture for Adaptive Streaming Data Analytics		
Session A	A2 • Regular paper	
K. Benkič, B. Cigale, and S. Šprager Could Over-Protecting a Web Service be Counter-Effective?		
Session A	A3 • Regular paper	
A. Panajotović, J. Anastasov, A. Cvetković, D. Milić, D. Milović, and A. Lazarević Outage Performance Analysis of a Two-User Uplink NOMA Scenario Over Fisher-Snedecor F Fading Channels		
Session A	A4 • Regular paper	
I. Kocić, D. Mitić, N. Danković, S. Nikolić, N. Jotović, and P. Đekić KEPServerEX as a Data Collection Tool for Process Identification		

Session A	A5 • Regular paper	
B. Cigale Microcontroller Shortage: Lessons Learned in the Firmware Porting in the Company Metrel d.d.		
Session A	A6 • Regular paper	
N. Petrović Semantic Approach to Code Quality Improvement in DevOps		

<u>Session B – Measurements & Instrumentation, Applied Mathematics</u> <u>Thursday, 17th November, 13:30 – 15:00 (local time)</u> <i>Chairperson: Saša S. Nikolić</i>		
Session B	B1 • Regular paper	
S. Đorđević and M. Simić Non-Intrusive Appliance Load Monitoring Using Current Harmonic Phasor		
Session B	B2 • Regular paper	
M. Pejović Characterization of Commercial Gas-Filled Surge Arresters Using Systems for Automatic Measurement and Acquisition of Data		
Session B	B3 • Regular paper	
A. Đorđević, M. Milovanović, M. Milojković, and M. Spasić Intelligent Classification of Environmental Conditions Influencing the Work of Laboratory Equipment		
Session B	B4 • Regular paper	
J. Nedeljković, G. Nikolić, and M. Stojčev Average Based Data Compression Technique for Saving Values in Data Logger		
Session B	B5 • Regular paper	
P. Rajković, S. Marinković, and M. Stanković Usage of Q-Orthogonal Polynomials in Numerical Computing of the Inverse Z-Transform		
Session B	B6 • Regular paper	
N. Danković, Z. Perić, D. Antić, A. Jocić, S. S. Nikolić, and I. Kocić Stability Study of the Second Order Recursive Filter in DPCM System		

**Session C – Manufacturing and Information Technologies****Thursday, 17th November, 15:00 – 16:30 (local time)*****Chairperson: Ivan Ćirić***

Session C	C1 • Regular paper	
Joanna Alexieva , Pancho Tomov, and Lubomir Dimitrov Influence of ISO 27001 on the Execution of the Strategic Goals		
Session C	C2 • Regular paper	
A. Kitić and M. Radišić Trends in the Financing of Innovative SMEs in Serbia From Grants		
Session C	C3 • Regular paper	
D. Ćirić, M. Ivanović, G. Jović, F. Pešić, and M. Mijajlović Application of the Quality Function Deployment Method in the Mechanical Structure Design of the Two-Roll Rubber Mill Frame		
Session C	C4 • Regular paper	
D. Stojiljković, I. Ćirić, N. T. Pavlović, N. Ivačko, and D. Jevtić Influence of FDM Parameters on Flexure Hinges Properties		
Session C	C5 • Regular paper	
S. Stamenković, S. Randelović, and N. Kostić FEM Analysis Stress Strain state at Deep Drawing		
Session C	C6 • Regular paper	
V. Miltenović, Z. Nikolić, M. Milojković, S. Perić, M. Milovanović, and M. Spasić Role and Importance of Digital Technologies in the Development of Smart Products		

Session D – Mechatronics and Robotics**Thursday, 17th November, 15:00 – 16:30 (local time)*****Chairperson: Emina Petrović***

Session D	D1 • Regular paper	
E.-G. Tulcan, C. Sticlaru, and E.-C. Lovasz Design of a Novel Medical Disinfection Robot with Folding Mechanism		
Session D	D2 • Regular paper	
M. Tomić, M. Banić, M. Simonović, and M. Milošević Navigation of the Skid Steering Physically Connected off-Road Robotized Vehicles		
Session D	D3 • Regular paper	
A. Tomović, J. Jovanović, M. Damjanović, and R. Tomović The Enclosure of Research on the Impact of Reduction of Unbalance on the Intensity of Vibrations of a Rigid Rotor Supported on Radial Active Magnetic Bearings		

Session D	D4 • Regular paper	
A. Leshchev-Romanenko and S. Saidov Motion Planning of a Wheeled Robot in a Flat Dynamic Uncertain Environment Using Hybrid Motion Planning Algorithm Based on A* and Artificial Potential Field Method		
Session D	D5 • Regular paper	
J. Erić Obućina, S. Stankovski, G. Ostojić, and S. Aleksandrov Modeling And Simulation of The Hydraulic System with Installing a Frequency Converter		
Session D	D6 • Regular paper	
M. Novaković, V. Reljić, M. Šešlija, V. Mladenović, and Z. Jovanović Reuse of Exhausted Air in Closed Pneumatic Circuit		

Friday, 18th of November

Session E – Artificial Intelligence and Machine Learning Friday, 18th November, 10:00 – 11:30 (local time) Chairperson: Dejan Milić		
Session E	E1 • Regular paper	
M. Kostić, S. Đošić, M. Jovanović, and I. Stojanović Performance Analysis of Machine Learning Algorithms for Indoor Localization		
Session E	E2 • Regular paper	
N. Petrović Machine Learning within Information Systems Course using Weka in Java: Monkeypox Case Studies		
Session E	E3 • Regular paper	
I. Ćirić, N. Ivačko, Ž. Čojbašić, M. Pavlović, D. Mitić, S. Lalić, and D. Jevtić Comparison of Simple Object Recognition Algorithms for Robot Vision		
Session E	E4 • Regular paper	
E. Petrovic, M. Simonović, V. Nikolić, D. Dimitrijević Jovanović, N. Tomić, and J. Bijeljić Instance Segmentation Using Mask-R-CNN Architecture for Vision Based Inspection of Tire Tread Depth		
Session E	E5 • Regular paper	
S. Stojanović, D. Antić, M. Milojković, D. Mitić, S. Perić, and S. S. Nikolić Finite-Time Boundedness of Discrete-Time Neural Networks with Norm-Bounded Disturbances and Time-Varying Delays		
Session E	E6 • Regular paper	
N. Vukić, S. Perić, D. Antić, D. Mitić, and S. Stojanović Application of Convolutional Neural Networks for Traffic Sign Recognition for Autonomous Driving System Perception		

Session E	E7 • Regular paper	
D. Milić, N. Petrović, S. Suljović, R. Stefanović, and V. Vujović Quantum Machine Learning Approach to QoS Prediction Leveraging Capacity of 5G Wireless System with L-branch SC Combining in Nakagami-m Fading and Nakagami-m Interference Channel		

<u>Session F – Renewable and Non-Conventional Energy Sources</u> <u>Friday, 18th November, 11:30 – 13:00 (local time)</u> <i>Chairperson: Jasmina Bogdanović Jovanović</i>		
Session F	F1 • Regular paper	
P. Živković, M. Tomić, and B. Radovanović Study of Rayleigh-Bénard Convection in a Rectangular Water Tank		
Session F	F2 • Regular paper	
N. Marković, M. Milošević, and Ž. Čojbašić Intelligent Control of Heating Tunnel for Improved Performance and Energy Efficiency		
Session F	F3 • Regular paper	
M. Jovanović, S. Milanović, and Ž. Spasić Temperature Spatial Modulation in a Slot Fluid Flow		
Session F	F4 • Regular paper	
J. Bogdanović Jovanović, S. Milanović, Ž. Stamenković, M. Jovanović, J. Petrović, and M. Kocić Numerical Approach to the Calculation of Sprinkler Irrigation Systems		
Session F	F5 • Regular paper	
M. Nikodijević Đorđević, Ž. Stamenković, J. Petrović, J. Bogdanović Jovanović, and M. Kocić Control of Nanofluid Flow and Heat Transfer in the Horizontal Channel with Porous Medium by Electric and Moving Magnetic Field		
Session F	F6 • Regular paper	
J. Petrović, Ž. Stamenković, M. Kocić, J. Bogdanović Jovanović, M. Nikodijević Đorđević, and M. Jovanović Control of Nanofluid Flow and Heat Transfer in the Vertical Channel with Porous Medium by Electric and Moving Magnetic Field		

<u>Project session</u> <u>Friday, 18th November, 13:00 – 15:00 (local time)</u> <i>Chairperson: Miloš Simonović</i>	
1.	EU Water Policy and Innovative Solutions in Water Resources Management (INNOWAT), Erasmus+ Jean Monnet Module, 620003-EPP-1-2020-1-RS-EPPJMO-MODULE
2.	Transforming Advanced Water Skilling Through the Creation of a Network of Extended-Reality Water Emulative Centres (WATERLINE), HORIZON, 101071306-HORIZON-WIDERA-2021-ACCESS-05
3.	Smart Products and Services Engineering (SPaSE), Erasmus+ Jean Monnet Module, 101047566-JMO-2021-HEI-TCH-RSCH
4.	The Future is in Applied Artificial Intelligence (FAAI), Erasmus+, 2022-1-PL01-KA220-HED-000088359
5.	Instantaneous Infrastructure Monitoring by Earth Observation (IIMEO), HORIZON, HORIZON-CL4-2022-SPACE-01-13: End-to-end earth observation systems and associated services
6.	Advanced Integrated Obstacle and Track Intrusion Detection System for Smart Automation of Rail Transport (SMART2), HORIZON, 881784
7.	Izrada Mape Puta Energetske Tranzicije Grada Niša do 2050, Tomorrow project H2020
8.	Universal Robotic Platform for Precise Agriculture (AGAR), Innovation Fund of Republic of Serbia and COMING – Computer Engineering d.o.o., 50471
9.	Autonomous Trains Undercarriage Visual Inspection System (ATUVIS), Innovation Fund of Republic of Serbia and CAM Engineering, IF 50348
10.	Boosting the Scientific Excellence and Innovation Capacity of 3D Printing Methods in Pandemic Period (BRIGHT), Erasmus+, 2020-1-RO01-KA226-HE-095517
11.	Collaborative e-platform for Innovation and Educational Enhancement in Medical Engineering (Callme), Erasmus+, 2022-1-RO01-KA220-HED-000087703
12.	Boosting Digital Innovation and Transformation Capacity of HEIs in an Entrepreneurial Ecosystem (DIN-ECO), EIT HEI Initiative