



E-HEALTH AND BIOENGINEERING CONFERENCE - EHB 2023, 11-th edition, Bucharest, Romania, 9-10 November, 2023

PROGRAM OF PAPERS PRESENTATION

| | REGULAR SESSIONS |
|--------|---|
| AT | Assistive technologies for people with disabilities |
| BB | Biomaterials and Biotechnologies |
| BM | Biomechanics |
| SP | Biomedical Signal Processing |
| DSS-AI | Decision support systems, Artificial Intelligence, Bioinformatics, Learning |
| EPH | Environmental Protection and Health |
| MD | Medical devices, Instrumentation, Robotics |
| MIIP | Medical imaging and Image processing |
| MI | Medicine and Informatics |
| TM | Telemedicine, e/m/p-Health, Wearable systems II |

| | SPECIAL SESSIONS/WORKSHOPS |
|------------|---|
| SS1 | Health Technology Assessment and Economic Issues in Medical Devices <i>Vladimir ROGALEWICZ & Vojtech KAMENSKY</i> |
| SS2 | Big Data and Models for Better Health <i>Ales TICHOPAD & Gleb DONIN</i> |
| SS3 | Determining the Value of Emotional and Behavioural Characteristics by Processing the Biosignals of the HB <i>Titi PARASCHIV & Felix ADOCHIEI</i> |
| SS4 | Design of Devices and Methods for Biomedical Practice <i>Martin ROZANEK & Petr KUDRNA</i> |
| SS5 | Harnessing IoT Innovations for the Future of Healthcare <i>G. SERIȚAN & F. ADOCHIEI & B. ENACHE</i> |
| SS6/ WS | Human-Machine Interfaces based on Gaze Detection <i>Radu BOZOMITU & Gabriel BONTEANU</i> |
| SS7 | Medicine and Informatics (MI regular session) |

Sessions are presented here in alphabetical order.

The implicit presentation manner is **ONLINE** and **ORAL**.

| Nr | ID | SESSION | AUTHORS | TITLE | Presentation online/onsite poster |
|---|-----|---------|---|--|-----------------------------------|
| Biomaterials and Biotechnologies, BB (I); Moderators: Liliana Vereștiuc, Maria Butnaru FRIDAY, 10 November, 8:00-10:00, Room 302 | | | | | |
| 1 | 23 | BB I | Raul Mihai Petrascu, Sever Gabriel Racz and Dan Mihai Rusu | Collection of Key Bioresponsive Materials | ONSITE |
| 2 | 66 | BB I | Ramona Cimpoesu, Bogdan Istrate, Corneliu Munteanu and Nicanor Cimpoesu | Corrosion evaluation of MgCaZn biodegradable alloys | ONLINE POSTER |
| 3 | 82 | BB I | Tiago M. Cardoso, Juan Carlos Gómez Blanco, Francisca R. Barbosa, Sonia P. Miguel, David Patrocinio Caballero, Maximiano P. Ribeiro, Paula Coutinho, Francisco Miguel Sánchez Margallo and José Blas Pagador Carrasco | Optimizing bioprinting setting for vascular applications: a post-printing analysis | ONLINE |
| 4 | 83 | BB I | Tiago M. Cardoso, David Patrocinio Caballero, Francisca R. Barbosa, Sonia P. Miguel, Juan Carlos Gómez Blanco, Paula Coutinho, Maximiano P. Ribeiro, Francisco Miguel Sánchez Margallo and José Blas Pagador Carrasco | Degradation analysis of printed vascular grafts under refrigerated storage conditions | ONLINE |
| 5 | 144 | BB I | Delia Turcov, Maria Butnaru, Anca Zbranca-Toporas and Daniela Suteu | Biocompatibility Investigation and Preliminary Tolerability Observational Study of the Dermatocosmetic Emulsions Based on Saffron (<i>Croccus sativus</i>) and Lady's Bedstraw (<i>Galium verum</i>) extract | ONLINE |
| 6 | 152 | BB I | Martin Otáhal, Katarína Mendová, Martin Vančura and Matěj Daniel | AFM cell indentation: fluid shell model | ONLINE |
| 7 | 153 | BB I | Leontýna Varvařovská, Petr Kudrna and Taťána Jarošíková | The development of a specific nanofiber bioreceptor for bacterial detection | ONLINE |
| 8 | 166 | BB I | Iuliana Soldanescu, Andrei Lobiuc and Mihai Dimian | Development of Nanopores Raw Signal Analysis Techniques for Accurate Protein Detection and Quantification | ONLINE |

Biomaterials and Biotechnologies, BB (II); Moderators: Vera Bălan, Andreea Luca

FRIDAY, 10 November, 11:30-13:30, Room 301

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|-----------|-----|-------|--|---|--------|
| 10 | 188 | BB II | Ștefania-Claudia Jitaru, Andra-Cristina Enache, Gabi Drochioiu, Brindusa-Alina Petre and Vasile-Robert Gradinaru | Dendritic-like Self-assembling Pentapeptide with Potential Applications in Emerging Biotechnologies | ONLINE |
| 11 | 214 | BB II | Verginica Schroder, Manuela Rossemary Apetroaei, Irina Mihaela Iancu, Gabriela Mitea, Ramona Mihaela Stoicescu, Adina Honcea, Valeriu Iancu, Iulian Catalin Bratu, Laura Enache and Ileana Rau | Antibacterial activity of chitosan and oligochitosan biofilms | ONLINE |
| 12 | 223 | BB II | Rajat Nagpal, Cristian Lupan, Adrian Birnaz, Philipp Schadte, Mihai Brînză, Leonard Siebert and Oleg Lupan | Study on Al ₂ O ₃ /ZnO heterostructure based UV detection for biomedical applications | ONLINE |
| 13 | 225 | BB II | Mihai Brinza, Dinu Litra, Maxim Chiriac, Rajat Nagpal and Oleg Lupan | Gas Sensing Structure of CuO/Cu ₂ O Doped with Sn for Ethanol with Potential Detection in Exhaled Breath | ONLINE |
| 14 | 231 | BB II | Zdenek Kukla and Roman Matejka | Pneumatic Driven Pulsatile Perfusion Bioreactor for Tissue Engineered Vascular Replacements | ONLINE |
| 15 | 232 | BB II | Jana Matejkova, Frantisek Zima, Monika Supova and Roman Matejka | Polycaprolactone nanofibrous scaffolds as a material for vascular replacements | ONLINE |
| 16 | 233 | BB II | Roman Matějka, Denisa Kanokova, Monika Supova and Jana Matejkova | Vascular Grafts Derived from Decellularized Tissues Modified with 3D Bioprinting | ONLINE |
| 17 | 234 | BB II | Denisa Kaňoková, Jana Matějková, Monika Šupová and Roman Matějka | Semi-Automated Collagen Bioink Preparation and Influence on its pH and Resulting 3D Bioprinting Quality | ONLINE |

Biomechanics, BM (I); Moderators: Emil Budescu, Sânziana Moldoveanu

FRIDAY, 10 November, 11:30 – 13:30, Room 303

| | | | | | |
|----------|-----|------|--|--|---------------|
| 1 | 69 | BM I | Alizée Leleu and Tomás E. Ward | Comparing Automated and Non-Automated Machine Learning for Binary Classification of Running Fatigue using Wearable Sensors | ONSITE |
| 2 | 75 | BM I | Andrei-Horia Brănescu, Dan-Mihai Rusu, Nicolae-Florin Cofaru and Raul-Mihai Petrașcu | Developing the 3D model of the human lower body using the Skeleton System method | ONSITE |
| 3 | 79 | BM I | René Baranyi, Stefan Kaim, Christoph Aigner, Dominik Hoelbling and Thomas Grechenig | WristReha – Using Serious Game Tech for a Low Cost Yet Efficient Wrist Rehabilitation Process | ONLINE |
| 4 | 103 | BM I | Lorena Stracke, Simon Burbach, Rebekka Jakob, Rainer Brück and Tanja Joan Eiler | Development of a Standalone VR Application for the Simulation of Lower Extremity Amputations | ONLINE |
| 5 | 106 | BM I | Rares-Stefan Teodorescu, Mihai Neghina, Radu | Statistical Method for Identification of Deformity Regions | ONLINE |

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|---|-----|------|--|--|--------|
| | | | Petruse and Saša Čuković | and Automatic Scoliosis Diagnosis | |
| 6 | 132 | BM I | Robert LeMoyne and Timothy Mastroianni | Virtual Proprioception with Eccentric Training for a Shoulder Press by a Wearable System | ONLINE |
| 7 | 133 | BM I | Robert LeMoyne and Timothy Mastroianni | Longitudinal Evaluation of a 30 Day Therapy Treatment of a Hemiplegic Ankle by Applying a Wearable System and Machine Learning | ONLINE |

Biomechanics, BM (II); Moderators: Mihaela Baritz, Daniela-Mariana Barbu

FRIDAY, 10 November, 15:40 – 17:40, Room 301 (after SS6)

| | | | | | |
|---|-----|-------|--|---|------------------|
| 1 | 181 | BM II | Soumya Kanti Manna, Adan Khan, Oliver Dilley and M A Hannan Bin Azhar | Tele-controlled Upper Arm exoskeleton for Post-stroke Recovery | ONSITE |
| 2 | 183 | BM II | Caitlin Trainer, Soumya Kanti Manna and M A Hannan Bin Azhar | Innovative Assistive Device to Enhance Wrist Drop Treatment in Patients | ONSITE |
| 3 | 205 | BM II | Alexandru Ianosi-Andreeva-Dimitrova and Dan Mandru | Semi-autonomous Patient Transfer System Assisted by Computer Vision | ONSITE POSTER |
| 4 | 123 | BM II | Vincenzo Muto and Paolo Bifulco | Evaluation of a dual force sensor to monitor muscle contraction | ONSITE POSTER |
| 5 | 237 | BM II | Andreea Dosoftei, Laurențiu Ștefan Bălăuță, Alexandru-Tudor Popovici and Catalin Dosoftei | Mechatronic-eXtended Reality Integration: Potential for Medical Rehabilitation Applications | ONLINE |
| 6 | 160 | BM II | Tracy Cristina Guevara Garcia, Maria Fernanda Berlioz and Karla Miriam Reyes Leiva | Biomechanical analysis of functional movement in athletes using Kinovea | ONLINE |
| 7 | 200 | BM II | Lorenzo Hermez, Nesma Houmani, Sonia Garcia-Salicetti, Omar Galarraga and Vincent Vigneron | Gait Deviation and Neurological Diseases: a Comparative Study of Quantitative Measures | ONLINE |

Decision support systems, AI, Bioinformatics, Learning (I) – DSS-AI (I); Moderators: Diana Lungeanu, Catalin Stoean

THURSDAY, 9 November, 11:00 – 13:00, Room 302

| | | | | | |
|---|---|--------|--|---|--------|
| 1 | 1 | DSS-AI | Harshit Bhalla | Machine Learning for Diagnosis of Pancreatic Ductal Adenocarcinoma Using Urine Samples | ONLINE |
| 2 | 2 | DSS-AI | Aleksei Zhdanov, Daniil Bulev, Anton Dolganov and Mikhail Kulyabin | Comparative Analysis of Machine Learning Clustering Methods for Electroretinogram | ONSITE |
| 3 | 6 | DSS-AI | Saanya Yadav and Yasha Hasija | Predicting Breast Cancer Survival Rate based on Genetic Data: A Machine Learning Approach | ONLINE |
| 4 | 8 | DSS-AI | Andrei Daniel Tudosi, Adrian Gaur, Doru Gabriel Balan and Alin Dan Potorac | Automatic Directory Service Integration in Distributed Firewall Resources: A Study of Scripting and LDAP Integration with pfSense | ONLINE |

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|---|-----|--------|---|--|--------|
| 5 | 11 | DSS-AI | Blanca Larraga-García, Luis Castañeda López, Fernando Monforte-Escobar, Rubén Quintero Mínguez, Manuel Quintana-Díaz and Álvaro Gutiérrez | Improvement and evaluation of emergency trauma management using interactive simulation | ONLINE |
| 6 | 22 | DSS-AI | Ethan Yan | Detection of Acute Myeloid Leukemia Using Deep Learning Models Based Systems | ONLINE |
| 7 | 30 | DSS-AI | Abdulaziz Altwijri, Sergio Albiol-Pérez, José-Antonio Gil-Gómez, José-Antonio Lozano-Quilis, Cristina García-Muñoz, María Jesús Casuso-Holgado, María-Dolores Cortés and Habib M. Fardoun | Improvements in patients with vestibular disorders by using Virtual Reality | ONSITE |
| 8 | 108 | DSS-AI | Kazunari Hemmi, Chihiro Shibata, Kohei Miyata, Mohannad Alkanan, Shingo Miyamoto, Toshiro Imamura, Hiroaki Fukunishi and Hirotane Numano | Exploring Effective Approaches on Transformer-based Neural Models for Multi-clinical Large-scale Cardiocogram Data | ONLINE |
| 9 | 31 | DSS-AI | Eunice Leung | Muscle Fatigue Identification Using a Time Frequency Deep Autoencoder | ONLINE |

Decision support systems, AI, Bioinformatics, Learning (II) – DSS-AI (II); Moderators: Daniela Zaharie, Cristina Dascălu
THURSDAY, 9 November, 14:30 – 16:30, Room 302

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|----|----|--------|---|--|--------|
| 10 | 36 | DSS-AI | Evelin-Henrietta Dulf, Alexandru-George Berciu and Teodora Mocan | Tumour Evolution Prediction Based on Mathematical Models | ONLINE |
| 11 | 37 | DSS-AI | Marina-Adriana Mercioni and Stefan Holban | Ovarian Cancer Detection With Popular AI Algorithms: A Brief Review | ONLINE |
| 12 | 39 | DSS-AI | Maha S. Diab and Esther Rodriguez-Villegas | Comparison of the Performance of Statistical and Spectral Feature Based Models for Embedded Cough Detection Using Accelerometry Data | POSTER |
| 13 | 41 | DSS-AI | Maha S. Diab and Esther Rodriguez-Villegas | Assessing the Feasibility of Cough Detection Using Statistical Features Extracted from Accelerometry Data | POSTER |
| 14 | 48 | DSS-AI | Emanuele Tauro, Alessandra Gorini, Grzegorz Bilo and Enrico Caiani | A data-driven method to perform Personas Validation using Clustering consensus metrics | ONLINE |
| 15 | 57 | DSS-AI | Roxana Todorean and Oana Geman | Emotional Disturbances and Obesity: A Machine Learning Approach to Predictive Modeling | POSTER |
| 16 | 59 | DSS-AI | Vlad Constantin Craciun, Radu Marian Lefter and Mihaela Luca | Laboratory tests: FARM – Framework for Activity Real-time Monitoring software | ONLINE |
| 17 | 60 | DSS-AI | Christoph Aigner, René Baranyi, Dominik Hoelbling, Kevin Baur, Victoria Zeillinger and Thomas Grechenig | Analysis, Implementation, and Assessment of a Serious Game for Smoking Cessation: Investigating Design and Playtesting Outcomes | ONLINE |

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| 18 | 65 | DSS-AI | Mironela Pirnau, Iustin Priescu, Daniela Joita and Catalina Mihaela Priescu | Analysis of security methods for medical data in cloud systems | ONLINE |
| 19 | 38 | DSS-AI | Sasan Haghani, Taqiya Ehsan, Harini Senthilkumar, Abdul Uddin, Sahej Bansal, John Canevari and Shabana Motlani | ComorbiViz: A Tool for Visualizing Comorbidity Risks and Costs Associated with Obesity | POSTER |

Decision support systems, AI, Bioinformatics, Learning (III) – DSS-AI (III); Moderators: Ruxandra Stoean, Dragoş Arotăriţei
THURSDAY, 9 November, 16:30 – 18:30, Room 302

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|----|-----|--------|---|---|--------|
| 21 | 32 | DSS-AI | Nicolae Goga | Blockchain use for innovative Bengee System for Medical Products | ONSITE |
| 22 | 112 | DSS-AI | Jad Botros, Farah Mourad-Chehade and David Laplanche | CNN-LSTM Fusion: An Intelligent Framework for Classifying Heart Failure Severity | ONSITE |
| 23 | 71 | DSS-AI | Anna Jurek-Loughrey, Richard Gault, Baharak Ahmaderaghi, Muhammad Fahim and Lu Bai | Interpreting Deep Patient Stratification Models with Topological Data Analysis | ONLINE |
| 24 | 81 | DSS-AI | Pooja Arambhan, Hemant Belsare, David Armstrong, Lawton Cooper and Daniel Weiss | An Investigative Approach to the Co-Relation and Prevalence of Peripheral Artery Disease in Diabetics In India | ONLINE |
| 25 | 85 | DSS-AI | Jessica Alvarino-Durán, Betania Hernández-Ocaña, José Hernández-Torruco and Oscar Chávez-Bosquez | Detection of cardiac arrhythmias using unsupervised learning: a preliminary approach based on PAM and CLARA clustering algorithms | ONLINE |
| 26 | 96 | DSS-AI | Jasmin Freudenberg, Rainer Brück and Tanja Eiler | Experience and acceptance of AI expert systems in medical teaching | ONLINE |
| 27 | 99 | DSS-AI | Ciara Frances Loughrey, Paweł Dłotko and Anna Jurek-Loughrey | A Mapper-based Classifier for Patient Subgroup Prediction | ONLINE |
| 28 | 105 | DSS-AI | Benedetta Salvatori, Agnese Piersanti, Tina Linder, Daniel Eppel, Micaela Morettini, Christian Göbl and Andrea Tura | Machine Learning-Based Indices Assessing Different Aspects of Beta-Cell Function in Pregnancy | ONLINE |
| 29 | 116 | DSS-AI | Simon Burbach, Annika Steiger, Neruna Yugarajah, Rainer Brück and Tanja Joan Eiler | Virtual Heartbeats, Real Expertise – Concept and Implementation of a Virtual Reality ECG-Training-Simulator | ONLINE |
| 30 | 119 | DSS-AI | Karla Miriam Reyes Leiva, Ramon Humberto Moncada Hernández and Dariela Milene Canaca Matamoros | Assessing the adoption and challenges of Electronic Health Records and Information Systems in Honduran hospitals | ONLINE |

Decision support systems, AI, Bioinformatics, Learning (IV) – DSS-AI (IV); Moderators: Nirvana Popescu, Loredana Stanciu

FRIDAY, 10 November, 8:00 – 10:00, Room 305

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|-----------|-----|--------|--|--|--------|
| 31 | 128 | DSS-AI | Geanina Silvana Banu, Daniela Joita and Iustin Priescu | The Transformative Role of Large Language Models in Medicine | ONSITE |
| 32 | 142 | DSS-AI | Loredana Stanciu, Elena Faur and Adriana Albu | AnatomyLab – Web application for Romanian medical students to learn the human body anatomy | ONSITE |
| 33 | 143 | DSS-AI | Ana Balan | Transforming Digital Product Information Beyond e-Labeling | ONSITE |
| 34 | 173 | DSS-AI | Elena-Anca Paraschiv, Marilena Ianculescu and Adriana Alexandru | Bridging the Gap: Deep Learning EEG-based Applications for Schizophrenia Classification and Management | ONSITE |
| 35 | 130 | DSS-AI | Hadi El Zein, Farah Mourad-Chehade and Hassan Amoud | Wi-Fi CSI-based Fall Detection using CNN with Advanced Decision Mechanism | ONSITE |
| 36 | 151 | DSS-AI | Miruna-Elena Iliuță, Mihnea-Alexandru Moisescu, Eugen Pop and Traian-Costin Mitulescu | Integration of Digital Twin models with Systems Medicine for Eye Diseases | ONSITE |
| 37 | 164 | DSS-AI | Alin-Gabriel Cococi and Radu Dogaru | Ocular disease classification using TinyML for efficient Android implementation | ONLINE |
| 38 | 167 | DSS-AI | Eleftheria Kouremenou, Argyro Mavrogiorgou, Athanasios Kiourtis and Dimosthenis Kyriazis | Interoperability in Healthcare: Explaining HL7 FHIR towards Constructing Data Models and FHIR Profiles | ONLINE |
| 39 | 174 | DSS-AI | Alexandru-Ionuț Șiean, Cornelia Ilciuc and Petruța-Paraschiva Rusu | Couples Coping Enhancement Training: a Mobile Relationship Education Program | ONLINE |

Decision support systems, AI, Bioinformatics, Learning (V) – DSS-AI (V); Moderators: Adriana Albu, Daniela Gîfu

FRIDAY, 10 November, 15:40 – 17:40, Room 305

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|-----------|-----|--------|--|--|--------|
| 40 | 21 | DSS-AI | Elena-Claudia Maftei and Otilia Zvoristeanu | The future of therapy: a study on emotion recognition solutions using NAO robot | ONSITE |
| 41 | 185 | DSS-AI | Eugenia Tirziu, Ana-Mihaela Vasilevschi, Eleonora Tudora and Adriana Alexandru | CNN-based approach for accurate Parkinson's disease detection from gait analysis data | ONSITE |
| 42 | 186 | DSS-AI | Ana-Mihaela Vasilevschi, Marilena Ianculescu and Cristian-Mihail Petrache | Remote Monitoring of Neurodegenerative Patients through Enhanced EMG Signal Processing | ONSITE |
| 43 | 195 | DSS-AI | T. Sunil Kumar, Andrea Holten, Pallavi Patil, Laura Lema-Perez, Øyvind Stavadahl and Anders Lyngvi Fougner | Feasibility of Meal Onset Detection using Electrocardiograms | ONLINE |
| 44 | 198 | DSS-AI | Agnese Piersanti, Benedetta Salvatori, Piera D'Avino, Laura Burattini, Christian Göbl, Andrea Tura and Micaela Morettini | Diabetic Retinopathy Detection: a Machine-Learning Approach based on Continuous Glucose Monitoring Metrics | ONLINE |
| 45 | 201 | DSS-AI | | Individual Estimation of Parameters Describing the | |

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|----|-----|--------|--|--|--------|
| | | | Libera Lucia Del Giudice, Agnese Piersanti, Laura Burattini, Andrea Tura and Micaela Morettini | Glucose-Insulin Regulatory System: a Modeling Approach with Regularization for Reduced-Sampling Oral Glucose Tolerance Test Data | POSTER |
| 46 | 213 | DSS-AI | Alexe Ciurea, Cristina-Petruta Manoila and Bogdan Ionescu | EEG Classification using Hybrid Convolutional Neural Network with Attention Mechanism | POSTER |
| 47 | 222 | DSS-AI | Huber Nieto-Chaupis | Next Global Pandemic From Entropy of Shannon and Bayes Probability Usage of Covid-19 World Data | POSTER |
| 48 | 229 | DSS-AI | Iasmina Cernaianu, Sebastian-Aurelian Stefaniga and Todor Ivascu | Deep Learning-based Multiple Skin Lesion Classification | ONLINE |
| 49 | 235 | DSS-AI | Are Are Dæhlen, Ilona Heldal, Qasim Ali, Jozsef Katona and Attila Kovari | Virtual Reality and Eye-Tracking Based Vision Screening – a Bibliometric Study | ONLINE |
| 50 | 162 | DSS-AI | Sumukh Venkatesh, Himani Jha, Farwa Kazmi and Sohail Zaidi | Classification of Maternal Health Risks Using Machine Learning Methods | ONLINE |

Environmental protection and Health – EPH; Moderators: Laura Bulgariu, Irina Gabriela Cara

FRIDAY, 10 November, 8:00 – 10:00, Room 303

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|---|-----|-----|---|--|--------|
| 1 | 16 | EPH | Iulia-Florentina Darie, Steluta Gosav and Mirela Praisler | Characterisation of novel illicit drugs based on computational toxicology | ONSITE |
| 2 | 7 | EPH | Loredana Munteanu, Anca-Mihaela Mocanu, Irina-Gabriela Cara and Laura Bulgariu | Effect of Biosorbent Dose in the Removal of Phosphate on Marine Algae Biomass | |
| 3 | 17 | EPH | Cristina Paraschiv, Steluta Gosav and Mirela Praisler | Chemical potential evaluation of kaempferol based on molecular modeling | ONLINE |
| 4 | 26 | EPH | Alina Alexandra Ciobanu, Andrei Ilau, Gabriela Lisa and Laura Bulgariu | Effect of Pyrolysis Temperature on Characteristics of Biochars Derived from Marine Algae Biomass (<i>Ulva lactuca</i>) | ONLINE |
| 5 | 192 | EPH | Alexandra Apostica and Laura Bulgariu | Utilization of Marine Algae Biomass for Eco-friendly Obtaining of Gold Nanoparticles | ONLINE |
| 6 | 202 | EPH | Aurelia Nica, Stefan Mihai Petrea, Ira-Adeline Simionov, Iticescu Catalina, Antache Alina and Metaxa Isabelle | Perspectives regarding the main biotechnological strategies for developing vaccines in aquaculture | POSTER |

Medical devices, Instrumentation, Measurements (I) – MD (I); Moderators: Radu Adrian Munteanu, Cristian Rotariu

THURSDAY, 9 November, 11:00 – 13:00, Room 305

| | | | | | |
|---|----|----|---------------|---|--------|
| 1 | 18 | MD | Mehul Chauhan | Optimising Magnetic Fields & Coil Designs for Magnetic Hyperthermia – Breast Cancer Treatment | ONSITE |
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| 2 | 107 | MD | Ionela Riciu and Magdalena Anghel | Using LabVIEW in Neural Network Modeling | ONLINE |
| 3 | 45 | MD | Simon Walzel | Comparing Perfusion Index Between Fingers During Short-term Hypoxemia: Implications for SpO2 Monitoring | ONSITE |
| 4 | 64 | MD | Lucian Evdochim, Dragos Dobrescu, Lidia Dobrescu, Silviu Stanciu and Stela Halichidis | Group Delay Effect Analysis Between Arterial Blood Pressure and Photoplethysmography Waveforms | ONSITE |
| 5 | 70 | MD | Iustin Priescu, Daniela Joita, Ionica Oncioiu, Lucian-Stefanita Grigore, Stefan Botoncea and Ciprian Bilu | Considerations for Controlling a Bionic Hand Using EMG Sensors | ONSITE POSTER |
| 6 | 20 | MD | Anca Morar, Maria-Anca Băluțoiu, Alin Moldoveanu, Florica Moldoveanu, Andrei Lăpușteanu and Victor Asavei | Cloud Anchors-Based Localization in a Navigation System for Visually Impaired People | ONLINE |
| 7 | 28 | MD | Stefano Ricci | Electronic Phantom for Wall Shear Rate Emulation | POSTER |
| 8 | 40 | MD | Cristina Montero-Pardo, Blanca Delgado-Bonet, Alejandro Pascual-Valdunciel, Javier Ricardo Pérez-Sánchez, Francisco Grandas, Juan C. Moreno, Álvaro Gutiérrez, Filipe Oliveira Barroso | Comparison of Wrist Positions and Assessment Techniques to Evaluate Disynaptic Group I Inhibition | ONLINE |
| 9 | 35 | MD | Lavanya Muthusamy, Manav Bava, Md Sohanur E Hi Raju and Goutam Koley | Flexible self-poled P(VDF-TrFE)/SnO2 composite piezoelectric film for energy harvesting and wearable sensors | ONLINE |

**Medical devices, Instrumentation, Measurements (II) – MD (II); Moderators: Radu George Ciorap, Călin Corciovă
THURSDAY, 9 November, 14:30 – 16:30, Room 305**

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|----|----|----|---|--|--------|
| 10 | 98 | MD | Calin Vaida, Gabriela Alexandra Rus, Lupu David, Bogdan Gherman, Paul Tucan, Daniel Horvath and Doina Pisla | Assessment of different biosignals with potential benefits in robotic assisted neuromotor rehabilitation | ONSITE |
| 11 | 74 | MD | Marco Baragona, Zoi Tokoutsis and Aaldert Elevelt | DNN surrogate towards fast ablation zone prediction in thermal ablation | ONLINE |
| 12 | 80 | MD | Nikolay Dukov and Kristina Bliznakova | Creation of Physical Breast Phantom for Educational Purposes | POSTER |
| 13 | 87 | MD | Annika Steiger, Rainer Brück and Alexander Keil | A review of non-invasive blood glucose measurement techniques | POSTER |
| 14 | 88 | MD | Beyza Cinar, Rainer Brück and Alexander Keil | Review of Non-Invasive Analysis of Blood Components | ONLINE |
| 15 | 89 | MD | Simon Burbach, Rainer Brück and Alexander Keil | State-of-the-art Analysis of Cuffless Methods for Blood Pressure Measurement | ONLINE |
| 16 | 90 | MD | Kristina Bliznakova, Nikolay Dukov, Tsvetelina Teneva and Zhivko Bliznakov | Investigating the Suitable Materials for the Creation of Breast Lesions: A Simulation Study | POSTER |
| 17 | 72 | MD | | Sensitivity analysis and uncertainty quantification of | ONLINE |

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| | | | Zoi Tokoutsis and OBaragona | effective models for microwave thermal ablation of liver tumors | |
| 18 | 19 | MD | Diego H. Nino and William D. Moscoso-Barrera | Development of an electronic prototype for stress measurement using physiological variables in school teachers | ONLINE |

**Medical devices, Instrumentation, Measurements (III) – MD (III); Moderators: Octavian Postolache, George Seritan
THURSDAY, 9 November, 16:30 – 18:30, Room 305**

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|----|-----|----|--|---|---------------|
| 19 | 121 | MD | Francesco Bonavolontà, Giovanna Capolongo, Pasquale Zamboli, Massimo Punzi, Vincenzo Muto, Rosalba Liguori, Annalisa Liccardo and Emilio Andreozzi | A New System to Monitor Arteriovenous Fistula | ONSITE POSTER |
| 20 | 124 | MD | Vincenzo Muto and Daniele Esposito | Minimal force myography Human-Machine Interface for hand gesture recognition | ONSITE |
| 21 | 149 | MD | Alexandru Pusca, Iulia Andras, Andrei Cailean, Nicolae Crisan, Calin Vaida, Corina Radu, Bogdan Gherman, Nadim Al Hajjar and Doina Pislă | On the development of an innovative surgical parallel robotic system | ONSITE |
| 22 | 129 | MD | Jia-Yi Tsai, Heng-Shuen Chen, Mei-Ju Su and Yang-Wen Chieh | Pose Estimation and Face Landmark Information for Ocular Torticollis monitoring based on OpenPose | ONLINE |
| 23 | 136 | MD | Denis Mihailovschi, Bianca-Alexandra Zîrnă and Mădălin-Corneliu Frunzete | Development of a portable heart rate monitoring device | ONLINE |
| 24 | 137 | MD | Anca Constantinescu Dobra, Raluca Marian, Claudia Steluta Martis and Anca Iulia Nicu | Is innovation crucial for artificial respiration system market? A strategic portfolio assessment | ONLINE |
| 25 | 138 | MD | Huber Nieto-Chaupis | Kirchoff's Voltage Law at Neural Synapse From Electric Currents Based at Neurotransmitters | POSTER |
| 26 | 139 | MD | Huber Nieto-Chaupis | Instantaneous Interactions Between Nanoparticles and Tumors Dictated by Bayes Theorem | ONLINE |

**Medical devices, Instrumentation, Measurements (IV) – MD (IV); Moderators: Cristian Foşalău, Marius Zbancioc
FRIDAY, 10 November, 8:00 – 10:00, building V, Room V 304**

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| 27 | 212 | MD | Honorina Ocagli, Valeria Basso, Carlotta Borghini, Danila Azzolina, Konstantina-Thaleia Pilali, Maria Vittoria Chiaruttini, Dario Gregori, Corrado Lanera | Involving Operators in Bed Enhancement Development | ONSITE |
| 28 | 172 | MD | Neruna Yugarajah, Rainer Brück and Alexander Keil | Methodology and Sensor Technology for Hydration Monitoring | ONLINE |
| 29 | 189 | MD | Anca Iulia Nicu, Anamaria Lomotă, Anca | Noninvasive system for glucose monitoring based on the | ONLINE |

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|----|-----|----|---|--|--------|
| | | | Constantinescu-Dobra and Claudia Steluța Marțiș | galvanic skin response (GSR) | |
| 30 | 191 | MD | Hemant Belsare, Dr. Jireh Seow and Dr. Cj Meadows | Factors Influencing Adoption of High-value Innovation in Medical Technology Industry | ONLINE |
| 31 | 194 | MD | Ioana Cișmaș and Alexandru-Gabriel Cișmaș | Hardware parameters for trust mechanisms in MIoT | POSTER |
| 32 | 204 | MD | Marius-Emanuel Obreja | Pothole detection using Jetson Nano embedded system – an evaluation of training models | ONLINE |
| 33 | 207 | MD | Catalin-Mihai Radu, Irina Mocanu and Oana Teodora Cramariuc | A Smart Healthcare System | ONLINE |
| 34 | 209 | MD | Oana Andreea Rusanu | A LabVIEW and P300 Speller based Brain-Computer Interface for Controlling a Robotic Arm and a Mobile Robot by Using the GTEC Unicorn Headset | ONLINE |
| 35 | 163 | MD | Rafael-Bogdan Nechifor, Sebastian Tanasă, Iuliana Chiuchisan and Oana Geman | Electroencephalograph or/and BCI: The Next Frontier of At-Home Monitoring | ONLINE |
| 36 | 113 | MD | Florina Ungureanu, Bianca Andreea Bordea, Robert Gabriel Lupu and George Vieriu | On Authentication in Virtual Reality Environments for Rehabilitation and Psychotherapy Systems | ONSITE |

**Medical devices, Instrumentation, Measurements (V) – MD (V); Moderators: Georgeta-Mihaela Neagu, Dan Dobrea
FRIDAY, 10 November, 11:30 – 13:30, building V, Room V 304**

| | | | | | |
|----|-----|----|--|---|--------|
| 37 | 217 | MD | Septimiu Crisan and Alexandra Bianca Somesan | An Economic Approach to Precise Vein Detection and Visualization | ONLINE |
| 38 | 220 | MD | Yun-Hsuan Chen, Keqin Liu, Xin Gu, Zheng Zhang, Congguo Yin and Mohamad Sawan | fNIRS Monitoring During Carotid Artery Stenting for Outcomes Prediction | ONLINE |
| 39 | 228 | MD | Cristian Aghion, Marius Gheorghe Hagan and Oana Geman | Innovative Apnea Monitoring System using Flow and Thermoelectric Respiratory Sensors with Energy Harvesting | ONLINE |
| 40 | 242 | MD | Mihai Aron, Daniela Goldan, Teofil Ilie Ursache, Clarissa-Maria Bătrînu, Cristian Rotariu | Medical Device for Transcutaneous Bilirubin Measurements | ONSITE |
| 41 | 243 | MD | Daniela Goldan, Teofil Ilie Ursache, Cristian Rotariu | Low-Cost Device for Transcutaneous Visualization of Veins | ONSITE |
| 42 | 244 | MD | Mihai Aron, Mihaela Istrate, Teofil Ilie Ursache, Cristian Rotariu | Medical System based on Physical Therapy Robotic Assistance for Developing Motor Skills | ONSITE |
| 43 | 245 | MD | Iulian Claudiu Lazăr, Teofil Ilie Ursache, Mihai Aron, Gabriela-Gladiola Petroiu, Cristian Rotariu | Automatic Monitoring of Driver's Physiological Parameters by using a Smart Steering Wheel | ONSITE |
| 44 | 246 | MD | Daniela Gîfu, Romeo Bosneagu and Iulius Liviu Rusu | Multi-use Floating Platform for Emergency Situations | ONLINE |
| 45 | 218 | MD | Armando Josué Piña Díaz, Mauricio Aarón Pérez Romero and Adrián Estéban Mejía García | Design of an electronic fall detection device for orthopedic walker users | ONLINE |

**Medicine & Informatics (I) – MI (I) = SS7; Moderators: Marcel Costuleanu, Adina Carmen Ilie
THURSDAY, 9 November, 14:30 – 16:30, Room 303**

| | | | | | |
|----|-----|----------|--|---|--------|
| 1 | 25 | MI (I) | Nan Mu and Xuebing Li | The benefit of intelligent mobile terminal based emotional working memory training in Chinese office workers | POSTER |
| 2 | 33 | MI (I) | Chandana Pal, Anula Divyash Singh, Anitha Rani, Balakrishna Nagalla, Jayanthi Swaminathan and Aravind Kumar Rengan | The Impact of Effective Medical Record Keeping in shaping Clinical Site Perceptions | ONLINE |
| 3 | 34 | MI (I) | Ovidiu-Lucian Băjenaru, Cătălina-Raluca Nuță, Alexandru Balog, Mioara Avasilichioaei and Bogdan Ovidiu Popescu | Evaluation of Health-Related Quality of Life in Romanian Patients with Dystonia using EQ-5D-5L | ONLINE |
| 4 | 42 | MI (I) | Cristina Ghinea, Ancuta Elena Prisacaru, Sergiu Paduret and Ana Leahu | Consumer preferences for yogurt attributes: survey and sensory evaluation | POSTER |
| 5 | 43 | MI (I) | Radu-Nicolae Pietraru, Daniel Marian Merezeanu, Irina Ciofu and Cristian Persu | Cyber-Physical Penile Implant: Necessity or Premature Technological Risk? | ONLINE |
| 6 | 44 | MI (I) | Ancuta Elena Prisacaru, Cristina Ghinea, Eufrozina Albu and Andrei-Florin Ilas | Quality Assessment of Commercial Eggs: Effects of Oil Coating, Storage Time and Temperature on Physico-chemical and Microbiological Characteristics | POSTER |
| 7 | 46 | MI (I) | Omar Altwijri | Effect of thrombus porosity on Abdominal Aortic Aneurysm using CFD | ONLINE |
| 8 | 49 | MI (I) | Daniel Cosmin Calin, Dragos-Laurentiu Popa, Daniela Doina Vintila and Gabriel Buciu | Aspects of Theoretical, Clinical and Statistical Research in Hip Prosthesis Revision | POSTER |
| 9 | 50 | MI (I) | Daniel Cosmin Calin, Dragos-Laurentiu Popa, Daniela Doina Vintila and Gabriel Buciu | Aspects Regarding the Experimental Testing of Orthopedic Hip Revision Assemblies | POSTER |
| 10 | 51 | MI (I) | Daniel Cosmin Calin, Dragos-Laurentiu Popa, Daniela Doina Vintila and Gabriel Buciu | Virtual Experimental Testing of Orthopedic Hip Revision Assemblies for Normal Gait Loading | POSTER |
| 11 | 55 | MI (I) | Gabriel Buciu, Dragos-Laurentiu Popa, Daniela Doina Vintila and Daniel Cosmin Calin | Modeling and simulation of normal, pathological or post-surgical situations of human anatomical systems | ONLINE |
| 12 | 190 | MI (III) | Mitea Gabriela, Iancu Irina Mihaela, Schröder Verginica, Mireșan Horațiu, Bratu Iulian, Iancu Valeriu and Radu Marius Daniel | Pharmacological and Toxicological Aspects of Implanted Medical Devices in Treatment of Cardiovascular Disease | ONLINE |

**Medicine & Informatics (II) – MI (II) = SS7; Moderators: Ioana Alexa, Liana-Mioara Moș
THURSDAY, 9 November, 16:30 – 18:30, Room 301**

| | | | | | |
|----|-----|---------|--|--|--------|
| 13 | 145 | MI (II) | Martina Holá, Ondřej Gajdoš, Vojtěch Kamenský and Karolína Kubincová | Cost-effectiveness analysis of multiple sclerosis treatment approaches | ONSITE |
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|----|-----|---------|---|---|--------|
| 14 | 93 | MI (II) | Flaviana Rotaru, Ariana-Anamaria Cordos and Silviu Ionel Dumitrescu | Assessment of the Impact of COVID Pandemic on Research, Development, and Innovation Infrastructure in Romania | POSTER |
| 15 | 94 | MI (II) | Flaviana Rotaru, Ariana-Anamaria Cordos and Silviu Ionel Dumitrescu | Self-Perception of Stress during COVID-19 Pandemic in Romanian Research, Development and Innovation Institutes: An Observational Study | POSTER |
| 16 | 95 | MI (II) | Ana Leahu, Cristina Ghinea and Sorina Ropciuc | Apple Pomace: Influence on the Physico-chemical and Textural Characteristics of Gluten-free Biscuits | POSTER |
| 17 | 134 | MI (II) | Alexandra Delia Lupu-Petria, Dan Sabau, Alexandru Sabau and Ionela Maniu | Investigating outcomes of laparogastroscopy - an alternative palliative method of endoscopic stenting in advanced or inoperable esophageal cancer - in patients with and without prior chemo and radiotherapy | ONLINE |
| 18 | 84 | MI (II) | Danilo Calderone, Giuseppe Cesarelli, Luigi Ippariello, Giuseppe Mirone, Giuseppe Cinalli, Francesco Amato and Fabrizio Clemente | Applications of 3D Printing and Neuronavigation in Neurosurgery: a Literature Review and a Clinical Case Report | ONLINE |
| 19 | 156 | MI (II) | David Perpetuini, Emanuele Francesco Russo, Daniela Cardone, Roberta Palmieri, Michele Giuseppe Di Cesare, Michele Tritto, Raffaello Pellegrino, Rocco Salvatore Calabrò, Serena Filoni and Arcangelo Merla | An fNIRS Based Assessment of Cortical Plasticity in Children With Cerebral Palsy Undergoing Robotic-Assisted Gait Training | ONLINE |
| 20 | 157 | MI (II) | Hacer Duzman, Reza Daryani, Emre Cenk Ersan and Mustafa Serdar Çelebi | Patient-Specific In-Silico Hemodynamic Analysis of the Anomalous Aortic Origin of the Coronary Artery (AAOCA) | ONLINE |
| 21 | 158 | MI (II) | Ayesha Naeem, Nosheen Fatima and Farid Menaa | Optimization of the Experimental Design Parameters for synthesis of Minoxidil Loaded Transethosomes as Nano-Based Hair Growth Vesicles | ONLINE |
| 22 | 161 | MI (II) | Mohammad Ishtiaque Rahman, Forhan Bin Emdad, Chashi Mahiul Islam and Zhe He | Uncovering the Interplay of Demographics and Healthcare Provider Availability on CMS HCC Risk Scores for Disabled Beneficiaries | ONLINE |

**Medicine & Informatics (III+IV) – MI (III+IV) = SS7; Moderators: Corina Zorilă, Ramona Ursu, Georgeta Zegan
FRIDAY, 10 November, 15:40 - 17:40, Room 303**

| | | | | | |
|----|-----|----------|--|---|------------------|
| 23 | 178 | MI (III) | Luca Boretto, Egidijus Pelanis, Alois Regensburger and Ole Jakob Elle | Laparoscopic Feature-Less 3D Reconstruction Using Neural Radiance Fields and Optical Tracking | ONSITE |
| 24 | 199 | MI (III) | Tomáš Krajča, Stanislav Mareček, Petr Sojka, Petr Dušek and Radim Krupička | Streamlining Neuroimaging - Snakemake's Role in Developing a Striatal Segmentation Pipeline | ONSITE POSTER |
| 25 | 240 | MI (III) | Lubomír Štěpánek, Jiří Novák, Ondřej Vít and Luboš Marek | Governing the trade-off between time period length and observations' number with machine learning: A number of previous days needed for prediction of future COVID 19 | ONSITE |

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| | | | | positives' count using Czech data | |
| 26 | 182 | MI (III) | Nikolaos Siopis, Antonios Lalas, Konstantinos Votis, Dimitrios Tzovaras and Pantelis Angelidis | Take-A-Breath: A Novel Training Approach for Inhaler Usage through AI-based Self-Management and Empowerment Platform | ONLINE |
| 27 | 227 | MI (III) | Monica Dugăeșescu, Violeta Ionela Bădiță and Elena Poenaru | Returning incidental findings to study participants in genomic research: a discussion of the ethical aspects | ONLINE |
| 28 | 238 | MI (III) | Marketa Zakova, Martin Fus, Hana Chylova and Leos Tejkl | Efficacy of Defocus Incorporated Multiple Segment lenses in a young Czech Population | ONLINE |
| 30 | 241 | MI (III) | Ramona Gabriela Ursu, Diana Costin, Costin Damian, Silvia Ionescu, Luminița Smaranda Iancu and Cristina Daniela Dimitriu | The clinical utility of accurate testing of MDR bacterial strains in a Gynaecological Hospital associated Microbiology Laboratory | ONLINE |
| 31 | 58 | MI (I) | Ramona Gabriela Ursu, Diana Costin, Costin Damian, Silvia Ionescu and Luminița Smaranda Iancu | New directions for treating tumors: scientific context | ONLINE |
| 32 | 177 | MI (III) | Gabriela Grigoraș, Ramona Ștefăniu, Anca Iuliana Pîslaru, Sabinne Marie Albișteanu, Ana-Maria Turcu, Ioana Alexandra Sandu, Ioana Dana Alexa and Adina Carmen Ilie | Resilience in Adults | ONLINE |
| 33 | 250 | MI (III) | Andrei Daniel Timofte, Cornelia Amalinei, Cintia Colibaba | The digital transformation of histology and histopathology education from glass to virtual slides through an Erasmus+ European project | ONLINE |

**Medicine & Informatics IV, Dental Medicine - MI IV; Moderator: Georgeta ZEGAN
FRIDAY, 10 November, 15:40 - 17:40, Room 303 (after MI (III))**

| | | | | | |
|---|-----|---------|--|--|--------|
| 1 | 15 | MI (IV) | Georgeta Zegan, Eduard Radu Cernei, Daniela Anistoroaei, Loredana Golovcencu, Alina Sodor-Botezatu and Cristina Gena Dascalu | Mathematical Model regarding the Influence of Cephalometric Values of the Skull Base on the Skeletal and Soft Tissues Profiles | ONLINE |
| 2 | 203 | MI (IV) | Irina Gradinaru, Alexandra Bargan and Bianca-Iulia Ciubotaru | Dynamic Vapour Sorption Analysis in the Preliminary Evaluation of Silicone Impression Materials | ONLINE |

**Medical Imaging and Image Processing (I) - MIIP (I); Moderators: Tudor Barbu, Silviu Bejinariu
FRIDAY, 10 November, 11:30 – 13:30, Room 302**

| | | | | | |
|---|-----|------|--|---|---------------|
| 1 | 120 | MIIP | Georgiana-Livia Șîrbu and Adriana Albu | Artificial Intelligence Guided Diagnosis based on Optical Coherence Tomography Images | ONSITE POSTER |
| 2 | 5 | MIIP | | Multimodal Magnetic Resonance Image Restoration using | |

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|---|-----|------|---|--|--------|
| | | | Tudor Barbu | a Vector-valued Anisotropic Diffusion-based Mixed Noise Filtering Technique | ONSITE |
| 3 | 27 | MIIP | Adrian Ciobanu, Mihaela Luca, Radu Vulpoi and Vasile Drug | Anatomic Landmarks Detection by Deep Learning in Colonoscopy | ONLINE |
| 4 | 56 | MIIP | Kristina Bliznakova, Todor Todorov, Nikolay Dukov, Tsvetelina Teneva and Zhivko Bliznakov | Evaluation of a physical phantom for use with contrast enhanced x-ray technique | POSTER |
| 5 | 62 | MIIP | Nikolay Dukov, Vanessa-Mery Valkova, Mariana Yordanova and Kristina Bliznakova | Investigation of Specialized Phantom for Quality Control | POSTER |
| 6 | 77 | MIIP | Saied Salem, Ahmed Mostafa, Yasien E. Ghalwsh, Manar N. Mahmoud, Ahmed F. Elnokrashy and Ahmed M. Mahmoud | Computer-Aided System for Breast Cancer Lesion Segmentation and Classification Using Ultrasound Images | ONLINE |
| 7 | 110 | MIIP | Tsvetelina Teneva, Kristina Bliznakova, Nikolay Dukov and Zhivko Bliznakov | Interobserver Variability in Evaluation of Physical Breast Phantoms | POSTER |
| 8 | 3 | MIIP | Baidaa Rashed and Nirvana Popescu | A Novel Convolutional Neural Network for Medical Image Assisted Diagnosis | ONLINE |

**Medical Imaging and Image Processing (II) - MIIP (II); Moderators: Constantin Vertan, Mircea Vaida
FRIDAY, 10 November, 15:40 – 17:40, Room 302**

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|----|-----|------|---|---|--------------------------|
| 9 | 154 | MIIP | Roman Surkant, Jolita Bernatavičienė, Ieva Naruševičiūtė, Mantas Trakymas and Povilas Treigys | Time-signal curve evaluation from dynamic contrast enhanced MRI for prostate cancer detection | ONSITE POSTER |
| 10 | 226 | MIIP | Beatrice Zimpau-Valah, Sebastian-Aurelian Stefaniga, Todor Ivascu and Raluca Danculescu | X-Ray Images Classification Using Machine Learning Techniques | ONSITE |
| 11 | 146 | MIIP | Ioan Păvăloi, Cristina Diana Nita and Hariton Costin | Effects of different types of noise in palmprint image classification using SURF descriptors | ONLINE |
| 12 | 148 | MIIP | Yun Xin Teoh, Alice Othmani, Siew Li Goh, Juliana Usman and Khin Wee Lai | Segmentation of Knee Bones for Osteoarthritis Assessment: A Comparative Analysis of Supervised, Few-Shot, and Zero-Shot Learning Approaches | ONLINE |
| 13 | 165 | MIIP | Lijin P, Madhu S. Nair and Santhosh Kumar G. | TransNet: Advancing Colonoscopy Polyp Segmentation through Transformer Integration | ONLINE |
| 14 | 170 | MIIP | Marius Gavrilescu | Visual Identification of Volumetric Structures from 3D Medical CT Data Using Density and Visibility-based Quality Criteria | ONLINE |
| 15 | 221 | MIIP | Gabriel Bonteanu, Petronela Bonteanu, Arcadie Cracan and Radu Gabriel Bozomitu | A New Hybrid Pupil Detection Algorithm for Real Time Applications | ONLINE |
| 16 | 230 | MIIP | Francys Ramirez, Normandi Espinal and Alicia Maria Reyes-Duke | Identification of anomalies in the lungs by developing a system using deep learning | ONLINE |

Biomedical Signal Processing (I) – SP (I); Moderators: José J. Rieta, Alexandra Tăutan
THURSDAY, 9 November, 11:00 – 13:00, Room 303

| | | | | | |
|----------|-----|----|---|--|---------------|
| 1 | 13 | SP | Andrei Popescu and Catalin Buiu | Mean Membrane Potential Estimation for Neural Mass Models in EEG Recordings Using a Linear State Observer | ONSITE |
| 2 | 97 | SP | Marina Algaba-Vidoy, Jorge Andrés Gómez-García, Filipe Oliveira Barroso, Francisco Molina-Rueda, Diego Torricelli and Juan Camilo Moreno | Gait analysis of electromyographic spectral differences in stroke survivors and healthy controls | ONSITE |
| 3 | 29 | SP | Santiago Arias-García, José Hernández-Torruco, Betania Hernández-Ocaña and Oscar Chávez-Bosquez | Cardiac Arrhythmia Identification Using Feature Selection and Rule-Based Classifiers | ONLINE |
| 4 | 53 | SP | Pilar Escribano Cano, Juan Ródenas García, Manuel García Teruel, Flavia Ravelli, Michela Masè, José Joaquín Rieta and Raúl Alcaraz Martínez | Automatic Detection of High-Quality Fibrillatory Waves Segments from Atrial Fibrillation Electrocardiographic Recordings | ONLINE |
| 5 | 61 | SP | Yijing Xia, Xiaofu Zhang and Saeid Sanei | Murmur Separation and Classification from Heart Sound | ONLINE |
| 6 | 73 | SP | Vaishnav Thiagarajan | Bio-Signal Based Detection of Hyperarousal as Onset of Post-Traumatic Stress Disorder (PTSD) Episodes | POSTER |
| 7 | 100 | SP | Aikaterini Vraka, Vicente Bertomeu González, José Moreno-Arribas, Roberto Zangróniz, Raul Alcaraz Martínez and Jose Joaquin Rieta | Heart Rate Variability Machine Learning Models to Facilitate Elevated Blood Pressure Detection | ONLINE |
| 8 | 101 | SP | Aikaterini Vraka, Lorenzo Fácila, Fernando Hornero, Juan M. Gracia-Baena, Raul Alcaraz Martínez and Jose Joaquin Rieta | Improved Hypertension Detection Models Utilizing Pulse Rate Variability and Asymmetry | ONLINE |

Biomedical Signal Processing (II) – SP (II); Moderators: Radu Matei, Monica Fira
FRIDAY, 10 November, 8:00 – 10:00, Room 301

| | | | | | |
|-----------|-----|----|--|---|---------------|
| 11 | 109 | SP | Alvaro Huerta Herraiz, Arturo Martinez-Rodrigo, Miguel Ângelo Machado Guimarães, Davide Carneiro, Jose Joaquin Rieta and Raul Alcaraz Martínez | Application of Meta Learning in Quality Assessment of Wearable Electrocardiogram Recordings | ONSITE |
| 12 | 122 | SP | Jessica Centracchio and Vincenzo Muto | Heart rate variability analysis on Forcecardiography | ONSITE |

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| | | | | signals: a preliminary study | POSTER |
| 13 | 125 | SP | Salvatore Parlato, Vincenzo Muto and Paolo Bifulco | A Novel Approach to Recognize Valvular Heart Diseases based on Morphological Similarity of Heartbeats in Seismocardiography Signals | ONSITE POSTER |
| 14 | 126 | SP | Salvatore Parlato, Vincenzo Muto and Paolo Bifulco | Accurate ECG-free heartbeats localization in long-lasting SCG recordings | ONSITE POSTER |
| 15 | 102 | SP | Aikaterini Vraka, Aurelio Quesada, Vicente Bertomeu González, Philip Langley, Raul Alcaraz Martínez and Jose Joaquin Rieta | Application of Deep Learning to Electrocardiography for Hypertension Detection | ONLINE |
| 16 | 104 | SP | Aikaterini Vraka, Fernando Hornero, Lorenzo Fácila, Flavia Ravelli, Raul Alcaraz Martínez and Jose Joaquin Rieta | Harnessing Photoplethysmography and Deep Learning in Continuous Blood Pressure Monitoring for Early Hypertension Detection | ONLINE |
| 17 | 111 | SP | Javier Imaz-Higuera, Jaime Beltran-Sanchez, Javier Garcia-Casado, Yiyao Ye-Lin, J. L. Martínez-de-Juan, Marta Gutierrez-Delgado, Jennifer Prieto-House, Gema Más-Sesé, Araceli Belda-Calabuig and Gema Prats-Boluda | Comparison of e supra and infrahyoid muscle activity in healthy and dysphagic elderly populations. | ONLINE |
| 18 | 115 | SP | Ștefana Duță, Alina Elena Sultana and Cosmin Karl Bănică | Evaluation of Mental State Based on EEG Signals Using Machine Learning Algorithm | ONLINE |

**Biomedical Signal Processing (III) – SP (III); Moderators: Saeid Sanei, Monica-Claudia Dobreă
FRIDAY, 10 November, 11:30 – 13:30, Room 305**

| | | | | | |
|----|-----|----|---|--|---------------|
| 19 | 131 | SP | Malak Ghourabi, Farah Mourad Chehade and Aly Chkeir | Enhancing Wet and Dry Cough Classification with MFCC and Audio Augmentation | ONSITE |
| 20 | 206 | SP | José María López Belinchón, Miguel Ángel López Guerrero and Raúl Alcaraz Martínez | Multiscale Entropy Analysis of Heart Rate Variability for Risk Stratification of Cardiovascular Events in Hypertensive Patients | ONLINE |
| 21 | 135 | SP | Bianca-Alexandra Zîrnă, Denis Mihailovschi and Mădălin-Corneliu Frunzete | EEG signal processing for epileptic seizure detection | ONLINE |
| 22 | 140 | SP | Nur Zahra Janah, Adhistya Erna Permanasari and Noor Akhmad Setiawan | Memory and Visual Processing EEG for Alcohol Use Disorder Diagnosis with Linear Discriminant Analysis | ONLINE |
| 23 | 155 | SP | David Perpetuini, Pierpaolo Croce, Antonio Maria Chiarelli, Daniela Cardone, Filippo Zappasodi and Arcangelo Merla | Modifications of Microstates in Resting-State EEG Associated to Cognitive Decline in Early Alzheimer's Disease Assessed by a Machine Learning Approach | ONLINE |
| 24 | 169 | SP | Giuseppe Prisco, Leandro Donisi, Deborah Jacob, Lorena Guerrini, Antonella Santone, Mario Cesarelli, Fabrizio Esposito, Francesco Amato and | Binary Risk vs No-Risk classification of load lifting activities using features extracted from sEMG trapezius muscle | ONLINE |

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| | | | Paolo Gargiulo | | |
| 25 | 210 | SP | Marius Dan Zbancioc and Silvia Monica Feraru | Automatic Recognition of Siren Sound in Traffic | ONLINE |
| 26 | 236 | SP | Hrisca-Eva Oana-Diana | Phase Lag Index in a EEG Based Brain Computer Interface Paradigm: A Comparative Analysis on Three Motor Imagery Datasets | ONLINE |

SS1 - Health Technology Assessment and Economic Issues in Medical Devices; Moderators: *Vladimir ROGALEWICZ & Vojtech KAMENSKY*

THURSDAY, 9 November, 11:00 – 13:00, Room 301

| | | | | | |
|---|-----|-----|--|---|---------------|
| 1 | 47 | SS1 | Petra Hospodkova, Jolana Horejsi, Eliska Friebova, Vladimir Rogalewicz and Barbora Maskova | Value Proposition Concept for a Medical Device - Pilot Study STERLINK (Plasma Sterilizer) | ONSITE |
| 2 | 54 | SS1 | Jeannette Plechacova, Petra Hospodkova, Miroslav Bartak and Vladimir Rogalewicz | International comparison of cost of medical interventions in European Union: a model study for cataract surgery | ONSITE |
| 3 | 150 | SS1 | Martina Homolkova and Vojtech Kamensky | Costs and effects of treatment of biceps long head tendon injury | ONSITE |
| 4 | 247 | SS1 | Ivana Kubatova and Vladimir Rogalewicz | Health Technology Assessment: Current state of access to medical device outcomes | ONLINE |
| 5 | 24 | SS1 | Marija Gorelova, Zuzana Slemrova, Petra Hospodkova and Vladimir Rogalewicz | Early stage health technology assessment: still unknown helper of medical device manufacturers | ONLINE |

SS2 - Big Data and Models for Better Health; Moderators: *Ales TICHOPAD & Gleb DONIN*

THURSDAY, 9 November, 11:00 – 13:00, Room 301 (after SS1)

| | | | | | |
|---|-----|-----|---|--|---------------|
| 1 | 67 | SS2 | Ales Tichopad, Gleb Donin and Ondrej Klempir | Identifying Hidden Patterns from Health Administrative Claims by means of "HAC2Vec" Embedding | ONSITE |
| 2 | 92 | SS2 | Gleb Donin | Tracing Real-World Patient Pathway by Harnessing Healthcare Administrative Claims | ONSITE |
| 3 | 127 | SS2 | Marian Rybář | Nation-wide benchmarking of healthcare indicators: From inferential statistics to dashboard cards | ONSITE |
| 4 | 145 | SS2 | Martina Holá, Ondřej Gajdoš, Vojtěch Kamenský, Karolína Kubincová | Cost-effectiveness analysis of multiple sclerosis treatment approaches | ONSITE |
| 5 | 147 | SS2 | Karla Mothejlová, Aleš Tichopád, Gleb Donin, Jan Broulím | Legal and procedural data anonymisation framework of the Faculty of Biomedical Engineering, Czech Technical University | ONSITE |

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| 6 | 196 | SS2 | Vojtěch Kamenský, Gleb Donin, Karla Mothejlová, Ondřej Gajdoš | An economic model of the impact of diseases associated with HPV infection. | ONSITE |
|---|-----|-----|---|--|---------------|

SS3 - Determining the Value of Emotional and Behavioural Characteristics by Processing the Biosignals of the Human Body

Moderators: Titi PARASCHIV, Felix ADOCHIEI; THURSDAY, 9 November, 14:30 – 16:30, Room 301

| | | | | | |
|---|-----|-----|---|--|---------------|
| 1 | 175 | SS3 | Radu Ciucu, Ioana-Raluca Adochiei, Florin Argatu, Serban Teodor Nicolescu, Gladiola Petroiu and Felix Constantin Adochiei | Enhancing Super-Resolution Microscopy through a Synergistic Approach with Generative Machine Learning Models | ONSITE |
| 2 | 180 | SS3 | Titi Paraschiv, Cosmin Banica, Felix Constantin Adochiei, Paraschiv Ruxandra, Serban Teodor Nicolescu and Andrei Ignat | Validation of the Anxiety Assessment Method Employing the g.tec Unicorn Hybrid Black alongside Psychological Testing | ONSITE |
| 3 | 219 | SS3 | Felix Constantin Adochiei, Paraschiv Ruxandra, Cosmin Banica, Ionut Manea, Mihai Tutoveanu and Narcis Adochiei | Investigating Unique EEG Patterns Related to Depression | ONSITE |
| 4 | 224 | SS3 | Cosmin Banica, Paraschiv Ruxandra, Titi Paraschiv, Oana-Isabela Stirbu, Felix Constantin Adochiei and Laura Elena Radu | A Study on the Correlation Between EEG Wave Patterns and Conscientiousness | ONSITE |
| 5 | 239 | SS3 | Ioana-Raluca Adochiei, Paraschiv Ruxandra, Gladiola G. Petroiu, Alina Sultana, Stefana Duta and Felix Constantin Adochiei | Exploring EEG Patterns as Indicators of Stress: A Comprehensive Study | ONSITE |

SS4 - Design of Devices and Methods for Biomedical Practice; Moderators: Martin ROZANEK, Petr KUDRNA

THURSDAY, 9 November, 14:30 – 16:30, Room 301 (after SS3)

| | | | | | |
|---|-----|-----|--|--|---------------|
| 1 | 197 | MD | Leos Tejkl, Zuzana Petrova, Petr Kudrna and Jakub Rafl | Mechanical blender control for closed-loop oxygenation feedback control systems | ONSITE |
| 2 | 211 | MD | Valeriia Trukhan, Lenka Horakova, Josef Skola and Martin Rozanek | The effect of high-frequency artifacts in arterial blood pressure waveforms on pressure reactivity index | ONSITE |
| 3 | 231 | SS4 | Zdenek Kukla and Roman Matejka | Pneumatic Driven Pulsatile Perfusion Bioreactor for Tissue Engineered Vascular Replacements | ONSITE |
| 4 | 232 | SS4 | Jana Matejkova, Frantisek Zima, Monika Supova and Roman Matejka | Polycaprolactone Nanofibrous Scaffolds as a Material for Vascular Replacements | ONSITE |
| 5 | 233 | SS4 | Roman Matějka, Denisa Kanokova, Monika Supova and Jana Matejkova | Vascular Grafts Derived from Decellularized Tissues Modified with 3D Bioprinting | ONSITE |
| 6 | 234 | SS4 | Denisa Kaňoková, Jana Matějková, Monika Šupová and Roman Matějka | Semi-Automated Collagen Bioink Preparation and Influence on its pH and Resulting 3D Bioprint Quality | ONSITE |

| SS5 - Harnessing IoT Innovations for the Future of Healthcare; Moderators: SERİTAN & ADOCHIEI & ENACHE | | | | | |
|---|-----|-----|---|--|---------------|
| THURSDAY, 9 November, 16:30 – 18:30, Room 303 (after TM) | | | | | |
| 1 | 114 | SS5 | Ionuț Manea, Ștefana Duță, Laura Elena Radu and Felix Constantin Adochiei | Automated Assessment of Hospital Waste Bin Fill Ratios: A Novel AI-driven Approach for Enhanced Waste Management and Infection Control | ONSITE |
| 2 | 117 | SS5 | Laura Elena Radu, Ștefana Duță, Ionuț Manea and Ioana Raluca Adochiei | Towards Sustainable Healthcare: Development of an Integrated Waste Management Application for Hospital Environments | ONSITE |
| 3 | 168 | SS5 | Andreea Manea, Florin Argatu, George Seritan, Bogdan-Adrian Enache, Ioana-Raluca Adochiei and Felix Constantin Adochiei | Intelligent Monitoring System for Stress Levels in Critical Infrastructures | ONSITE |
| 4 | 176 | SS5 | Simona Narcisa Arghir, Ioana-Raluca Adochiei, Gladiola G. Petroiu, Oana-Isabela Stirbu, Florin Argatu and Felix Constantin Adochiei | Exploring Emotions: Play-Based Interventions for Children with Autism Spectrum Disorders | ONSITE |
| 5 | 86 | SS5 | Elena-Valentina Serbanescu, George-Calin Seritan and Bogdan-Adrian Enache | Digital stethoscope with signal processing capabilities for IoMT applications | ONLINE |

| SS6 / WS - Human-Machine Interfaces based on Gaze Detection; Moderators: BOZOMITU & BONTEANU | | | | | |
|---|--|----------|---|---|---------------------------|
| FRIDAY, 10 November, 15:40-17:40, Room 301 (Biomechanics (II) follows) | | | | | |
| | | SS6 / WS | <i>Radu-Gabriel BOZOMITU, Gabriel BONTEANU,</i> | This workshop will be focused on implementations of gaze detection algorithms in Python (AI based and non AI based) as well as demonstrations of real-time operation of eye tracking systems. | ONSITE, 30 minutes |

| Telemedicine, e/p/m-health - TM ; Moderators: Sorin Pușcoci, Sorin Soviany | | | | | |
|---|-----|----|---|--|---------------|
| THURSDAY, 9 November, 16:30 – 18:30, Room 303 | | | | | |
| 1 | 91 | TM | Sorin Soviany, Cristina Gheorghe, Elena Paraschiv and Ovidiu Bica | A Behavioral Recognition Method with Data Fusion and Supervised Learning for Tele-assistance Systems | ONSITE |
| 2 | 78 | TM | Minwir Al-Shammari | Knowledge-enabled CRM System for e-Health Services in a Developing Country: The Case of Bahrain | ONLINE |
| 3 | 187 | TM | Helena Hahn, Zehra Zaidi, Abdulgafoor Bachani and James West | Sensors and Devices Integrated into Telerehabilitation Interventions – a Review | ONLINE |

Obs.: The implicit presentation manner is ONLINE and ORAL (10 minutes + 2 min. discussion); “POSTER” means a 5 minutes presentation (+1 minute discussion), online or in person. The ONSITE presentations are notified in the above table.