



IFMBE



SPRINGER NATURE

# Conference Program



## CMBE BIH

International Conference on  
Medical and Biological Engineering

in Bosnia and Herzegovina,  
Mostar, 21. – 24. April, 2021.

Organised by



MEDICINSKI FAKULTET  
BANJA LUKA

*Stay focused.*

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## **WEDNESDAY, April 21<sup>st</sup> 2021**

**Arrival of the participant and guests to Mostar. Free time – sightseeing.**

Welcome to the **4<sup>th</sup> International Conference on Medical and Biological Engineering**. We are committed to delivering event that will enable you broaden your horizons and unlock opportunities for future collaborations.

The safety and wellbeing of our participants, exhibitors, visitors and staff is of paramount importance to us as we look ahead to the 4th edition of the CMBEBIH. The implementation of enhanced measures **IN VENUE** will provide you with the assurance and confidence that our event has health and safety as our number one priority.

### **IN VENUE MEASURES TAKEN:**

- Venue sanitization and hygiene
- Physical distancing and crowd control
- Hand sanitizers
- Temperature checks
- Face masks

*\*Organizers will adapt the health and safety measures according to the epidemiological situation applied during the time of event!*

**\*IMPORTANT NOTE: Program applies for In Venue and ONLINE participants. The whole program will be broadcasted online. More information will be available via conference webpage: [www.cmbebih.com](http://www.cmbebih.com) and Social media accounts [@cmbebih](https://www.instagram.com/cmbebih).**

**19:00 – 23:00 Welcome Cocktail (only with Invitations)**

## **THURSDAY, April 22<sup>nd</sup> 2021**

**08:00 - 10:00 Registration**

**09:45 - 10:00 Media Press Conference, CONFERENCE LOBBY**

**10:00 - 11:00 Opening Ceremony, AMPHITHEATRE**

Addressing by:

1. **Ankica Gudeljević** – *Ministry of Civil Affairs of Bosnia and Herzegovina*
2. **Zoran Tomić** - *Rector of University of Mostar*
3. **Shankar Krishnan** – *President of International Federation for Medical and Biological Engineering (IFMBE)*
4. **Timo Jamsa** – *President of European Alliance of Medical and Biological Engineering and Science (EAMBES)*
5. **Adriana Velazquez** – *Team Lead Medical Devices and In Vitro diagnostics WHO Global Office*
6. **Sebastian Dendorfer** – *European Society of Engineering and Medicine (ESEM) Board Member, OTH Regensburg, Germany*
7. **Monika Tomić** – *Dean of Faculty of Pharmacy Mostar, University of Mostar*
8. **Fahir Bečić** – *Dean of Faculty of Pharmacy Sarajevo, University of Sarajevo*
9. **Ranko Škrbić** – *Dean of Medical Faculty Banja Luka, University of Banja Luka*
10. **Almir Badnjević** – *Chair of the International Conference on Medical and Biological Engineering (CMBEBIH 2021), Bosnia and Herzegovina*

**11:00-11:15 Break (Online + in venue Sponsors video)**

**11:15 - 12:45 Plenary Lectures I, AMPHITHEATRE**

1. **Ivan Đikić, Ph.D.** - *TBD*
2. **Thomas Penzel, Ph.D.** – *TBD*
3. **Anne Humeau - Heurtier, Ph.D.** – *TBD*

**12:45 - 14:00 Lunch Break**

## **14:00 - 16:00 Plenary Session I, Room I**

### **BIOMEDICAL SIGNAL PROCESSING**

#### Session Chairs:

S1-1: Lulzana Shabani, Teuta Shabani-Leka, Mimoza Bafqari-Bakiji, Ibadete Denjalli, Sanije Berisha - *Effect of seasonal changes on serum vitamin D concentration*

S1-2: Abdulhamit Subasi, Emine Yaman - *Diagnosis of Neuromuscular Disorders using TQWT and Random Subspace Ensemble Classifier*

S1-3: Magdalena Krbot Skoric, Ivan Adamec, Mario Cifrek, Mario Habek - *Analysis of autonomic nervous system biosignals*

S1-4: Ajdin Fejzić, Amina Tihak, Dusanka Boskovic, Orhan Lepara - *Evaluation of vectorcardiogram perspectives in education and clinical practice*

S1-5: Eva Rossi, Cosimo Aliani, Piergiorgio Francia, Roberto Anichini, Leonardo Bocchi - *An improved model for the assessment of cutaneous microcirculation in type 1 diabetes*

S1-6: Sara Deumić, Neira Crncevic, Ivana Zolota - *Respiratory System Dynamical Mechanical Properties: Modeling in Time and Frequency Domain*

S1-7: Dženan Kovačić, Dado Latinović, Hannah Abigail Boone - *Simulating Passage and Absorption of Bolus with an Emphasis on the Small Intestine Using a Multi-Component Model*

S1-8: Tijana Cvjetković, Medina Cajo, Ismet Fatih Cancar, Adna Colak, Nejra Cenanovic, Emira Direk, Selma Delic - *Detection of asthma inflammatory phenotypes using Artificial Neural Network*

## **14:00 - 16:00 Plenary Session II, Room 2**

### **BIOMECHANICS, BIOSENSORS AND BIOINSTRUMENTATION**

#### Session Chairs:

S2-1: Emil Valchinov, Konstantinos Rotas, Athanasios Antoniou, Aris Dermitzakis, NICOLAS PALLIKARAKIS - *Development of a reliable spiroximeter for Covid-19 patients' telemonitoring*

S2-2: Gregor Nikolić, Andraž Stožer, Iztok Kramberger - *Development of a Portable Device for Urodynamic Data Acquisition Suitable for Home Use*

S2-3: Zlata Jelacic - *Comparison between different prototypes of above-knee prosthesis*

S2-4: Antonio Stanešić, Željka Lučev Vasić, Yueming Gao, Min Du, Mario Cifrek - *Integrated Intrabody Communication Node based on OOK modulation*

S2-5: Alma Šećerbegović, Mustafa Spahić, Amir Hasanbašić, Vedad Mešić, Haris Hadžić, Aljo Mujčić - *Wearable sensor for home-based biofeedback therapy for migraine*

S2-6: Amir Kajmakovic, Amna Kapić, Selma Jusufović, Tanja Jovičić, Neira Jelačić, Muamera Jahić - *The analysis of biochemical markers for the diagnosis of an acute myocardial infarction using Artificial Neural Network*

S2-7: Ines Musa Trolic, Stjepan Spalj, Sven Karlovic, Goran Bosanac - *Influence of probiotic bacteria on mechanical properties of nickel-titanium alloys used in orthodontics*

S2-8: Iman Alihodzic, Selena Hadžić, Anja Trkulja - *Immunosensors: Recent Advances and Applications*

### **14:00 - 16:00 Plenary Session III, Room 3**

#### **ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING IN HEALTHCARE I**

##### Session Chairs:

S3-1: Emina Imamovic, Amar Deumić, Abdulrahman Khouly, Kursat Talha Pisil, Elida Avdic, Mirsada Hukic, SANJA JAKOVAC, Monia Avdic Ibrisimovic- *Prediction of multi-drug resistance in Escherichia coli using machine learning algorithms*

S3-2: Abdulhamit Subasi, Emir Kremic, Shahad Algebsani, Jawaher Almaasrani, Wafa Alghamdi- *Intrusion Detection in Smart Healthcare Using Bagging Ensemble Classifier*

S3-3: Lejla Habibović, Azra Hamidović, Nihada Habibović, Dženana Hadžić, Neira Halilović, Samila Halilović- *A machine learning approach to predict the sepsis status: Analyzing the connection between relevant laboratory values and other physiological measurements obtained in intensive care unit*

S3-4: Merima Bukva, Ajla Bešlija, Lejla Bihorac, Melika Brčkalija, Semira Budimović, Nejra Buljubašić - **Analysis Of Predictive Parameters In Prediction Of The Occurrence Of Myocardial Infarction Using Artificial Neural Networks**

S3-5: Memnuna Hasanovic, Ena Hasković, Alisa Hebibović, Azra Herić, Amila Hodzic, Nura Hodzic - *Application of Neural Network in the Kidney Living Donor Selection Criteria using biomarkers data*

S3-6: Amina Drače, Murveta Duraković, Amel Džafić, Elmedina Džananović, Meliha Džanko, Alma Džubur- *Diagnosis of different types of hyperbilirubinemia using Artificial Neural Network*

### **16:00-16:30 Coffee Break (Sponsor time)**

## **16:30-18:00 Plenary Session IV, Room 1**

### **HEALTH INFORMATICS**

#### Session Chairs:

S4-1: K Praveen Kumar, Neela Harish, R Prasanth Kumar, V Aparna, N Athaf Khanam - *Flex Sensor Based Gesture Controlled Assist device for COVID-19 Patients*

S4-2: Dželila Mehanović, Zerina Masetic, Dino Kečo, Jasmin Kevric - *Comparison of the wavelet denoising methods for denoising of phonocardiogram signal*

S4-3: Izabela Mitreska, Dijana Capeska Bogatinoska, Ninoslav Marina - *Electronic Health Records System for Efficient Healthcare Services*

S4-4: Merhunisa Mahir, Lejla Mahmutović, Klara Lovrić, Amna Lenjinac, Benjamin Mahić, Nerma Mačković - *Diagnosis of Iron-deficiency Anemia using Artificial Neural Network*

S4-5: Ajla Turajlić, Hava Turković, Mevlija Tursunović, Amina Vatreš, Nedžma Vehabović, Minela Viteškić - *Using artificial network for identification of kidney cancer*

## **16:30-18:00 Plenary Session V, Room 2**

### **CLINICAL ENGINEERING AND HEALTH TECHNOLOGY ASSESSMENT**

#### Session Chairs:

S5-1: Lorenzo Mascii, Alessio Luschi, Ernesto Iadanza - *Sentiment Analysis for Performance Evaluation of Maintenance in Healthcare*

S5-2: Tarik Abdukić, Valida Abdagić, Amar Alagić, Anisa Alajbegović, Amra Adžamija Kesten, Lamija Alešević - *Application of Artificial Intelligence Techniques to Predict Renal Function Based on Diagnostic Parameters*

S5-3: Neira Omeragić, Aida Omanović, Minela Omerović, Lejla Osmanagic, Ehlimana Omanovic, Nedzmina Ohran - *Cardiovascular disease risk assessment in patients with metabolic syndrome using artificial neural networks*

S5-4: Amar Deumić, Emina Imamovic, Lejla Pokvic, Almir Badnjevic - *Performance inspection of patient monitors according to the legal metrology framework: Bosnia and Herzegovina case study*

S5-5: Adna Besic, Sead Karakas, Zarema Obradovic, Adisa Musovic, Emilija Hrapovic - *Travel-related epidemiological studies of legionellosis in Federation of Bosnia and Herzegovina*



## 16:30-18:00 Plenary Session VI, Room 3

### PHARMACEUTICAL ENGINEERING I

#### Session Chairs:

S6-1: Mirsada Salihovic, Emin Sofic - *Hydrocephalus: 5-HIAA and HVA in the cerebrospinal fluid*

S6-2: Jasmina Hadžiabdić, Lejla Šejto, Ognjenka Rahić, Amina Tucak, Lamija Hindija, Merima Sirbubalo, Selma Škrbo, Edina Vranic - *Transdermal Patches as Noninvasive Drug Delivery Systems*

S6-3: Aida Sapcanin, Mirsada Salihovic, Selma Korać, Emina Ramić, Belma Pehlivanović, Sacira Mandal - *Calculation of hazard quotient based on the content of heavy metals in different mushrooms*

S6-4: Sacira Mandal - *Association between serum concentrations of free fatty acids with free iron in Type 2 diabetes*

S6-5: Melissa Jones, Corina Ionescu, Daniel Walker, Bozica Kovacevic, Susbin Raj Wagle, Folarin Oluyede, Armin Mooranian, Daniel Brown, Hani Al-Salami - *Bile acid-Cyclodextrin Formulation Design as drug carrier systems for the delivery of Coenzyme Q10: the impact on surface tension*

S6-6: Belma Pehlivanović, Kenan Čaklovica, Aida Sapcanin, Dina Fetahović, Naida Omerović, Nermina Ziga Smajic, Selma Škrbo, Fahir Bečić - *Potentially new synergistic combination of curcumin and rosuvastatin: An in vitro study*

S6-7: Elma Hasković, Sumeja Hadžalić - *Influence of electrolytes on acetylsalicylic acid concentration*

## 17:00-19:00 Sponsor Workshop I, Online + in venue

### FRIDAY, April 23<sup>rd</sup> 2021

09:00 - 10:00 Registration

10:00 - 11:00 Plenary Lectures II, AMPHITHEATRE

1. Adnan Mehonić, Ph.D. – *The future of energy-efficient AI and neuromorphic engineering*
2. Mladen Poluta, Ph.D. – *TBD*

**11:00-12:00 SMART4ALL project session**

*\*SMART4ALL is a H2020 funded project (Grant Agreement No. 872614) that builds capacity amongst European stakeholders via the development of self-sustained, cross-border experiments that transfer knowledge and technology between academia and industry. It targets Customised Low-Energy Computing (CLEC) for CyberPhysical Systems (CPS) and the Internet of Things (IoT) and combines a set of unique characteristics that join together under a common vision different cultures, different policies, different geographical areas and different application domains. The SMART4ALL consortium is led by the University of Peloponnese (Greece) and is composed of 25 partners from Central, South and Eastern Europe. This is informative session for all interested in applying for financial support for their projects.*

**12:00 – 12:15 Coffee break (Sponsor time)**

**12:15 - 14:15 Plenary Session VII, Room 1**

**BIOMATERIALS, MOLECULAR, CELLULAR AND TISSUE ENGINEERING**

Session Chairs:

S7-1: Lejla-Nur Smajović, Ayla Arslan, Furkan Oflaz - *A study of the CaCl<sub>2</sub> induced E. Coli DH5-Alpha transformation by heat shock accompanied by vibration*

S7-2: Pinar Erturk, Sevde Altuntas, Fatih Buyukserin - *Cellular Investigation of Alumina Membrane Coated Titanium Implants on Osseointegration*

S7-3: Almedina Hajrović, Arnisa Alibegović, Emir Šeherčehajić, Adisa Ramić, Berina Hasanefendić - *Detection of hrHPV DNA with simulated HPV16 and HPV18 typing based on real-time PCR*

S7-4: Bozica Kovacevic, Corina Ionescu, Daniel Walker, Susbin Raj Wagle, Melissa Jones, Folarin Oluyede, Armin Mooranian, Daniel Brown, Hani Al-Salami - *Addition of hyperbranched dendrimers to alginate-based hydrogel for biomedical application*

S7-5: Faris Hrvat, Osman Hasanić, Amina Aleta, Amel Spahić, Amra Dzuho, Mirsada Hukic - *Comparison of biofilm category determination using TCP method depending on signal molecule adherence*

S7-6: Aleksandra Vulović, Nenad Filipovic - *Finite Element Analysis of Modified Hip Implant Surfaces*

S7-7: Lejla-Nur Smajović, Dino Pećar, Lana Salihefendic, Altijana Hromic-Jahjefendic, Rijad Konjhodžić - *Genomic Alterations of KRAS and NRAS in B&H Colorectal and Non-small Cell Lung Cancer Patients*

S7-8: Valentina Veselinović, Tijana Adamović, Nataša Trtić, Borut Kosec, Rebeka Rudolf - *Evaluation of thermal conductivity, thermal effusivity and diffusivity of polymethylmethacrylate modified with gold nanoparticles and its influence in oral cavity environment*

## **12:15 - 14:15 Plenary Session VIII, Room 2**

### **PHARMACEUTICAL ENGINEERING II**

#### Session Chairs:

S8-1: Safija Herenda, Edhem Hasković, Denis Hasković, Ena Hasković, Svjetlana Dilber - **Effect of diclofenac and potassium ions on catalase activity**

S8-2: Amila Hajdarević, Miralem Kmetaš, Faris Begović, Merima Duric, Ema Vajzović - **Current trends in cancer immunotherapy**

S8-3: Riana Jaha, Tea Kolak, Hanna Helać, Haris Česir, Emina Sarajlić, Melika Spahić - **Smart drugs mechanisms of action and ethical issues**

S8-4: Azra Ibrahimovic, Dalida Adilovic, Lamija Brković, Nedzla Buco, Amra Hadzagic, Lana Popovic - **Pharmacogenomics: current trends and future perspectives**

S8-5: Mirha Pazalja, Mirsada Salihovic - **Spectrophotometric determination of cysteine based on complex reaction alizarin red with cooper**

S8-6: Sanja Rogic, Miljana Nukic, Zarko Gagic - **Quantitative structure-activity relationship study of DPP-4 enzyme inhibitors as drugs in therapy of type 2 diabetes mellitus**

S8-7: Lamija Hindija, Jasmina Hadžiabdić, Amina Tucak, Merima Sirbubalo, Ognjenka Rahić - **Improving the formulation aspects of or dispersible tablets by co-processed excipients: results of the latest studies**

S8-8: Azra Hamidović, Ena Hasković, Sumeja Muhić, Matej Planinić, Naida Omerović, Selma Škrbo - **Application of in silico methods in pharmacokinetic studies during drug development**

## **12:15 - 14:15 Plenary Session IX, Room 3**

### **CARDIOVASCULAR, RESPIRATORY AND ENDOCRINE SYSTEM ENGINEERING**

#### Session Chairs:

S9-1: Josip Lesko, NIKOLINA OBRADOVIĆ, Vana Turudić - **Incidence of arterial hypertension in patients with obstructive sleep apnea treated at the Mostar Medical Sleep Center**

S9-2: Josip Lesko, Vana Turudić, NIKOLINA OBRADOVIĆ - **Frequency and causes of primary and secondary hyperparathyroidism in patients treated with surgery at the University Clinical Hospital Mostar**

S9-3: Dzejla Zukic, Zećo Nadina, Zametica Rubina, Zilkić Hasiba, Talić Lejla, Čarkadžić Tarik - **Classification of hypertension and assessment of cardiovascular risk using digital data and biochemical parameters**

S9-4: Smiljana Djorovic, Lazar Velicki, Nenad Filipovic - **Finite Element Analysis of Patient-Specific Ascending Aortic Aneurysm**

S9-5: Amar Elezovic, Sandra Cvijić, Alisa Elezović, Saša Pilipović, Jelena Parojčić - **Particle deposition in respiratory tract: where are the limits?**

S9-6: Davor Tomić - **Epidemiologic data of adult native biopsy-proven renal diseases in University Clinical Hospital Mostar**

**14:15 -15:00 Lunch**

**15:00 - 16:00 Plenary Lectures III, AMPHITHEATRE**

1. **Tom Jud, Ph.D.** – *Clinical Engineering Making a Difference Globally in Partnership with WHO 2020-2021:A Review of Best Practices from Digital Health, COVID19 Equipment & Vaccine Support, and More*
2. **Carole C. Casey, Ph.D.** – *COVID-19 Pandemic Driving Biomedical Innovations: Standards, Regulations, and Patient Safety*

**16:00-18:00 Plenary Session X, Room I**

**ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING IN HEALTHCARE II**

Session Chairs:

S10-1: Lejla Habibović, Azra Hamidović, Nihada Habibović, Dženana Hadžić, Neira Halilović, Samila Halilović- **Machine Learning Techniques for Prediction of Psoriatic Arthritis development in Patients with Psoriasis**

S10-2: Emina Gutusic, Amna Foco, Medina Glamoc, Amina Gljiva, Lamija Gudic, Rudaba Dzudzevic, Mirna Djoja - **Laboratory Diagnosis of Viral Infection using Artificial Network**

S10-3: Rijad Serak, Berina Sahinovic, Faruk Sehic, Aisa Sero, Melisa Skrijelj, Ajla Spago - **Using artificial neural networks in diagnostics of Familial combined hyperlipidaemia based on levels of certain blood parameters and risk assessment of developing cardiovascular disease**

S10-4: Aida Begić, Almedina Alibegović, Nejira Aličajić, Amina Alihodžić, Aida Aljović, Naida Bašić, Lejla Bureić - **Machine Learning Techniques for assessment of stress and burnout syndrome in pharmacists**

S10-5: Nejla Odobasic - **Artificial intelligence in type 2 diabetes**

S10-6: Ismar Šahović, Monia Avdic Ibrisimovic, Mirsada Hukic, Zerina Masetic - **A fuzzy model for the risk of urinary tract infections prediction using microscopic and chemical urine analysis**

## **16:00-18:00 Plenary Session XI, Room 2**

### **BIO-MICRO/NANO TECHNOLOGIES I**

#### Session Chairs:

S11-1: Selma Cifric, Lemana Spahić, Dina Osmanovic, Emina Imamovic, Amar Deumić - **Fighting Cancer using Nanoparticles - Diagnosis, Treatment and Monitoring**

S11-2: Merima Sirbubalo, Amina Tucak, Kenan Muhamedagić, Ognjenka Rahić, Ahmet Čekić, Edina Vranic - **Photopolymerization-based technologies for the production of microneedle arrays**

S11-3: Corina Ionescu, Bozica Kovacevic, Daniel Walker, Susbin Raj Wagle, Melissa Jones, Fola Oluyede, Armin Mooranian, Daniel Brown, Hani Al-Salami - **Spray Dried Probucol/Bile Acid Particles for Trans-Tympanic Delivery**

S11-4: Susbin Raj Wagle, Bozica Kovacevic, Corina Ionescu, Daniel Walker, Melissa Jones, Folarin Oluyede, Armin Mooranian, Daniel Brown, Hani Al-Salami - **Humanised bile acid nanocapsules for optimum drug pharmacology**

S11-5: Merima Bukva, Evelina Pulo, Naida Omerović, Selma Škrbo - **Gastric parietal cell regeneration by nano-scaffolding in hypochlorhydria and achlorhydria treatment**

S11-6: Faris Hrvat, Amina Aleta, Amra Dzuho, Osman Hasanić, Lemana Spahić Bećirović - **Artificial Intelligence in Nanotechnology: Recent trends, challenges and future perspectives**

## **16:00-18:00 Plenary Session XII, Room 3**

### **MEDICAL PHYSICS & BIOMEDICAL IMAGING AND RADIATION PROTECTION I**

#### Session Chairs:

S1-1: Saifullah Harith Suradi, Kamarul Amin Abdullah, Nor Ashidi Mat Isa - **Breast Lesions Detection using FADHECAL and Multilevel Otsu Thresholding Segmentation in Digital Mammograms**

S12-2: Adnan Beganović, Samra Stabančić-Dragunić, Senad Odžak, Amra Skopljak-Beganovic, Rahima Jašić, Irmira Sefić-Pašić - **Estimation of effective doses to patients in whole body computed tomography with automatic tube current modulation systems**

S12-3: Taa Awad, Lejla Čiva, Adnan Beganović, Mustafa Busuladžić, Edis Đedović, Sandra Vegar-Zubovic - **Local diagnostic reference levels in emergency computed tomography of the head**

S12-4: Tijana Djukic, Nenad Filipovic - **Lattice Boltzmann simulation of fluid flow between two rotating cylinders and application in biomedicine**

S12-5: Igor Saveljic, Slavica Macuzic Saveljic, Nenad Filipovic - **Influence of random vibration on semicircular canals during exposure to whole body vibrations**

**16:00-18:00 Sponsor Workshop II, Online + in venue**

**20:00 – 00:00 Gala dinner** (only for registered Members, Non-Members and special Invitations)

**SATURDAY, April 24<sup>th</sup> 2021**

**10:00 - 12:15 Plenary Session XIII, AMPHITHEATRE**

**COVID - 19 RELATED RESEARCH**

Session Chairs:

S13-1: Merima Bukva, Minela Islamović, Selma Jusufović, Enisa Njemčević, Neven Meseldžić, Tamer Bego - **The Most Significant Biomarkers and Specific Antibodies for the Early Diagnosis and Monitoring in COVID-19 Patients**

S13-2: Karaböce Baki, Ahmet Baş, Ahsen Aydın Büyük, Mihli Nur Bülün, Kadir Ak - **Investigations of Degradation of Virus Spread by Physical Techniques**

S13-3: Evelina Pulo, Tarik Abdukić, Matej Planinić, Faruk Sehic, Neven Mesledzic, Tamer Bego - **A Review of Novel Methods For Diagnosing COVID-19**

S13-4: Evelina Pulo, Belmina Pramenković, Adna Rakovac, Ines Rončević, Rasema Ramić, Džejna Prasko - **Machine Learning Techniques for predicting outcomes of COVID-19 for patients with preexisting chronic diseases**

S13-5: Ines Rončević, Valida Abdagić, Amar Kolašinac, Denisa Tahirović, Indira Zuko, Tamer Bego - **Genetic predisposition– impact on the COVID-19 infection severity**

S13-6: Zejneba Jassin - **COVID-19 diagnostic approaches: an overview**

**S13-7: Faris Hrvat, Amina Aleta, Amra Dzuho, Osman Hasanić, Lemana Spahić Bećirović,-  
First report on public opinion regarding COVID-19 vaccination in Bosnia and Herzegovina**

**S13-8: Isak Karabegović, Ermina Husak, Safet Isić, Lejla Banjanović-Mehmedović, Almir Badnjević -  
Implementation of service robots for space disinfection in medical institutions:  
a review of control of corona virus infection**

## **10:00 - 12:15 Plenary Session XIV, Room 1**

### **BIO-MICRO/NANO TECHNOLOGIES II**

#### Session Chairs:

**S13-1: Naida Omerović, Selma Škrbo, Edina Vranic - Tolerance assays performed in animal models during the evaluation of nanoparticles for ocular drug delivery**

**S14-2: Nevena Milivojević, Dalibor Nikolić, Dragana Šeklić, Živana Jovanović, Marko Živanović, Nenad Filipović - Development of Microfluidic Lab-on-Chip System for Cultivation of Cells and Tissues**

**S14-3: Katarina Virijevec, Jelena Grujić, Mihajlo Kokanović, Dalibor Nikolić, Marko Živanović, Nenad Filipović - Electrospinning and electrospun nanofibrous materials – promising scaffolds in tissue engineering**

**S14-4: Naida Mirvic, Edina Vranic, Jasmina Hadziabdic, Alisa Elezovic, Lamija Hindija - The application of nanotechnology in constructing scaffolds for bone tissue engineering**

**S14-5: Ermina Krndzija, Amina Stambolić, Enisa Omanović-Miklićanin - Silver Nanoparticles Biosynthesis from Cinnamon (Cinnamomum verum) and Cloves (Syzygium aromaticum)**

## **10:00 - 12:15 Plenary Session XV, Room 2**

### **MEDICAL PHYSICS & BIOMEDICAL IMAGING AND RADIATION PROTECTION II**

#### Session Chairs:

**S15-1: Eleonora Tiribilli, Ernesto Iadanza, Cosimo Lorenzetto, Leonardo Manetti, Leonardo Bocchi - A Novel Implementation of Road Mapping from Digital Subtraction Angiography Images**

**S15-2: Edis Đedović, Azra Gazibegović-Busuladžić, Mustafa Busuladžić- How differently generated clinical tasks affect the observer performances in CT images analysis**

S15-3: Hanka Bečirović, Suad Kunosic, Minela Halilović, Ivan Lasić, Stipe Galić, Jasmina Bajrović- **Radiation exposure of patients in mammography: an overview of the 15-year practice**

S15-4: Amra Skopljak-Beganovic, Lejla Čiva, Edis Đedović, Selma Zulić Hrelja, Azra Gazibegović-Busuladžić, Adnan Beganović - **Evaluation of the effectiveness of protective aprons in the primary and scattered radiation X-ray beam**

S15-5: Amra Skopljak-Beganovic, Lejla Čiva, Rahima Jašić, Branka Metlić, Alma Pašić-Alić, Davorin Samek- **Use of a smaller size phantom when measuring scatter radiation in diagnostic and interventional radiology**

### **10:30 - 12:00 Plenary Session XVI, Room 3**

#### **PHARMACEUTICAL ENGINEERING III**

##### Session Chairs:

S16-1: Mediha Salić, Nejra Samardžić, Nejla Selmanović, Irma Sinanović, Muhamed Sirćo, Belma Suljević - **Machine Learning Techniques for predicting breast cancer based on biomarkers**

S16-2: Irma Mureškić, Božana Jevđenić, Kanita Muhamedagić, Anđelka Račić, Biljana Gataric, Nataša Bubić Pajić- **Evaluation of Tablet Splitting Methods: A Case Study of Propranolol**

S16-3: Amila Suljić, Ines Konjević, Lamija Smaka, Saadet Leyla Suleymanoglu, Muamera Subašić, Nermina Sofić- **Machine Learning Techniques for prediction of liver fibrosis based on biomarkers**

S16-4: Dženita Redžić, Alisa Elezović - **Effects of microencapsulation on the release and permeation of active substances from topical preparations**

S16-5: Indira Zuko, Denisa Tahirović, Anisa Tandir, Izudin Ugljanin, Andrea Šumić, Hana Turković - **Assessment of parameters for the diagnosis of insulin resistance using artificial neural network**

S16-6: Minela Dacić, Alija Uzunović, Saša Pilipović, Larisa Alagić-Džambić, Kemal Durić - **RP-HPLC determination of lipophilicity in series of corticosteroids**

S16-7: Alija Uzunović, Minela Dacić, Saša Pilipović, Larisa Alagić-Džambić, Kemal Durić, Huriya Džudžević-Čančar - **In vitro evaluation of three brands of salicylic acid plasters from Bosnian markets**

S16-8: Srđan Lučić, Lejla Gurbeta, Ervina Bečić, Almir Badnjević - **Health sector pricing and financing models: challenges and pharmacoeconomic trends in Bosnia and Herzegovina**

### **10:30 - 12:00 Plenary Session XVII, Room 4**



## **ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING IN HEALTHCARE III**

### Session Chairs:

S17-1: Amina Korić, Božana Lauš, Lejla Kruško, Nejra Krekić, Nermana Kubat, Amina Lelo - **Application of Artificial Intelligence Techniques to Predict Effects of Cigarette Smoking on Hematological Parameters and Attributable Diseases**

S17-2: Mubina Hodzic, Lamija Huseinspahic, Lejla Husovic, Emina Ikanovic, Minela Islamovic, Amina Isovica - **Diagnosis of Hyperthyroidism using Artificial Neural Networks**

S17-3: Amila Pajević, Nejra Pašalić, Nejra Piljug, Adis Pinjić, Matej Planinić, Amina Pojata - **Using artificial intelligence in prediction of osteoporosis risk in patients**

S17-4: Sumeja Muhić, Amina Mujagić, Amra Mujić, Lejla Mehić, Almedina Mujčinović, Sabina Murto - **Machine Learning Techniques for Risk Assessment and Diagnosis of Diabetes mellitus**

S17-5: Amel Spahić, Zerina Masetic, Irma Mahmutović-Dizdarević, Monia Avdic Ibrisimovic - **Utilization of Machine Learning Techniques for Identification of Escherichia Coli Based on Results of Bauer Kirby Antibiotic Susceptibility Testing**

S17-6: Muhamed Karajic, Edin Begic, Emina Hrvat, Lejla Gurbeta Pokvić - **Application of Artificial Intelligence tools in classification and diagnosis of heart disease: general review**

**12:00-12:30 Closing Ceremony, CONFERENCE HALL**