



IFMBE



SPRINGER NATURE

Conference Program



CMBEBIH

International Conference on
Medical and Biological Engineering

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

Organised by



MEDICINSKI FAKULTET
BANJA LUKA

Stay focused.



PROGRAM AT GLANCE

WEDNESDAY, April 21st 2021.....	4
19:00 – 23:00 Welcome Cocktail (<i>only with Invitations</i>)	4
THURSDAY, April 22nd 2021	5
08:00 - 10:00 Registration.....	5
09:45 - 10:00 Media Press Conference, CONFERENCE LOBBY.....	5
10:00 - 11:00 Opening Ceremony, AMPHITHEATRE.....	5
11:00-11:15 Break (Online + in venue Sponsors video).....	5
11:15 - 12:45 Plenary Lectures I, AMPHITHEATRE.....	5
12:45 - 14:00 Lunch Break	5
14:00 - 16:00 Plenary Session I, Room I	6
BIOMEDICAL SIGNAL PROCESSING.....	6
14:00 - 16:00 Plenary Session II, Room 2	6
BIOMECHANICS, BIOSENSORS AND BIOINSTRUMENTATION	6
14:00 - 16:00 Plenary Session III, Room 3	7
ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING IN HEALTHCARE I	7
16:00-16:30 Coffee Break (Sponsor time).....	8
16:30-18:00 Plenary Session IV, Room 1	8
HEALTH INFORMATICS.....	8
16:30-18:00 Plenary Session V, Room 2	8
CLINICAL ENGINEERING AND HEALTH TECHNOLOGY ASSESSMENT.....	8
16:30-18:00 Plenary Session VI, Room 3.....	9
PHARMACEUTICAL ENGINEERING I.....	9
17:00-19:00 Sponsor Workshop I, Online + in venue	9
FRIDAY, April 23rd 2021.....	10
09:00 - 10:00 Registration.....	10
10:00 - 11:00 Plenary Lectures II, AMPHITHEATRE.....	10
11:00-12:00 SMART4ALL project session	10
12:00 – 12:15 Coffee break (Sponsor time).....	10
12:15 - 14:15 Plenary Session VII, Room 1.....	10
BIOMATERIALS, MOLECULAR, CELLULAR AND TISSUE ENGINEERING	10
12:15 - 14:15 Plenary Session VIII, Room 2	11
PHARMACEUTICAL ENGINEERING II	11
12:15 - 14:15 Plenary Session IX, Room 3.....	12
CARDIOVASCULAR, RESPIRATORY AND ENDOCRINE SYSTEM ENGINEERING	12

14:15 -15:00 Lunch.....	12
15:00 - 16:00 Plenary Lectures III, AMPHITHEATRE	12
16:00-18:00 Plenary Session X, Room I.....	13
ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING IN HEALTHCARE II.....	13
16:00-18:00 Plenary Session XI, Room 2.....	13
BIO-MICRO/NANO TECHNOLOGIES I	13
16:00-18:00 Plenary Session XII, Room 3.....	14
MEDICAL PHYSICS & BIOMEDICAL IMAGING AND RADIATION PROTECTION I	14
20:00 – 00:00 Gala dinner (only for registered Members, Non-Members and special Invitations)...	14
SATURDAY, April 24th 2021	15
10:00 - 12:15 Plenary Session XIII, AMPHITHEATRE.....	15
COVID - 19 RELATED RESEARCH.....	15
10:00 - 12:15 Plenary Session XIV, Room 1	15
BIO-MICRO/NANO TECHNOLOGIES II.....	15
10:00 - 12:15 Plenary Session XV, Room 2	16
MEDICAL PHYSICS & BIOMEDICAL IMAGING AND RADIATION PROTECTION II	16
10:30 - 12:00 Plenary Session XVI, Room 3	17
PHARMACEUTICAL ENGINEERING III.....	17
10:30 - 12:00 Plenary Session XVII, Room 4.....	17
ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING IN HEALTHCARE III.....	17
12:00-12:30 Closing Ceremony, CONFERENCE HALL	18

WEDNESDAY, April 21st 2021

~~Arrival of the participant and guests to Mostar. Free time — sightseeing.~~

Welcome to the **4th 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.



~~19:00 — 23:00 Welcome Cocktail (only with Invitations)~~

THURSDAY, April 22nd 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 Gudeljevic** – *Ministry of Civil Affairs of Bosnia and Herzegovina*
2. **Zoran Tomic** - *Rector of University of Mostar*
3. **Ratko Magjarević** – *President of International Federation for Medical and Biological Engineering (IFMBE)*
4. **Leandro Pecchia** – *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. **Monika Tomic** – *Dean of Faculty of Pharmacy Mostar, University of Mostar*
7. **Fahir Becic** – *Dean of Faculty of Pharmacy Sarajevo, University of Sarajevo*
8. **Ranko Škrbic** – *Dean of Medical Faculty Banja Luka, University of Banja Luka*
9. **Almir Badnjevic** – *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 - 13:15 Plenary Lectures I, ~~AMPHITHEATRE~~

1. **Ivan Djikic, Ph.D.** – *Science will defeat COVID-19*
2. **Thomas Penzel, Ph.D.** – *The future of sleep medicine technologies*
3. **Anne Humeau - Heurtier, Ph.D.** – *Entropy-based measures for the biomedical field*
4. **Prof. dr. Asim Kurjak** - *Amazing power of fetal brain – what did we learn from 4D ultrasonic studies*

13:15 - 14:00 Lunch Break

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

BIOMEDICAL SIGNAL PROCESSING

Session Chairs: Magdalena Krbot Skoric

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 Fejzic, 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 Deumic, Neira Crncevic, Ivana Zolota - *Respiratory System Dynamical Mechanical Properties: Modeling in Time and Frequency Domain*

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

S1-8: Tijana Cvjetkovic, Medina Cajo, Ismet Fatih Cancar, Adna Colak, Nejra Cenanic, 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: Emil Valchinov

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

S2-2: Gregor Nikolic, Andraz Stozer, 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, Zeljka Lucev Vasic, Yueming Gao, Min Du, Mario Cifrek - ***Integrated Intra-body Communication Node based on OOK modulation***

S2-5: Alma Šecerbegovic, Mustafa Spahic, Amir Hasanbašić, Vedad Mešić, Haris Hadzic, Aljo Mujcic - ***Wearable sensor for home-based biofeedback therapy for migraine***

S2-6: Amir Kajmakovic, Amna Kapic, Selma Jusufovic, Tanja Jovicic, Neira Jelacic, Muamera Jahic - ***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 Hadzic, 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: Emina Imamović

S3-1: Emina Imamovic, Amar Deumic, 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: Sebahattin Babur, Mehmet Recep Bozkurt, Sanam Moghaddamnia - ***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 Brckalija, Semira Budimovic, Nejra Buljubašić - ***Analysis Of Predictive Parameters In Prediction Of The Occurrence Of Myocardial Infarction Using Artificial Neural Networks***

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

S3-6: Amina Drace, Murveta Durakovic, Amel Dzafic, Elmedina Džananovic, 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: Zerina Mašetić

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: Dzelila Mehanovic, Zerina Masetic, Dino Keco, 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 Mahmutovic, Klara Lovric, Amna Lenjinac, Benjamin Mahic, Nerma Mackovic - *Diagnosis of Iron-deficiency Anemia using Artificial Neural Network*

S4-5: Ajla Turajlic, Hava Turkovic, Mevlija Tursunovic, Amina Vatreš, Nedzma Vehabovic, Minela Viteškic - *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: Leonardo Bocchi

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

S5-2: Tarik Abdukic, Valida Abdagic, Amar Alagic, Anisa Alajbegovic, Amra Adzamija Kesten, Lamija Alešević - *Application of Artificial Intelligence Techniques to Predict Renal Function Based on Diagnostic Parameters*

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

S5-4: Amar Deumic, 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: Šaćira Mandal

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

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

S6-3: Aida Sapcanin, Mirsada Salihovic, Selma Korac, Emina Ramic, Belma Pehlivanovic, 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 Pehlivanovic, Kenan Caklovica, Aida Sapcanin, Dina Fetahovic, Naida Omerovic, Nermina Ziga Smajic, Selma Škrbo, Fahir Becic - *Potentially new synergistic combination of curcumin and rosuvastatin: An in vitro study*

S6-7: Elma Haskovic, Sumeja Hadzalic - *Influence of electrolytes on acetylsalicylic acid concentration*

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

FRIDAY, April 23rd 2021

09:00 - 10:00 Registration

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

1. **Adnan Mehonic, Ph.D.** – *The future of energy-efficient AI and neuromorphic engineering*
2. **Mladen Poluta, Ph.D.** – *Global Clinical Engineering – The New Normal*

11:00-12:00 SMART4ALL project session

Session chairs: Nikolina Brajović and Christos Antonopoulos

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: Valentina Veselinović

S7-1: Lejla-Nur Smajovic, Ayla Arslan, Furkan Oflaz - *A study of the CaCl₂ 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 Hajrovic, Arnisa Alibegovic, Emir Šehercehajic, Adisa Ramic, Berina Hasanefendic - *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 Hasanic, Amina Aleta, Amel Spahic, Amra Dzuho, Mirsada Hukic - ***Comparison of biofilm category determination using TCP method depending on signal molecule adherence***

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

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

S7-8: Valentina Veselinovic, Tijana Adamovic, Nataša Trtic, 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: Safija Herenda

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

S8-2: Amila Hajdarevic, Miralem Kmetaš, Faris Begovic, Merima Duric, Ema Vajzovic - ***Current trends in cancer immunotherapy***

S8-3: Riana Jaha, Tea Kolak, Hanna Helac, Haris Cesir, Emina Sarajlic, Melika Spahic - ***Smart drugs mechanisms of action and ethical issues***

S8-4: Azra Ibrahimovic, Dalida Adilovic, Lamija Brkovic, Nedzla Buce, 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 Hadziabdic, Amina Tucak, Merima Sirbubalo, Ognjenka Rahic - ***Improving the formulation aspects of or dispersible tablets by co-processed excipients: results of the latest studies***



S8-8: Azra Hamidovic, Ena Haskovic, Sumeja Muhic, Matej Planinic, Naida Omerovic, 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: Smiljana Djorovic

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

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

S9-3: Dzejla Zukic, Zeco Nadina, Zametica Rubina, Zilkic Hasiba, Talic Lejla, Carkadzic 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 Cvijic, Alisa Elezovic, Saša Pilipovic, Jelena Parojcic - **Particle deposition in respiratory tract: where are the limits?**

S9-6: Davor Tomic - **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: Monia Avdic Ibrisimovic

S10-1: Lejla Habibovic, Azra Hamidovic, Nihada Habibovic, Dzenana Hadzic, Neira Halilovic, Samila Halilovic- *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 Begic, Almedina Alibegovic, Nejira Alicajic, Amina Alihodzic, Aida Aljovic, Naida Bašić, Lejla Bureic - **Machine Learning Techniques for assessment of stress and burnout syndrome in pharmacists**

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

S10-6: Ismar Šahovic, 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: Lemana Spahić

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

S11-2: Merima Sirbubalo, Amina Tucak, Kenan Muhamedagic, Ognjenka Rahic, Ahmet Cekic, 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 Probuocol/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 Omerovic, Selma Škrbo - **Gastric parietal cell regeneration by nano-scaffolding in hypochlorhydria and achlorhydria treatment**

S11-6: Faris Hrvat, Amina Aleta, Amra Dzuho, Osman Hasanic, Lemana Spahic Becirovic - **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: Adnan Beganović

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 Beganovic, Samra Stabancic-Dragunic, Senad Odzak, Amra SkopljakBeganovic, Rahima Jašić, Irmina Sefic-Pašić - **Estimation of effective doses to patients in whole body computed tomography with automatic tube current modulation systems**

S12-3: Taa Awad, Lejla Civa, Adnan Beganovic, Mustafa Busuladzic, Edis DJedovic, 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 Invitations)~~

SATURDAY, April 24th 2021

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

COVID - 19 RELATED RESEARCH

Session Chairs: Karaböce Baki

S13-1: Merima Bukva, Minela Islamovic, Selma Jusufovic, Enisa Njemcevic, Neven Meseldzic, 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 Abdukic, Matej Planinic, Faruk Sehic, Neven Mesledzic, Tamer Bego - **A Review of Novel Methods For Diagnosing COVID-19**

S13-4: Evelina Pulo, Belmina Pramenkovic, Adna Rakovac, Ines Roncevic, Rasema Ramic, Dzejna Prasko - **Machine Learning Techniques for predicting outcomes of COVID-19 for patients with preexisting chronic diseases**

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

S13-6: Zejneba Jassin, Amir Heric, Amar Mujkic, Ena Baralic - **COVID-19 diagnostic approaches: an overview**

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

S13-8: Isak Karabegovic, Ermina Husak, Safet Isic, Lejla Banjanovic-Mehmedovic, Almir Badnjevic - **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: Naida Omerović, Edina Vranić

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

S14-2: Nevena Milivojevic, Dalibor Nikolic, Dragana Šeklic, Zivana Jovanovic, Marko Zivanovic, Nenad Filipovic - **Development of Microfluidic Lab-on-Chip System for Cultivation of Cells and Tissues**

S14-3: Katarina Virijevec, Jelena Grujic, Mihajlo Kokanovic, Dalibor Nikolic, Marko Zivanovic, Nenad Filipovic - **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 Stambolic, Enisa Omanovic-Miklicanin - **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: Mustafa Busuladžić

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 DJedovic, Azra Gazibegovic-Busuladzic, Mustafa Busuladzic- **How differently generated clinical tasks affect the observer performances in CT images analysis**

S15-3: Hanka Becirovic, Suad Kunosic, Minela Halilovic, Ivan Lasic, Stipe Galic, Jasmina Bajrovic- **Radiation exposure of patients in mammography: an overview of the 15-year practice**

S15-4: Amra Skopljak-Beganovic, Lejla Civa, Edis DJedovic, Selma Zulic Hrelja, Azra Gazibegovic-Busuladzic, Adnan Beganovic - **Evaluation of the effectiveness of protective aprons in the primary and scattered radiation X-ray beam**

S15-5: Amra Skopljak-Beganovic, Lejla Civa, Rahima Jašić, Branka Metlic, Alma Pašić-Alic, 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: Alisa Elezović

S16-1: Mediha Salic, Nejra Samardzic, Nejla Selmanovic, Irma Sinanovic, Muhamed Sirco, Belma Suljevic - **Machine Learning Techniques for predicting breast cancer based on biomarkers**

S16-2: Irma Mureškic, Bozana Jevdjenic, Kanita Muhamedagic, Andjelka Racic, Biljana Gataric, Nataša Bubic Pajic- **Evaluation of Tablet Splitting Methods: A Case Study of Propranolol**

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

S16-4: Dzenita Redzic, Alisa Elezovic - **Effects of microencapsulation on the release and permeation of active substances from topical preparations**

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

S16-6: Minela Dacic, Alija Uzunovic, Saša Pilipovic, Larisa Alagic-Dzambic, Kemal Duric - **RP-HPLC determination of lipophilicity in series of corticosteroids**

S16-7: Alija Uzunovic, Minela Dacic, Saša Pilipovic, Larisa Alagic-Dzambic, Kemal Duric, Huriya Dzudzevic-Cancar - **In vitro evaluation of three brands of salicylic acid plasters from Bosnian markets**

S16-8: Srdjan Lucic, Lejla Gurbeta, Ervina Becic, Almir Badnjevic - **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: Lejla Gurbeta Pokvić

S17-1: Amina Koric, Bozana Lauš, Lejla Kruško, Nejra Krekic, 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 Pajevic, Nejra Pašalic, Nejra Piljug, Adis Pinjic, Matej Planinic, Amina Pojata - **Using artificial intelligence in prediction of osteoporosis risk in patients**

S17-4: Sumeja Muhic, Amina Mujagic, Amra Mujic, Lejla Mehic, Almedina Mujcinovic, Sabina Murto - **Machine Learning Techniques for Risk Assessment and Diagnosis of Diabetes mellitus**

S17-5: Amel Spahic, Zerina Masetic, Irma Mahmutovic-Dizdarevic, 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 Pokvic - **Application of Artificial Intelligence tools in classification and diagnosis of heart disease: general review**

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