

Conference Program



CMBEBIH

International Conference on
Medical and Biological Engineering

in Bosnia and Herzegovina,
Sarajevo, 16 – 18 March, 2017

Organised by



Pursuing innovation. Shaping the future.

THURSDAY, March 16th 2017

08:00 - 10:00 Registration + Welcome Cocktail

10:00 - 10:45 Opening Ceremony, CONFERENCE HALL

- 1. Ambassador Lars-Gunnar Wigemark and Khaldoun Sinno – Head and Deputy of Head of EU Delegation to Bosnia and Herzegovina and EU Special Representative in Bosnia and Herzegovina**
- 2. Adil Osmanović - Ministry of Civil Affairs of Bosnia and Herzegovina**
- 3. Elmedin Konaković – Prime Minister of Canton Sarajevo**
- 4. Abdulah Skaka – Mayor of the City Sarajevo, Bosnia and Herzegovina**
- 5. Senaid Memić – Mayor of the Municipality Iliča, Bosnia and Herzegovina**
- 6. Kang-Ping Lin – General Secretary of the International Federation for Medical and Biological Engineering (IFMBE), Chung-Yuan Christian University, Taiwan**
- 7. Ratko Magjarević – International Union for Physical and Engineering Sciences in Medicine (IUPESM), University of Zagreb, Croatia**
- 8. Eddie Custovic – Institute of Electrical and Electronics Engineers (IEEE), La Trobe University, Australia**
- 9. Sebastian Dendorfer – European Society of Engineering and Medicine (ESEM) Board Member, OTH Regensburg, Germany**
- 10. Sebija Izetbegović – University Clinical Centre Sarajevo (KCUS), Bosnia and Herzegovina**
- 11. Ranko Škrbić – Medical Faculty Banja Luka, Bosnia and Herzegovina**
- 12. Damir Marjanović – Rector of the International Burch University Sarajevo, Bosnia and Herzegovina**
- 13. Almir Badnjević – Chair of the International Conference on Medical and Biological Engineering (CMBEBIH 2017), Bosnia and Herzegovina**

10:45 - 11:00 Media Press Conference, CONFERENCE LOBBY

10:45 - 12:30 Plenary Lectures I, CONFERENCE HALL

- 1. Ernesto Iadanza, Ph.D. - Biomedical and Clinical Engineers: the key to success is a wide knowledge**
- 2. Ervin Sejdic, Ph.D. –From big data to functional outcomes: Can we use big data to understand functional changes in swallowing, gait and handwriting?**
- 3. Nesrin Hasirci, Ph.D. –Multifunctional Biomaterials and Tissue Engineering Applications**

12:30 - 13:30 Lunch Break, Hotel Hills RESTAURANT by Platinum Sponsors: Oracle and Infostudio doo Sarajevo

13:30 - 15:30 Plenary Session I, Hotel Hall 2

BIOMEDICAL SIGNAL PROCESSING 1

Session Chairs: ***Emir Turajlić, University of Sarajevo (Bosnia and Herzegovina), Radovan Stojanovic, University of Podgorica (Montenegro)***

S1-1: Abdel-Ilah L, Sahinbegovic H. - *Using machine learning tool in classification of breast cancer*

S1-2: Friganovic K, Jovic A, Jozic K, Kukolja D, Cifrek M. - *MULTISAB project: a web platform based on specialized frameworks for heterogeneous biomedical time series analysis - an architectural overview*

S1-3: Omerbegovic M. - *Short - term variations of parameters of heart rate variability in subjects with mild hypertension and normotensive subjects during preoperative period*

S1-4: Sorelli M, Perrella A, Bocchi L. - *Cardiac pulse waves modeling and analysis in laser Doppler perfusion signals of the skin microcirculation*

S1-5: Maras A, Aydin S. - *Discrimination of Psychotic Symptoms from Controls Through Data Mining Methods Based on Emotional Principle Components*

S1-6: Daunoraviciene K, Apanskienė V, Ziziene J, Ovcinikova A, Kizlaitiene R, Sereike I, Kaubrys G, Luksys D, Griskevicius J. - *Differences in temporal gait parameters between multiple sclerosis and healthy people*

S1-7: Turajlic E, Karahodzic V. - *An Adaptive Scheme for X-ray Medical Image Denoising using Artificial Neural Networks and Additive White Gaussian Noise Level Estimation in SVD Domain*

S1-8: Busatlic E, Osmanovic A, Jakupovic A, Nuhic J, Hodzic A. - *Using Neural Networks and Ensemble Techniques based on Decision Trees for Skin Permeability Prediction*

13:30 - 15:30 Plenary Session II, Hotel Hall 3

BIOMEDICAL IMAGING AND IMAGE PROCESSING

Session Chairs: ***Adnan Beganovic, University Clinical Center Sarajevo (Bosnia and Herzegovina), Mario Medvedec, University Hospital Center Zagreb (Croatia)***

S2-1: Ogretmenoglu Ficici C, Erogul O, Telatar Z. - *Fully Automated Brain Tumor Segmentation and Volume Estimation Based on Symmetry Analysis in MR Images*

S2-2: Nasifoglu H, Erogul O, Atac G.K, Ozdemir G. - *Multi-Regional Adaptive Image Compression (AIC) for Hip Fractures in Pelvis Radiography*

S2-3: Frassineti L, Giardini F, Perrella A, Sorelli M, Sacconi L, Bocchi L. - *Evaluation of spatial distribution of skin blood flow using optical imaging*

S2-4: Sahin S, Akata E, Erogul O, Tuncay C, Sahin O, Sanal H.T. - *Computer-assisted diagnosis of osteoarthritis on hip radiographs*

S2-5: Ajanovic Z, Sarac-Hadzihalilovic A, Gojak R. - *Determination of sex by discriminant function analysis of linear diameters in bosnian human skulls*

13:30 - 15:30 Plenary Session III, Hotel Hall 4

BIOSENSORS AND BIOINSTRUMENTATION

Session Chairs: **Shankar Krishnan**, University Boston (USA), **Hurija Dzurdzevic Cancar**, University of Sarajevo (Bosnia and Herzegovina)

S3-1: Ozkul T, Ozkul M.H. - *Eustachian Tube Dysfunction Assessment Through Tympanic Cavity Air Exchange Sensor*

S3-2: Farshi H.T, Frounchi J. - *Design, Simulation and Implementation of a System for Selective Recording from Peripheral nervous system*

S3-3: Pale U, Cifrek M, Krois I, Peharec S. - *Personal electromyographic biofeedback system „MyMyo“*

S3-4: Djordjevic-Kozarov J, Sovilj P, Vujicic V, Mitic D, Simic M, Radenkovic D. - *Experimental verification of EOG signal measurement using the modified digital stochastic measurement method*

15:30-16:00 Coca Cola and Klas Break

16:00-18:00 Plenary Session IV, Hotel Hall 2

BIO-MICRO/NANO TECHNOLOGIES

Session Chairs: **Sefik Suzer**, Bilkent University (Turkey), **Enisa Omanović - Mikličanin**, University of Sarajevo (Bosnia and Herzegovina)

S4-1: Avdihodzic H, Redzovic Z, Halilovic S. - *Application of Artificial Neural Network in modelling of photo-degradation suspension of manganese doped zinc oxide nanoparticles under visible-light irradiation*

S4-2: Fojnica A, Osmanovic A, Tarakcija Dz, Demirovic S. - *Quantification of protein concentration adsorbed on gold nanoparticles using Artificial Neural Network*

S4-3: Dzebic M, Kurikov O, Dobroliubov O, Nava O.C.A. - *Design and Fabrication of a PDMS Microfluidic Device for Titration of Biological Solutions*

S4-4: Devedzic A. - *Beauty of Fine Dots-Detection and treatment of Alzheimer's disease using quantum dots*

S4-5: Lotfi A, Ghavidel-Aghdam E, Narimani-Rad M. - *Effect of chemically-synthesized silver nanoparticles (Ag-Np) on glycemic and lipidemic status in rat model*

S4-6: Maksimovic M, Omanovic-Miklicanin E. - *Towards green nanotechnology: maximizing benefits and minimizing harm*

S4-7: Doric A, Mulaomerovic Dz, Fojnica A, Alispahic B, Halilovic S, Omanovic-Miklicanin E. - *Development of the method for quantification of amino acid adsorbed on nanoparticle surface*

S4-8: Omanovic-Miklicanin E, Husremovic T, Jakupovic A, Omerbasic A. - *Application of biological surface adsorption index approach (BSAI) in characterization of interactions between gold nanoparticles and biomolecules*

16:00-18:00 Plenary Session V, Hotel Hall 3

BIOMECHANICS, ROBOTICS AND MINIMALLY INVASIVE SURGERY

Session Chairs: **Sebastian Dendorfer**, Ostbayerische Technische Hochschule Regensburg (Germany), **Ibrahim Omerhodžić**, University Clinical Center Sarajevo (Bosnia and Herzegovina)

S5-1: Tatlisoz M.M, Canpolat C. - *Mechanical testing strategies for dental implants*

S5-2: Jelacic Z. - *Contact force problem in the rehabilitation robot control design*

S5-3: Aurbach M, Wagner K, Suß F, Dendorfer S. - *Implementation and Validation of Human Kinematics measured using IMUs for Musculoskeletal Simulations by the Evaluation of Joint Reaction Forces*

S5-4: Jungtaubl D, Schmitz P, Gross S, Dendorfer S. - *FEA of the transiliacal internal fixator as an osteosynthesis of pelvic ring fractures*

S5-5: Rupar M, Vucina A, Dedic R, Dindo H. - *Overview of the Development of Hydraulic Above Knee Prostheses*

S5-6: Thomsen L.P, Aliuskeviciene A, Sorensen K, Norgaard C.A, Sorensen P.L, Bolvig E, Signe M, Riddersholm J, Thorgaard P. - *Non-invasive estimation of respiratory depression profiles during robot-assisted laparoscopic surgery using a model-based approach*

S5-7: Mancheva K, Stephanova D.I, Wolf W, Kossev A. *Long-latency intracortical inhibition during unilateral muscle activity*

16:00-18:00 Plenary Session VI, Hotel Hall 4

CARDIOVASCULAR, RESPIRATORY AND ENDOCRINE SYSTEMS ENGINEERING

Session Chairs: *Ervin Sejdić, University of Pittsburgh (USA), Lejla Divović - Mustafić, University Clinical Center Sarajevo (Bosnia and Herzegovina)*

S6-1: Filipovic N, Isailovic V, Milosevic Z, Nikolic D, Saveljic I, Radovic M, Nikolic M, Cirkovic-Andjelkovic B, Themis E, Fotiadis D, Pelosi G, Parodi O. - *Computational modeling of plaque development in the coronary arteries*

S6-2: Filipovic N, Koncar I, Milosevic Z, Davidovic L. - *Computational Vascular Surgery Planning and Predicting for Abdominal Aortic Aneurysm*

S6-3: Barakovic S, Barakovic Husic J, Barakovic F. - *Determination of Probabilistic Neural Network's Accuracy in Context of Cardiac Stress Test*

S6-4: Divanovic H, Mulic Dz, Padalo A, Rastoder E, Pedljak S, Ziga N, Bego T. - *Effects of electrical stimulation as a new method of treating diabetes on animal models*

S6-5: Godinjak A, Velija-Asimi Z, Burekovic A, Kulic M, Gicic S, Serdarevic F. - *Subclinical inflammation: The link between increased cardiovascular risk and subclinical hypothyroidism in postmenopausal women*

17:00-19:00 Industry Workshop I, Hotel Hall 1

Demonstration of Software PlannerVasc and CFDVasc

20:00 – 22:00 BioIRC Serbia Cocktail party - B2B Meeting Point for Invited Guests and Media Representatives at Sky Bar Hotel Hills at 11th Floor (only with Invitations)

21:00 – 02:00 Student Party at the Restoran Mala Pivnica Sarajevo (only for registered participants – students, members and nonmembers)

FRIDAY, March 17th 2017

08:00 - 09:00 Registration

09:00 - 11:30 Plenary Lectures II, CONFERENCE HALL

- 1. Tawab Hamidi – Oracle Business Development Director, Healthcare Division–
*Digital/CX Transformation in Healthcare***
- 2. Sefik Suzer, Ph.D. –*Use of Layer-By-Layer Deposition Technique for Inserting Anti-Bacterial Nanoparticles and Their Characterization by XPS***
- 3. Vesna Maras, Ph.D. –*The importance of genetics in characterization and identification of grapevine varieties***
- 4. Shankar M. Krishnan, Ph.D. – *Innovative Technologies in Emerging Clinical Cardiovascular Applications***

11:30 - 12:00 Book Promotion: “Uvod u nanotehnologiju (engl. Introduction to Nanotechnology) Authors: Enisa Omanović – Mikličanin and Almir Badnjević, CONFERENCE HALL (*will be presented on the local language*)

12:00 – 14:30 Poster session

Poster Chairs: *Ervin Sejdić, University of Pittsburgh (USA), Vesna Maraš, University of Donja Gorica (Montenegro), Ratko Magiarević, University of Zagreb (Croatia), Eddie Custovic, La Trobe University (Australia), Shankar Krishnan, University of Boston (USA), Kang Ping Lin, Chung-Yuan Christian University (Taiwan), Shyh – Hau Wang, National Cheng Kung University (Taiwan)*

P1: People identification using Kinect sensor

Authors: Ramakic A, Toroman A.

P2: Artificial Neural Network: Gas recognition

Authors: Keskic L, Hodzic J, Alispahic B.

P3: A Fuzzy Model to Predict Risk of Urinary Infection

Authors: Avdic-Ibrisimovic M, Karli G, Balkaya H.E, Ibrisimovic M, Hukic M

P4: Conceptual image of heart – path to patient benefit

Authors: Botonjic A, Begic E, Zvizdic D, Begic N.

P5: A Novel Gait Detection Algorithm Based on Wireless Inertial Sensors

Authors: Gao Y, Jiang Z, Ni W, Lucev Vasic Z, Cifrek M, Du M, Va M.I, Pun S.H.

P6: Single-Chip Intrabody Communication Node

Authors: Grilec F, Stanesic A, Lucev Vasic Z, Gao Y, Du M, Cifrek M.

P7: Microneedle-assisted delivery of NSAIDs

Authors: Vranic E, Tucak A, Vrabac Dz, Rahic O, Elezovic A, Hadziabdic J.

P8: Preparation of Nanoemulsions by high-energy and low-energy emulsification methods
Authors: Hadziabdic J, Orman Dz, Elezovic A, Vranic E, Rahic O.

P9: Characterization of NiTi orthodontic archwires characteristic functional properties
Authors: Rudolf R, Ferenc J, Lazic V, Veselinovic V, Tomic S.

P10: Simulation of kinematic behavior of prosthetic devices
Authors: Raspudic V.

P11: Thyroid pathology and platelet functional activity
Authors: Ralchenko I.V, Chepis M.V, Ralchenko E.S.

P12: Trends among neonatologists in decision to ventilate preterm infants with permissive hypercapnia
Authors: Terzic S, Heljic S, Maksic H.

P13: A mathematical model of the effect of metabolic control on joint mobility in young type I diabetic subjects
Authors: Francia P, Perrella A, Sorelli M, Toni S, Piccini B, Sardina G, Gulisano M, Bocchi L.

P14: Basics of mathematical modeling of pulmonary ventilation mechanics and gas exchange
Authors: Popovic N, Naumovic M, Roganovic S.

P15: Testing of the influence of media's pH value on the solubility and partition coefficient of the acetylsalicylic acid
Authors: Knezevic D, Kasagic-Vujanovic I.

P16: The use of ELM and MnM servers for the prediction of RANK function in osteoclast formation
Authors: Alibegovic S, Causevic A, Kulas S, Kranjc T, Marc J, Bego T.

P17: QSAR modeling and structure based virtual screening of new PI3K/mTOR inhibitors as potential anticancer agents
Authors: Oluic J, Nikolic K, Vucicevic J, Gagic Z, Filipic S, Agbaba D.

P18: Career development in Green Biotechnology in B&H: roadblocks and prospects
Authors: Karalija E.

P19: E-health in Bosnia and Herzegovina: exploring the challenges of widespread adoption
Authors: Popovic B, Maksimovic M.

P20: 5-HIAA and HVA in the Coma Cerebri, Hydrocephalus and Tumor Cerebri
Authors: Salihovic M, Sofic E.

P21: Estimation of lipophilicity data for derivatives of alkandiamine-*N,N*'-di-2-(3-cyclohexyl) propanoic acid with potential antineoplastic activity, by UHPLC-MS method
Authors: Tubica B, Markovic B, Vladimirov S, Savic A, Pol Jarevic J, Sabo T.

P22: Determination of kinetic effect of Metoprolol and Ranitidine on HRP-modified GC electrode biosensor

Authors: Besic Z, Herenda S, Stankovic T, Ostojic J.

P23: Monitoring of bisoprolol fumarate stability under different stress conditions

Authors: Kasagic-Vujanovic I, Jancic Stojanovic B, Ivanovic D.

P24: Measuring the feeling: correlations of sensorial to instrumental analyses of cosmetic products

Authors: Elezovic A, Hadziabdic J, Rahic O, Vranic E.

P25: Hydrophilic antioxidant scores against hydroxyl and peroxy radicals in honey samples from Bosnia and Herzegovina

Authors: Tahirovic I, Helbet Dz, Gastan A, Buza N, Dizdar M, Topcagic A, Toromanovic J, Copra-Janicijevic A, Kurtagic H.

P26: Polymorphisms of 1691G>A FV and 4070A>G FV (HR2) in recurrent pregnancy loss in Bosnian women

Authors: Mahmutbegovic E, Adler G, Medjedovic E, Mahmutbegovic N, Dogan S, Pawinska-Matecka A, Czerska E, Marjanovic D.

P27: Lack of association between I/D ACE and -675 ID 4G / 5G PAI-1 polymorphisms and predicting risk of pregnancy loss (PROPALO) in Bosnian women

Authors: Mahmutbegovic E, Skonieczna-Iydecka K, Valjevac A, Mahmutbegovic N, Pawinska-Matecka A, Czerska E, Marjanovic D, Adler G.

P28: Gene clustering using Gene expression data and Self-Organizing Map (SOM)

Authors: Keskic L, Hodzic J, Alispahic B.

P29: Public opinion toward GMOs and biotechnology in Bosnia and Herzegovina

Authors: Bevanda L, Zilic M, Ecimovic B, Matkovic V.

P30: Future trends and possibilities of using induced pluripotent stem cells (iPSC) in regenerative medicine

Authors: Tucak A, Vrabc Dz, Smajic A, Sazic A.

P31: The influence of the metabolic syndrome on the articular manifestations in patients with rheumatoid arthritis

Authors: Abdullaev B., Tukhtaeva N.

P32: Medical students' dietary habits as a function of stress

Authors: Mujanovic A., Sabic L.

P33: Eating patterns and nourish status among medical students of Sarajevo University

Authors: Catovic A., Kurspahic-Mujcic A., Nadarevic E.

P34: Transcranial doppler analysis in adults with classic migraine

Authors: Music M., Mutevelic-Turkovic A., Muslic D., Dervisevic A., Fajkic A., Alic L.

P35: *Investigation of the use of anodic aluminum oxide membranes as SERS substrates and detection of myoglobin protein*

Authors: Celik M., Altuntas S., Buyukserin F.

P36: *Benefits of early ultrasound diagnosis of congenital urinary tract obstruction in children*

Authors: Jovicic S., Sarovic Vukajlovic M., Bojanic Lj., Obradovic Z., Petrovic Tepic S.

P37: *Pharmacoeconomic analysis of antineoplastic agents consumption in Republic of Srpska during the period from 2011 to 2015*

Authors: Bojanic Lj., Djermanovic M., Sarovic M., Jovicic S., Obradovic Z.

P38: *Open surgery vs. Laparoscopic living donor nephrectomy*

Authors: Beganovic S., Babajic E., Grapkic J.

P39: *Determination of clinical target volume to planning target volume margin without setup correction protocol for localized high-risk prostate cancer irradiation*

Authors: Jaros D., Cacic D., Kolarevic G.

P40: *DNA identification of plane crash victims at the airfield "Zalužani" Banja Luka*

Authors: Obradovic Z., Sarovic M., Jovicic S., Bojanic Lj., Karan Z., Zoric B.

P41: *Do doctors in Republic of Macedonia prescribe irrational antibiotics for acute respiratory tract infections?*

Authors: Angelov M., Krstevska E., Naumovski F., Mitrevska V., Rustemovska S., Mujkanovic A., Stavric K.

P42: *Clinical experience with the use of CAD/CAM technology in making below-the-knee prosthesis*

Author: Majstorovic B.

P43: *Utilizing the solid-state detector for assessment of geometric efficiency in computed tomography*

Authors: Civa L, Begaovic A, Redzic M, Skopljak-Beganovic A, Gazdic-Santic M, Jasic R.

12:30 - 13:30 Lunch Break, Hotel Hills RESTAURANT by Platinum Sponsor: Računari doo Banja Luka

13:30 - 15:30 Plenary Session VII, Hotel Hall 2

BIOMEDICAL SIGNAL PROCESSING 2

Session Chairs: **Dusanka Boskovic**, University of Sarajevo (Bosnia and Herzegovina),
Kang Ping Lin, Chung-Yuan Christian University (Taiwan)

S7-1: Memic J. - *ECG Signal Classification Using Artificial Neural Networks: Comparison of Different Feature Types*

S7-2: Abdullah A.A, Subasi A, Qaisar S.M. - *Surface EMG Signal Classification by Using WPD and Ensemble Tree Classifiers*

S7-3: Ackar H, Kico I, Tahirbegovic A, Boskovic D. - *Tool for Comparative Case Studies of Heart Rate and Heart Rate Variability*

S7-4: Simic M, Babic Z, Risojevic V, Stojanovic G. - *A novel approach for parameter estimation of Fricke-Morse model using Differential Impedance Analysis*

S7-5: Ramovic A, Bandic L, Kevric J, Germovic E, Subasi A. - *Wavelet and Teager Energy Operator (TEO) for Heart Sound Processing and Identification*

S7-6: Osmanovic A, Abdel-Ilah L, Hodzic A, Kevric J, Fojnica A. - *Ovary Cancer Detection using Decision Tree Classifiers based on Historical Data of Ovary Cancer Patients*

S7-7: Akman Aydin E, Bay O.F, Güler I. - *A Dynamic Stopping Algorithm for P300 Based Brain Computer Interface Systems*

S7-8: Maljkovic N, Pantovic S, Mitrovic J. - *Human-machine interface via EMG signals derived from EEG measurement device*

13:30 - 15:30 Plenary Session VIII, Hotel Hall 3

BIOMEDICAL IMAGING AND IMAGE PROCESSING 2

Session Chairs: **Igor Lackovic**, University of Zagreb (Croatia), **Eddie Custovic**, La Trobe University (Australia)

S8-1: Ozic M.U, Ozsen S, Ekmekci A.H. - *A Novel Feature Extraction Approach with VBM 3D ROI Masks on MRI*

S8-2: Ashfaq A, Adler J. - *A modified fuzzy C means algorithm for shading correction in craniofacial CBCT images*

S8-3: Ture H, Kayikcioglu T. - *Detection and Segmentation of Nodules in Chest Radiographs Based on Lifetime Approach*

S8-4: Maretic I, Lackovic I. - *Automated Colony Counting Based on Histogram Modeling Using Gaussian Mixture Models*

S8-5: Korel D.Y, Sonmez M., Lederman R.J., Kocaturk O. – *A novel active device fabrication method for interventional MRI Procedures*

13:30 - 15:30 Plenary Session IX, Hotel Hall 4

CLINICAL ENGINEERING AND HEALTH TECHNOLOGY ASSESSMENT

Session Chairs: Magdalena Krbot Skoric, University of Zagreb (Croatia), Zijad Dzemic, Institute of Metrology of Bosnia and Herzegovina (Bosnia and Herzegovina)

S9-1: Krbot Skoric M, Cifrek M, Krois I, Jerbic A.B, Isgum V. - *The electrode setup for vibratory evoked potentials*

S9-2: Redzic M, Beganovic A, Civa L, Jasic R, Skopljak-Beganovic A, Veger-Zubovic S - *Quality control of tube current modulation in computed tomography*

S9-3: Jafari A, Shirali M, Ghassemian M. - *A testbed evaluation of MAC layer protocols for smart home remote monitoring of the elderly mobility pattern*

S9-4: Kovacevic Z, Stojanovic R. - *Proposal of integrated software system for simulation and GIS visualization of accidents caused by emission of hazardous gases*

S9-5: Bosnjakovic A, Dzemic Z. - *Legal metrology for medical devices*

S9-6: Subasi A., Alickovic E., Kevric J.- *Diagnosis of Chronic Kidney Disease by Using Random Forest*

S9-7: Medvedec M. - *Global Survey on Biomedical Engineering Professionals in Health Technology Assessment*

15:30-16:00 Coca Cola and Klas Break

16:00-18:00 Plenary Session X, Hotel Hall 2

BIOINFORMATICS AND COMPUTATIONAL BIOLOGY

Session Chairs: Tomislav Mileković, École Polytechnique Fédérale de Lausanne (Switzerland), Elma Veljovic, University of Sarajevo (Bosnia and Herzegovina)

S10-1: Alic B, Gurbeta L, Badnjevic A, Badnjevic-Cengic A, Malenica M, Dujic T, Causevic A, Bego T. - *Classification of Metabolic Syndrome Patients Using Implemented Expert System*

S10-2: Badnjevic A, Gurbeta L, Cifrek M, Pecchia L. - *Pre-classification process symptom questionnaire based on fuzzy logic for pulmonary function test cost reduction*

S10-3: Veljovic E, Spiritovic-Halilovic S, Muratovic S, Osmanovic A, Badnjevic A, Gurbeta L, Tatlic B, Zorlak Z, Imamovic S, Husic D, Zavrnik D. - *Artificial Neural Network and Docking Study in Design and Synthesis of Xanthenes as Antimicrobial Agents*

S10-4: Krivdic A. - *Mathematical and Computational Models of Cell Cycle in Higher Eukaryotes*

16:00-18:00 Plenary Session XII, Hotel Hall 3

HEALTH INFORMATICS, E-HEALTH AND TELEMEDICINE

Session Chairs: ***Shankar Krishnan, University of Boston (USA), Zerina Masetic, International Burch University Sarajevo (Bosnia and Herzegovina)***

S12-1: Khan A.S, Khan S.A. - *Using Information and Communications Technology as an Enabler for Designing an Efficient National Level Vaccination Planning and Dispensing System*

S12-2: Bilic D, Kaharevic A, Dumatic D, Sunj E, Nuhic J, Hodzic N, Ibrahimpasic T. - *Stroke Center Heart Rate Data Acquisition*

S12-3: Ceyhan M, Orhan Z, Domnori E. - *Health service quality measurement from patient reviews in Turkish by opinion mining*

S12-4: Ceyhan M, Orhan Z, Domnori E. - *e-Medical Test Recommendation System Based on the Analysis of Patients' Symptoms and Anamnesis*

S12-5: Begic E, Mandzuka M, Begic Z, Dobraca A, Hasanbegovic E. - *Antihypertensive therapy dosage calculator*

S12-6: Ozderya H.Y, Erdol H, Kayikcioglu T, Yilmaz A.O, Kaya I. - *Wireless Body Area Network Studies for Telemedicine Applications Using IEEE 802.15.6 Standard*

S12-7: Kayikcioglu I, Akdeniz F, Kayikcioglu T, Kaya I. - *Real-Time Monitoring of ST Change for Telemedicine*

16:00-18:00 Plenary Session XIII, Hotel Hall 4

MULTIDISCIPLINARY SESSION

Session Chairs: ***Shyh – Hau Wang, National Cheng Kung University (Taiwan), Sefik Suzer, Bilkent University (Turkey)***

S13-1: Balihodzic A., Henic H., Maltez N., Mrzic A., Music E., Omerbasic Z., Salhab A., El-Amin Zeid M., Ibrisimovic Mehmedinovic N., Salihovic V., Galijasevic S., Ibrisimovic M. - *Alternative approaches for total protein isolation from human blood leukocytes*

S13-2: Klepo Dz. - *DNA vaccines*

S13-3: Bode R. - *Role of imagery in preoperative evaluation of parathyroid lesions in Hyperparathyroidism.*

S13-4: Hromic A., Kumar P., Padmanabha Das K.M., Madl T., Jajcanin-Jozic N., Wallner S., Oberer M., Gruber K. - *Biophysical and structural characterization of dipeptidyl peptidase III from Porphyromonas gingivalis*

S13-5: Altuntas S., Haider A., Altinok A., Aslim B., Biyikli N., Buyukserin F. - *Modulation of Nerve-Cell Behavior on Conductive Nanoporous Alumina Membranes*

S13-6: Wang S.H., Liu K.Y. - *Detection of 3-dimensional Kinetic Trajectory of Median Nerve by Ultrasound Images and 3D Motion Tracking Technique*

S13-7: Muhedinovic H., Kico I., Boskovic D. - *Sensor node for pressure monitoring for the IoT biomedical applications*

S13-8: Özgür Doğan R., Kayıkçıoğlu T., Yağci Y., Yıldırım O. - *Developing electronic health recording system for telemonitoring chronic patients*

16:00-18:00 Industry Workshop II, Hotel Hall 1

“Building a thriving Medical and Biological Engineering Industry in Bosnia and Herzegovina”

Panel Experts:

1. Adnan Custovic (*Professor, Imperial College London, UK*)
2. Ervin Sejdic (*Professor, University of Pittsburgh, USA*)
3. Pete Finnegan (*Clinical Innovations Fellow, National Trauma Research Institute, The Alfred, Australia*)
4. Eddie Custovic (*IEEE Industry Engagement & Director of LIEF, La Trobe University, Australia*)
5. Nedim Junuzovic (*Director QARA, Medodan APS and Founder of Regulamedica.com*)
6. Ceco Gakovic (*CityOS Foundation, San Francisco Bay Area*)
7. Ranko Markus (*Director of the GOPA Consultants mbH and manager of the Swiss funded Youth Employment Project (YEP)*)
8. Almir Badnjevic (*Director of Verlab & University Professor*)

20:00 – 00:00 Gala dinner at Hotel Hills Restaurant with Amina Hamzic ft. Open Mind Group (only for registered Members, Non-Members and special Invitations)

SATURDAY, March 18th 2017

08:00 - 09:00 Registration

09:00 - 10:30 Plenary Lectures III, CONFERENCE HALL

1. **Christopher James, Ph.D.** – *Independent Component Analysis in Brain Signals*
2. **Tomislav Milekovic, Ph.D.** - *Neuroprosthetic technologies to restore movement and communication of people with paralysis*

10:30 - 12:00 Plenary Session XIV, Hotel Hall 2

BIOMEDICAL SIGNAL PROCESSING 3

Session Chairs: **Radovan Stojanovic**, University of Podgorica (Montenegro), **Alma Secerbegovic**, University of Tuzla (Bosnia and Herzegovina)

S14-1: Avdihodzic H, Halilovic S, Hasicic M, Bilic D. - *Micro cell culture analog Apparatus (μ CCA) output prediction using artificial neural networks on a microcontroller based framework*

S14-2: Sejdinovic D, Gurbeta L, Badnjevic A, Malenica M, Dujic T, Causevic A, Bego T. - *Classification of Prediabetes and Type 2 Diabetes using Artificial Neural Network*

S14-3: Stanger J, Felicetti M, Jenkins M, Custovic E. - *Multi-biophysical event detection using blind source separated audio signals*

S14-4: Ozturk M.A, Tamer U, Yilmaz A.O, Ozdemir T, Kaya I. - *Diversity performance of microstrip patch antennas placed on human body at ISM and MBAN frequencies*

S14-5: Jankovic D, Stojanovic R. - *Flexible system for HRV analysis using PPG signal*

S14-6: Ciobanu O, Ciobanu G, Aiello A. - *An application of Kinect depth sensor for scoliosis and kyphosis screening*

S14-7: Yin H, Chiu S, James C. - *Development of a muscle activated switch for the severely debilitated*

S14-8: Secerbegovic A, Ibric S, Nisic J, Suljanovic N, Mujcic A. - *Mental workload vs. stress differentiation using low-cost EEG signals*

10:30 - 12:00 Plenary Session XV, Hotel Hall 3

PHARMACEUTICAL ENGINEERING

Session Chairs: **Hurija Dzurdzevic Cancar**, University of Sarajevo (Bosnia and Herzegovina), **Tamer Bego**, University of Sarajevo (Bosnia and Herzegovina)

S15-1: Ibrisimovic M, Ibrisimovic-Mehmedinovic N. - *Effects of various metal and drug agents on excretion of enzyme aspartyl proteinase in Candida albicans and its role in human physiological processes*

S15-2: Zunic E, Djedovic A, Juric Z. - *Practical Transport Optimization Method and Concept in Pharmaceutical Industry*

S15-3: Muratovic S, Veljovic E, Osmanovic A, Dedibegovic J, Niksic H, Dzudzevic-Cancar H, Zavrsnik D. - *Antiproliferative Evaluation and Docking Study of Synthesized Biscoumarin Derivatives*

S15-4: Terzic V, Tarakcija A, Vardo A, Hadzajlic A, Sakic V, Smajlovic S , Milisav A.M, Midzic E, Smajovic A, Dedic M. - *Passive absorption prediction of transdermal drug application with Artificial Neural Network*

S15-5: Duspara K, Smits A, Allegaert K, Heljic S, Turcic P, Rakovac-Tupkovic L, Kusturica J, Rakanovic-Todic M, Burnazovic-Ristic L, Maleskic S, Kulo A. - *The role of population pharmacokinetic analysis in rational antibiotic therapy in neonates*

S15-6: Hasaneffendic B, Hajrovic A, Begovic E, Uzunalic H. - *The ratio of hematological parameters and markers of inflammation in patients with iron deficiency and pernicious anemia*

S15-7: Hercegovac A, Hajdarevic E, Hodzic S, Halilovic E, Avdic A, Habibovic M. - *Blood group, hypertension, and obesity in the student population of Northeast Bosnia and Herzegovina*

10:30 - 12:00 Plenary Session XVI, Hotel Hall 4

GENETIC ENGINEERING

Session Chairs: **Damir Marjanovic**, International Burch University Sarajevo (Bosnia and Herzegovina), **Safija Herenda**, University of Sarajevo (Bosnia and Herzegovina)

S16-1: Mandal S, Causevic A, Dzudzevic-Cancar A, Semiz S. - *Free fatty acid profile in Type 2 diabetic subjects with different control of glycemia*

S16-2: Maras V, Kodtulovic V, Mugosa M, Raicevic J, Gazivoda A, Sucur S, Perisic M. - *Clonal selection of Montenegrin autochthonous grape variety Vranac*

S16-3: Konakli H, Balkaya H.E, Ozcoban I, Dogan S. - *A Dissimilar Approach to Associating Angiotensin Converting Enzyme Polymorphisms*

S16-4: Sofo-Hafizovic A, Dizdarevic-Rekic A, Ibricevic-Balic L, Burazerovic L, Vila M, Suljovic-Hadzimesic E, Skuric-Tomic M, Catovic-Baralija E, Ahmetovic G, Sahovic A, Sicanica S, Omanovic A. - *Successful collection of stem cells in one day in the process of autologous stem cell transplantation*

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

13:00 – 14:00 Annual Assembly of the Bosnia and Herzegovina Medical and Biological Engineering Society

