

October 10, 2022

09.00 - 10.30 **Opening Ceremony of the Academic Year 2022/2023**
Faculties of Biomedical Engineering and Organization and Management
Matriculation Ceremony

10.00 – 11.00 Registration open

Opening Ceremony

Commemorative speeches

prof. Marek Gzik, Director of European HealthTech Innovation Center

dr Małgorzata Mańka-Szulik, Mayor of Zabrze

prof. Arkadiusz Mężyk, Rector of the Silesian University of Technology

prof. Krzysztof Milewski, General Director of Center for Cardiovascular Research and Development,
American Heart of Poland

Michał Kępowicz, Board Member at Philips Polska

11.00 - 13.00 **Awards ceremony: *Distinguished Service to the Faculty of Biomedical Engineering***
Plenary session

chair: prof. Krzysztof Milewski, prof. Arkadiusz Mężyk, prof. Zbigniew Paszenda

Superhumans Center and challenges in health care system due to war

Olga Rudneva, Superhumans Center

Healthcare hits reset. Priorities shift as healthcare leaders navigate a changed world

Jan-Willem Scheijgrond, Royal Philips and Tomasz Pilewicz, Philips Poland

Design and analysis of orthopedic devices with musculoskeletal models

Michael Skipper Andersen, Aalborg University

Engineering support for preventing football players injuries

Jacek Jurkojc, Silesian University of Technology

13.00 - 14.30 Lunch

HealthTech Innovation Presentations

Opening presentations

14.30 – 16.00 *Most advanced solutions in the field of lower limb prosthetic*
Adam Gramala, ENForce Medical Technologies

University-Industrial Research Collaboration

Aneta Dynier, CHIRMED



Poster session

chair: prof. Paweł Badura, prof. Sławomir Blamek

- 1 *The use of GIFT Toolbox in the process of assessing physiological changes in the brain based on LBNP training – preliminary studies*
Karpiel Ilona, Urzeniczok Mirella, Sobotnicka Ewelina, Gałdziński Stefan, Dziuda Łukasz
- 2 *The influence of sound stimuli on the human body posture*
Romanek Justyna, Chmura Marta, Gruszka Grzegorz, Marek Ples, Wodarski Piotr, Jurkojć Jacek
- 3 *Influence of the Silanization Process on Spherical Aluminosilicates*
Dubiel Agnieszka, Walke Witold, Nakonieczny Damian, Antonowicz Magdalena
- 4 *Motion Capture System Study on Human Balance*
Sopa Martyna, Walczak Tomasz, Pogorzała Adam M.
- 5 *Assessment of Muscles Excitation during Physical Activity based on Surface Electromyography*
Mika Barbara, Komorowski Dariusz
- 6 *Conditions for effective disinfection with UV-C RADIATION*
Bączek Aleksander, Pasik Kamila, Arkusz Katarzyna, Klekiel Tomasz
- 7 *Numerical Analysis of Temporomandibular Joint Prosthesis*
Kawlewska Edyta, Socha Marta, Czarnecki Paweł, Wielek Wioletta, Burkacki Michał, Dowgierd Krzysztof
- 8 *Piezoresistive behavior of carbon/carbon composite based on expanded graphite and Opolyfurfuryl alcohol*
Nowotarska Kamila, Kania Patryk, Kowal Bartosz, Filipowska Anna
- 9 *Optimization of Melt Electrowriting (Mew) 3d Bioprinting Parameters Using the Taguchi Method*
Senocak Taha Cagri, Gudeti Pavan Kumar Reddy, Włodarczyk-Biegun Małgorzata Katarzyna
- 10 *Optimization of Prosthetic Foot made with the Use of Auxetic Metamaterials*
Mrozek Agata, Stręk Tomasz
- 11 *Conceptual design of a Universal Robots gripper enabling rehabilitation of the upper limb – from concept to physical model*
Sobiech Mariusz, Chuchnowska Iwona, Watoła Benjamin
- 12 *Gyroscope-based gait cycle analysis – used in prosthetics*
Lipowicz Paweł, Dziemianowicz Marcin
- 13 *ECG quality assessment using deep learning*
Duraj Konrad, Piaseczna Natalia
- 14 *Review of Innovative Virtual Reality Solutions Supporting the Rehabilitation of Covid-19 Patients*
Sobotnicka Ewelina, Karpiel Ilona, Sobiech Mariusz
- 15 *VR haptic glove*
Michnik Andrzej, Michnik Robert, Sobiech Mariusz
- 16 *Motor response model in the function of selected acoustic parameters of metrorhythmic stimulation*
Tuszy Aleksandra, Romaniszyn-Kania Patrycja, Szurmik Tomasz, Kania Damian, Czak Mirosław, Bibrowicz Karol, Turner Bruce, Mitas Andrzej
- 17 *Modeling and Numerical Analysis of the Strength of the Osteosynthesis Plate Used to Stabilize Long Bone Fractures*
Młody Anna-Maria, Piecha Jagoda, Rychlik Michał
- 18 *Evaluation of 3D-printed Bone Model, Customized Saw Guide and Jig for Antebrachial Angular Limb Deformity Surgical Correction in Dogs*
Trębacz Piotr, Kurkowska Aleksandra, Barteczko Anna, Pawlik Mateusz
- 19 *Surface Electromyography and Muscles Force*
Komorowski Dariusz, Mika Barbara
- 20 *Bioimpedance Spectroscopy – Modern Applications*
Urzeniczok Mirella, Karpiel Ilona
- 21 *Influence of 3D printing parameters on the mechanical properties of veterinary implants used for the treatment of ACL rupture*
Brzóska Maria, Cholewa Klaudia, Gawron Anna, Krutyło Klaudia, Antonowicz Magdalena, Pawlik Mateusz
- 22 *Stabilography parameters after hip flexion and extension training during simulated space missions isolation*
Fryc Dobrochna, Michnik Robert
- 23 *Rapid Manufacturing of Individualized Supplies for Eye Socket Reconstructive Surgery*
Żukowska Magdalena, Boberska Daria, Górski Filip, Okła Maciej
- 24 *Solving the Boundary Value Problems by Meshless Methods for Representing the Shapes of Children's Hand Bones Obtained from Radiographs*
Grabski Jakub Krzysztof





- 25 *Automated Design and 3D Printing of Therapeutic Wrist Hand Orthosis*
Górski Filip, Żukowska Magdalena, Kuczko Wiesław, Wichniarek Radosław, Siwiec Sabina
- 26 *The influence of sleep duration on the feeling of well-being during the Covid-19 lockdown*
Kruczkowski Adam, Lovell Dominic, Szymczyk Sebastian, Wojtowicz Marcin, Piaseczna Natalia, Doniec Rafał, Tkacz Ewaryst, Mocny-Pachońska Katarzyna
- 27 *Electroactive Polymers as Cardio Patches for Regenerative Medicine*
Golba Sylwia, Jurek-Suliga Justyna
- 28 *Analysis of the Sars-Cov-2 Molecular Sequences Using Bioinformatics Tools*
Uzdowska Julia, Tamulewicz Anna
- 29 *A measurement system to evaluate the dog's motion functions using IMU sensors*
Głowacka Agnieszka, Kalembe Agnieszka, Pałachniak Jakub, Król Michał, Szczepny Bartosz, Malcherek Jakub, Garbacz Szymon, Michnik Robert, Guzik-Kopyto Agata
- 30 *Study of Individualized Leg Orthoses made by 3D Printing of Composite Material*
Rybarczyk Justyna, Kuczko Wiesław, Wichniarek Radosław, Górski Filip, Żukowska Magdalena

14.30 - 16.00 Meeting of the Deans of Faculties providing studies in Biomedical Engineering

16.00 - 17.30 Presentation of the European HealthTech Innovation Center

18.00 Gala meeting of the Conference Programme Council and Scientific Committee

October 11, 2022

Special session of the American Heart of Poland

chair: prof. Krzysztof Milewski

- 09.00 - 10.30** *New devices for heart failure treatment*
Krzysztof Milewski
- Polish bioresorbable stents and transcatheter aortic valve*
Piotr Buszman
- Artificial intelligence in interventional cardiology*
Michał Nedoszytko
- What's new in electrotherapy*
Adam Janas

10.30 – 11.00 Coffee break

Computational Oncology and Personalized Medicine session

chair: prof. Joanna Polańska, prof. Ewa Piętka

- 11.00 - 12.30** *Radiomics: medical images are more than pictures, they are quantitative data*
Philippe Lambin, Maastricht University
- Development of a complete system with an online open-access platform for COVID-19 and pneumonia detection on chest X-Ray images*
Michał Marczyk, Silesian University of Technology

12.30 Closing Ceremony



Silesian University
of Technology



Faculty of
Biomedical Engineering



EHTIC
European HealthTech
Innovation Center