

## COPM 2022 conference program

### Plenary session (1A)

**Chairman: dr hab. inż. Katarzyna Krukiewicz**

14:00 – 14:15

**Opening session**

14:15 – 14:20

Summary of a conference schedule and invitation for parallel sessions.

### Parallel session (2A)

**Chairman: dr hab. inż. Katarzyna Krukiewicz**

14:30

**Loffredo A**, Van Damme L, Van Hoorick J, Van Vlierberghe S, Pandit A, Biggs M: **The fabrication of multiphoton-microstructured hydrogels for neural guidance**

14:40

**Cesarz-Andraczke K**, Kania A: **Studies of resorbable magnesium alloys for orthopedic implants**

14:50

**Kostina-Bednarz M**, Barchańska H, Płonka J: **Preliminary studies of nitisinone metabolism in model systems**

15:00

**Geevarghese R**, Żur-Pińska J, Amirsadeghi A, Włodarczyk-Biegun M: **Development of bioinks for gradient scaffolds for interface tissue engineering**

15:10

**Afra S**, Matin MM, Włodarczyk-Biegun M, **Żur-Pińska J**: **Development of a printable hydrogel for local drug delivery in osteoporosis treatment**

15:20

**Jankowska K**, Łos MJ, Hudecki A, Hybiak J: **ADSC differentiation into osteoblasts in the presence of tissue scaffolds obtained from core-shell micro- and nanofibers with addition of Cu**

15:30

**Skorupa M**, Krukiewicz K: **Copolymerization of biocompatible conducting polymers: PEDOT/ PEDOP**

15:35

**Kania A**, Cesarz-Andraczke K: **Structure and corrosion resistance of a biomedical Mg-based alloy with Gd addition**

15:40

**Gudeti PKR**, Koch M, Włodarczyk-Biegun M: **Biofabrication of myotendinous tissue using melt-electrowriting for patient-specific applications**

15:45

**Pogoda-Mieszczak K**, Sochanik A, Rahman MM, McFadden G, Jazowiecka-Rakus J: **Usefulness of human adipose tissue-derived mesenchymal stem cells as a carrier of oncolytic myxoma construct for the planned therapy of murine glioblastoma**

### Parallel session (2B)

**Chairman: dr inż. Maria Gracka**

14:30

**Śliwińska W**, Suwalska A, Marczyk M: **Automatic identification of COVID-19 patients on lung X-ray imaging with the use of deep learning techniques**

14:40

**Kalisz S**, Marczyk M: **Image blur reduction in the denoising autoencoder model for rib suppression on X-ray images of the lungs**

14:50

**Suwalska A**, Socha M, Prazuch W, Tobiasz J, Polanska J, Marczyk M: **nUMAP: How can we overcome the problem in the visualization in multi dataset comparative studies?**

15:00

**Janas A**, Marczyk M: **Cell segmentation on HE-stained histopathological images of breast cancer samples**

15:10

**Prazuch W**, Polanska J: **Graph modelling of bronchovascular bundle visualized by low-dose Computed Tomography imaging technique**

15:20

**Kowol K**, Pyciński B: **X-ray microtomography imaging of fresh and formalin-fixed poultry heart**

15:30

**Wilczek P**: **The recurrence and cross-recurrence quantification analysis (RQA) of the dose-response time series based on the local binary pattern (LBP) texture operator.**

15:40

**Kijonka M**, Borys D, Kapek L, Prażmowska J, Psiuk-Maksymowicz K, Sokół M: **Non-parametric MRI Brain Atlas for the Polish Population**

### Plenary session (3A)

**Chairman: prof. dr hab. inż. Joanna Polańska**

16:00 – 16:45

**Dr Jack Tuszynski**

Towards Electromagnetic Medicine: electro-conductive properties of cytoskeletal protein filaments and cancer cells exposed to electric and electromagnetic fields

## Parallel session (4A)

**Chairman: dr inż. Bartłomiej Melka**

- 17:10 **Karpień I:** Effects of pre and postprocessing on brain volume: a preliminary study
- 17:20 **Shojaei S,** Azarpira N, Ghavami S: Autophagy and cholesterol pathways possible crosstalk as a predisposing mechanism in glioblastoma multiforme
- 17:30 **Alsharabasy A,** Bohara R, Farràs P, Glynn S, Pandit A: Investigation of the anti-cancer effects of Fe (iii)-protoporphyrin IX complex via nitric oxide scavenging mechanism: an experimental and theoretical study
- 17:40 **da Silva Rosa S,** Alizadeh J, Ravandi A, Ghavami S: Non-small cell lung cancer metastasis and anoikis resistance: a potential role for regulation of ceramides biosynthesis via BCL2L13
- 17:50 **Frątczak K,** Gawin M, Chekan M, Pietrowska M, Widłak P, Polańska J: Intelligent cancer classification systems for MALDI-MSI head and neck study
- 18:00 **Senthilkumar I,** Howley E, McEvoy E: Simulation of mechanosensitive tumour growth
- 18:10 **Alizadeh J,** Lorzadeh S, Triggs-Raine B, Ghavami S: Mitophagy and non-small cell lung cancer metastasis
- 18:15 **Clark C,** Shojaei S, Alizadeh J, Ghavami S: TMZ-resistance and BCL2L13 in human glioblastoma cancer cells
- 18:20 **Mrowiec K,** Jelonek K, Kureczyk A, Debik J, Giskeødegård GF, Bathen TF, Widłak P: Comparison of serum metabolome profiles in women with different types of solid cancers and healthy controls
- 18:25 **Będzińska A,** Łasut-Szyska B, Małachowska B, Gdowicz-Kłosok A, Krześniak M, Rusin M: Transcriptome sequencing of four cell lines derived from different tumors revealed new genes regulated by p53 tumor suppressor
- 18:30 **Chen C,** Liu SM, Chen Y, Han M, Ou Q, Bao H, Xu L, Zhang Y, Zhang J-T, Zhong W, Zhou Q, Yang X-N, Shao Y, Wu Y-L, Liu S-Y, Li Y: Identification of TCR rearrangements special for genetic alterations in EGFR-mutated non-small cell lung cancer: results from the ADJUVANT-CTONG1104 trial

## Parallel session (4B)

**Chairman: dr inż. Michał Marczyk**

- 17:10 **Mitusińska K,** Mróz J, Jezela-Stanek A, Góra A: Investigating rare diseases using in silico approaches
- 17:20 **Gil J,** Szymiczek K, Polanski A: Simulation system for fitness waves in clonal evolution
- 17:30 **Sieradzka K,** Polańska J: Integrative approach for single-cell classification
- 17:40 **Mesek M,** Sinek A, Rojczyk M, Adamczyk W, Juszczyk J, Ostrowski Z, Białecki R: Construction and description of the experimental rig used to capture the displacement of deformable body subjected to pulsatile flow
- 17:50 **Bzówka M,** Bagrowska W, Pérez-Sánchez H, Góra A: Application of computational methods in searching novel binding sites and inhibitors towards human soluble epoxide hydrolase
- 18:00 **Mrukwa A,** Marczyk M, Zyla J: Gaussian mixture model for thresholding in pathway enrichment analysis of scRNA-Seq data
- 18:10 **Labaj W,** Polański A: Identification of somatic mutations in glioblastoma multiforme cancer on the basis of scRNA seq data.
- 18:20 **Tobiasz J,** Mika J, Frąckowiak J, Labaj W, Quintens R, Benotmane MA, Baatout S, Polanska J: Low-dose radiation impact on brain development in mice
- 18:30 **Kania M,** Polański A: Unsupervised clustering of gene expression data of TCGA patients by using mixtures of multidimensional Gaussian distributions

## Plenary session (5A)

**Chairmen: dr hab. inż. Katarzyna Krukiewicz & dr inż. Michał Marczyk**

18:50 – 19:00

**Conference summary and closing**