

1st Polish – Israeli Seminar
“Biomedical Engineering Approaches in Chronic Diseases”

PROGRAM OF THE SEMINAR

September 3rd

09:00 – 09:15 **WELCOME ADDRESS - Prof. Jan M. Wójcicki, Prof. Joseph Kost**

09:15 – 09:45 **OPENING LECTURE:**
Prof. Ewa Sikora, Institute of Experimental Biology, Polish Academy of Sciences
“Senescent cell rejuvenation-the road to postponing human ageing and age-related chronic disease”.

9:45 – 10:00 **MUSICAL PERFORMANCE**

10:00 – 10:30 Coffee break

Session I. PATHOPHYSIOLOGY - MODELLING AND SIMULATIONS I

Chairman: Prof. Andrzej Lipkowski

10:30 – 11:00 **Prof. Moti Hallak**, Department of Obstetrics, Gynaecology and Reproductive Science , Hillel Yaffe Medical Center and The Bruce Rappaport Faculty of Medicine, Technion University
“Magnesium and fetal brain”.

11:00 – 11:30 **Assoc. Prof. Urszula Wojda**, International Institute of Molecular and Cell Biology in Warsaw

11:30 – 12: 00 **Prof. David Elad**, Department of Biomedical Engineering, Tel Aviv University
“Molecular mechanisms in Alzheimer’s disease: beyond amyloid?”.
“Analysis of maternal-to-fetal glucose transfer with an in vitro biological model of the placental barrier”.

12:00 – 12:30 **Prof. Jacek Waniewski** , Department of the Mathematical Modeling of Physiological Processes Department, Institute of Biocybernetics and Biomedical Engineering Polish Academy of Sciences
“Mathematical modeling of the transport through peritoneal membrane”.

12:30 – 13:30 Lunch break

Session II. PATHOPHYSIOLOGY - MODELLING AND SIMULATIONS II

Chairman: Prof. Moti Hallak

- 13:30– 14:00 **Prof. Chaim G. Pick**, Department of Anatomy and Anthropology, Sackler School of Medicine, Tel-Aviv University
“Animal model of traumatic brain injury”.
- 14:00 – 14:30 **Prof. Zbigniew Brzózka**, Department of Microbioanalytics, Institute of Biotechnology, Warsaw University of Technology
“Three dimensional cancer tumor model in a microfluidic device“.
- 14:30 – 15:00 **Dr. Daphne Weihs**, Faculty of Biomedical Engineering, Technion University
“Cell mechanics and force generation during initial stages of metastatic penetration”.
- 15:00 – 15:30 Coffee break

Session III. DIAGNOSIS I

Chairman: Prof. Ewa Sikora

- 15:30 – 16:00 **Prof. Bogusław Buszewski**, **Assoc. Prof. Tomasz Ligor**, Department of Environmental Chemistry and Ecoanalytics, Faculty of Chemistry, Nicolaus Copernicus University, Toruń
“Application of hyphenated separation technique in breath analysis for lung cancer diagnosis”.
- 16:00 – 16:30 **Prof. Hossam Haick**, Faculty of Chemical Engineering, Technion University
“Nanoarrays for Diagnosis of Disease via Volatile Biomarkers”.
- 16:30 – 17:00 **Prof. Dadlez et al.**, Institute of Biophysics and Biochemistry, Polish Academy of Sciences
“Urine proteomics in nephropathies – technical aspects”.

September 4th

Session IV. DIAGNOSIS II

Chairman: Prof. David Elad

- 09:00 – 09:30 **Prof. Wiesław Jędrzejczak**, **Dr Marta Libura**, Clinic of Hematology, Oncology and Internal Diseases, Warsaw Medical University
“Molecular diagnosis of acute leukemia”.
- 09:30 – 10:00 **Dr David Vartsky**, Soreq NRC
“Early detection of prostate cancer by measuring Zn concentration”.
- 10:00 – 10:30 **Prof. Piotr Ładyżyński**, **Prof. Jan M. Wójcicki**, Department of Biomedical Systems and Technologies, Institute of Biocybernetics and Biomedical Engineering, Polish Academy of Sciences
“Hemoglobin A1c as a marker for diabetes detection and monitoring”.

- 10:30 – 11:00 **Dr. Giora Enden**, Department of Biomedical Engineering, Ben-Gurion University
“A minimally invasive method of harvesting biomarkers for early diagnostic purposes”.
- 11:00 – 11:30 Coffee break

Session V. SYSTEM'S TECHNOLOGY/BIOMATERIALS I

Chairman: Prof. Tomasz Ciach

- 11:30 – 12:00 **Prof. Roy Bar-Ziv**, Faculty of Chemistry, Weizmann Institute of Science, Rehovot
“Cell-free synthetic biology on a biochip”.
- 12:00 – 12:30 **Prof. Dorota Pijanowska**, Head of Hybrid Microbiosystems Engineering Department, Institute of Biocybernetics and Biomedical Engineering, Polish Academy of Sciences
“Micro-bio-analytical systems”.
- 12:30 – 13:00 **Prof. Shosh Arad**, Department of Biotechnological Engineering, Ben Gurion University
“The biotechnology of sulfated polysaccharides for pharmaceuticals and cosmetics”.
- 13:00 – 14:00 Lunch

September 5th

Session VI. SYSTEM'S TECHNOLOGY/BIOMATERIALS II

Chairman: Prof. Roy Bar-Ziv

- 09:00 – 09:30 **Prof. Tomasz Ciach**, Faculty of Chemical and Process Engineering, Warsaw University of Technology
“Polysaccharide nanoparticles for anticancer drug delivery”.
- 09:30 – 10:00 **Prof. Tomasz A. Kowalewski**, **Dr Tomasz Kowalczyk**, Institute of Fundamental Technological Research, Polish Academy of Sciences
“Application of nanofibers in drug delivery systems”.
- 10:00 – 10:30 **Dr. Ronit Bitton**, Department of Chemical Engineering, Ben-Gurion University
“Structure- properties-function relations in multicomponent polysaccharide hydrogels for surrogate ECMs”.
- 10:30 – 11:00 **Prof. Maria Bryszewska**, **Dr Elżbieta Pędziwiatr-Werbicka**
Faculty of Biology and Environmental Protection, University of Łódź
“Biomedical applications of dendrimers”.
- 11:00 – 11:30 Coffee break

Session VII. THERAPY

Chairman: Prof. Eitan Kimmel

- 11:30 – 12:00 **Prof. Joseph Kost**, Faculty of Engineering Sciences, Ben-Gurion University
“Nano-based therapies in cancer and diabetes”.
- 12:00 – 12:30 **Prof. Andrzej Lipkowski**, Mossakowski Institute of Experimental Medicine, Polish Academy of Sciences
“Hair proteins as a substrate for biomedical applications in treatment of chronic diseases”.
- 12:30 – 13:00 **Prof. Eitan Kimmel**, Faculty of Biomedical Engineering, Technion University
“On intra-membrane cavitation and nano-medicine”.
- 13:00 – 13:30 **Dr Krzysztof Pluta**, Department of Hybrid Microbiosystems Engineering, Institute of Biocybernetics and Biomedical Engineering, Polish Academy of Sciences
“Genetic modifications of hepatocytes for bioartificial liver”.
- 13:30 – 14:00 **CLOSING REMARKS - Prof. Joseph Kost, Prof. Jan M. Wójcicki**
- 14:00 – 16:00 **Farewell Lunch**