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BIOART Pilot Teaching - 22nd January 2020

HIT Holon Institute of Technology, Faculty of Engineering

11:00 - 11:30 Welcome and meeting with the Dean and introduction to faculty members

Building 5, Room 330

11:30 - 13:30 Tour of the campus and some research labs of interest

13:45 - 15:00 Lunch and break

15:00 -16:00 Discussion – potential projects and student exchange with staff members and students of the Bio Engineering track

Building 5, Room 330

16:00 - 17:00 Seminar – (חלון לחזון) - Prof. Andrea De Luna (Donau-Universität Krems).

"Current Strategies of Tissue Engineering and Regenerative Medicine"

Building 5, Room 214

17:00 - 18:00 Coffee Break

and

Tour of labs near the AI lab

Building 1, 5th floor

18:00 - 19:30 Seminar at AI lab (combined with the lesson) – Deep learning

Prof. David Luengo Garcia (Technical University of Madrid-UPM).

"ECG-Based Biometric Recognition: Signal Processing and Machine Learning Algorithms"

Building 1, AI Lab

BIOART Visitors, 22nd of January 2020

Prof. David Luengo. Universidad Politécnica de Madrid (***UPM***), Spain.

Prof. Peter Arras Mechanical Engineering Technology TC, De Nayer (Sint-Katelijne-Waver) Campus, **KU Leuven** – University, Belgium

Prof. Mag. Andrea De Luna*, Ph.D. Center for Regenerative Medicine,Campus Krems,* ***Donau-Universität Krems*** *(DUK), Center for Regenerative Medicine, Austria*

Miriam Seiti Mechanical Engineering Technology TC, De Nayer (Sint-Katelijne-Waver) Campus
Campus, **KU Leuven** – University, Belgium

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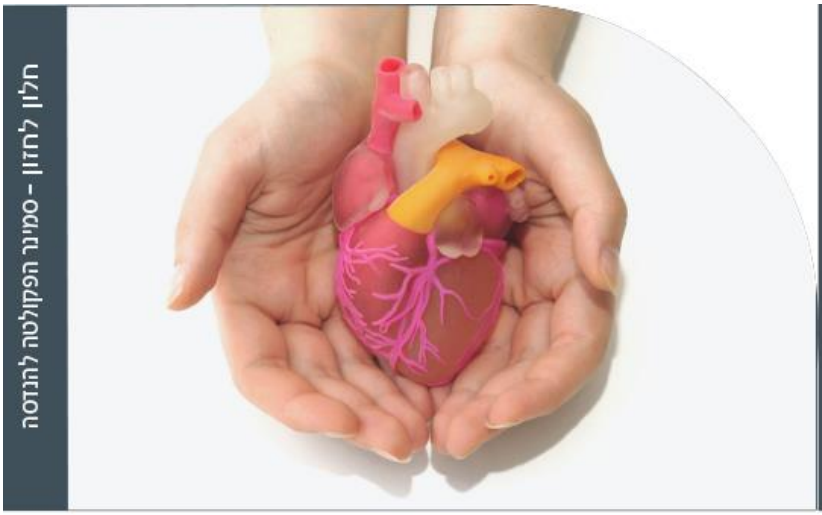

חלון לחזון – סמינר הפקולטה להנדסה

הפקולטה להנדסה מתכבדת
להזמינך לסמינר בנושא:

CURRENT TRENDS IN REGENERATIVE MEDICINE AND TISSUE ENGINEERING

22.1.2020

lecturer:
Prof. Andrea De Luna, Donau-Universität Krems – DUK, Austria

Abstract:
The fields of Tissue Engineering and Regenerative Medicine are one of the most popular and fastest growing scientific areas in medical research. Pictures of the Vacanti mouse – a mouse growing an ear on its back – are still in the textbooks of tissue engineering even though they were taken 1996. But what happened since then? Are the tissue engineering strategies still the same?
This lecture will give a general overview about Tissue Engineering and Regenerative Medicine approaches - how they developed and where we are now. It will give a deepening insight how autologous blood derived products are used for tissue regeneration and which role extracellular vesicles have in cell-cell communication. Furthermore, current research projects conducted at the Center of Regenerative Medicine, Danube University Krems will be presented to give an insight how current tissue engineering strategies are translated into practice.

Biography
Prof. Andrea De Luna, obtained her Master of Science in Biology with the specialization in Genetics and Microbiology at the University of Vienna. During her PhD at the Medical University of Vienna her research focused on the chondrogenic differentiation potential of amniotic fluid stem cells. Afterwards she continued her research at the Danube University Krems where she currently is Assistant Professor for Regenerative Medicine and Tissue Engineering. Establishing alternative therapies and improving already existing therapies for orthopeadic problems of the musculoskeletal system using autologous blood products and extracellular vesicles from Mesenchymal Stem Cells is her main research focus.

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18:00 - 19:30 Seminar at AI lab (combined with the lesson) – Deep learning

ECG-Based Biometric Recognition: Signal Processing and Machine Learning Algorithms

Prof. David Luengo Garcia (Technical University of Madrid-UPM)

Abstract:

Biometric recognition deals with the identification/authentication of users from some set of biological characteristics. The electrocardiogram (ECG), routinely used in medical applications for the diagnosis of several pathologies, has been explored as a promising biometric trait during the last two decades. In this talk, we will start by providing an overview of the existing biometric systems, the different contexts where they may be applied, as well as their advantages and drawbacks. Then, we will focus on ECG-based biometry, describing some of the most interesting systems proposed so far. We will focus on the signal processing and machine learning algorithms used for noise/outlier removal, fiducial point extraction, dimensionality reduction and classification. The talk will end with a brief introduction to some of the recently proposed deep learning approaches in this field, as well as pending issues and possible future developments.