



# Institute of Biomedical Engineering Seminar

160<sup>th</sup>  
YEAR

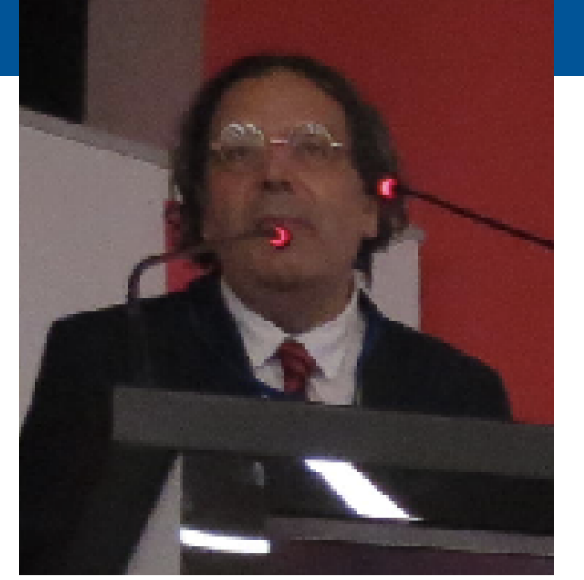
## Towards a Non-Invasive Precision Medicine System Using Molecular Imaging

05 NOV TUE at 1:00 PM (GMT+3)

Boğaziçi University Kandilli Campus, BME Building AZ19

*About the Seminar: In this seminar, we tackle the potential objective of attaining efficacious precision medicine systems through PET and SPECT/CT molecular imaging systems. We use quality assurance concepts to formulate precision/personalized medicine which can be summarized as “giving the right treatment to the right patient the first time”. This contrasts the concepts of trial and error or one solution fits all. We pursue further this objective by introducing non-invasive methods that include high precision molecular imaging systems such as quantitative PET/CT. We consider images as vast amounts of data to explore through modeling, simulation, image processing and statistical learning methods. We first present our recent work on improving the performance of hybrid molecular imaging systems. We then present the results of our recent work on interpretable machine learning models for predicting characteristics of individual patients with Alzheimer’s Disease and tumor characteristics for different types of cancerous tumors.*

*About the Speaker: Albert Güveniş, PhD has been faculty member at Drexel University, University of Pennsylvania (HUP), and Boğaziçi University. He has worked on the development of a new Positron Emission Tomography (PET) unit in the USA. He has initiated several quality assurance (QA) initiatives in the area of medical imaging including a laboratory on image quality, training a large number of radiology professionals. He also conducted research activities on hybrid medical systems optimization and quantification. He holds a US patent and is a co-recipient of GOLD medal AWARD from a TECHNOFEST event. He collaborated with a large number of organizations of global impact such as WHO, Switzerland, JCI, ECRI and MOFFITT Cancer Institute, USA. He participated in international research projects that led to publications in journals with high impact factors. He is currently a member of reviewer boards for several Web of Science indexed journals. He is a member of IEEE, International Society to Advance Alzheimer’s Research and Treatment (ISTAART) and SIGMA XI, an honorary international research organization.*



Albert Güveniş, PhD  
Boğaziçi University

