

Introduction to a High-Resolution Fast-Timing PET Project

Friday 3 June 2022 10:35 (15 minutes)

With the aging of the global population, neurodegenerative diseases such as Alzheimer's and Parkinson's are becoming more common. In addition, PET is a useful clinical tool for accurately visualizing the presence of biomarkers in the brain associated with various neurodegenerative diseases (e.g., amyloid- β plaques or microtubule-associated protein tau strands). However, the relatively high level of radiation exposure and long scan times, along with the high cost of hybrid PET/CT and PET/MRI scans, are the main disadvantages of current PET examination. To address these shortcomings, we are developing standalone PET scanners dedicated for the brain and other peripheral organs. The main goal of this project is to develop a high-resolution, high-sensitivity PET scanner with a moving gantry for flexible patient and organ positioning with time-of-flight measurements and depth-of-interaction encoding capabilities. A reliable deep learning-based PET denoising and quantification solution is also being integrated. This talk introduces the progress of this project.

Author: Prof. LEE, Jae Sung (Seoul National University)

Presenter: Prof. LEE, Jae Sung (Seoul National University)

Session Classification: Clinical motivation for pushing TOFPET CTR resolution ≤ 100 ps

Track Classification: Clinical motivation for pushing TOFPET CTR ≤ 100 ps