

AbstractID: 5979 Title: Advances in PET Technology - New Crystals and Detector Designs

Over the past ten years, the use of clinical PET, particularly in the field of oncology, has increased dramatically. More recently, the introduction of hybrid PET/CT scanners has led to an enhanced ability to provide anatomical correlation to the functional findings on the PET scan. And lastly, the growing field of molecular imaging has led to the development of a variety of dedicated PET systems for small animal imaging. In the clinical arena, the goal is to develop scanners with higher sensitivity and count rate capability to be able to acquire whole body scans more efficiently. Efficiency is essential with respect to small animal imaging as well, but it must be accomplished with very high spatial resolution. This presentation will review the basics of PET imaging with a look towards the advances being made to address the needs of these two very different imaging tasks. The use of 2D versus 3D will be discussed as well as the effect using different crystal materials. Other advances being actively pursued such as the use of time-of-flight PET will also be discussed.

Educational Objectives

After attending this presentation, the attendee will be able to list 2 advantages and 2 disadvantages of 3D PET compared to 2D PET for clinical, whole body imaging, name 3 different materials used in state-of-the-art PET scanners and list 2 advantages of each, and discuss two potential advantages for time-of-flight PET.