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COMPET: High Resolution High Sensitivity MRI Compatible Pre-Clinical PET Scanner

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COMPET is a pre-clinical MRI compatible PET scanner which decouples sensitivity and resolution by the use of a novel detector design. The detector is built using square 8×8 cm layers consisting of 30 LYSO crystals interleaved with 24 Wavelength shifting fibers (WLS). By stacking several layers into a module, the point-of-interaction (POI) can be measured in 3D. Four layers forms a PET ring where the sensitivity can be increased by stacking several layers. The layers can be stacked such that no inter-crystal or inter-module gap is formed. COMPET has used four assembled layers for module and scanner characterization. The modules are connected to the COMPET data-acquisition chain and the images are reconstructed with a novel geometry independent COMPET image reconstruction algorithm. Time and Energy resolution has been resolved and found to be 1.2 ns and 14% respectively. Tests for MRI interference and count rate performance has been carried out. The reconstruction algorithm has been verified with data acquired from COMPET full ring PET scanner.

quote your primary experiment

COMPET

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