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Performance characteristics of multi-mouse imaging on monolithic large flat panel PET

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This study introduces a novel small animal PET scanner aimed at overcoming limitations in preclinical imaging, specifically addressing the constraint of scanning a limited number of samples daily. The proposed scanner, featuring two flat panels with 16 BGO monolithic detectors each, demonstrates excellent spatial resolution (0.94 - 1.12 mm) with a 2mm depth of interaction (DOI) and high sensitivity (~38%). Capable of simultaneously imaging 12-60 mice, the scanner maintains spatial resolution across the entire imaging volume, making it a promising tool for high-population preclinical studies. The presented pre-clinical PET scanner significantly expedites small animal-based studies, offering researchers enhanced flexibility to include larger sample populations. With excellent system performance and the ability for multi-sample imaging, this advancement not only improves experimental efficiency but also broadens the potential insights derived from pre-clinical investigations.

Field

Systems and applications

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