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A novel GAGG/CsI scintillation phoswich detection device

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New GAGG/CsI phoswich assemblies are being developed at the Galician Institute for High Energy Physics, aiming to provide improvements in sensitivity, and spatial resolution for PET and SPECT medical imaging devices. The phoswich technique is used in PET developments to improve spatial resolution by obtaining the depth of interaction (DOI) measurement. In this work, a scanner detector made of two heads of CsI and novel GAGG scintillator phoswich units, and with ADP-based read-out, is presented. The first proof-of-concept with a prototype detector and simulations proved that the conceptual design described is a suitable candidate for a PET and SPECT imaging scanner. The first reconstructed images both with real and simulated data are shown. In addition, we propose also to use such device as a monitoring tool of gamma emission in test beams.

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