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Study of multipixel Geiger-mode avalanche photodiodes as a readout for PET.

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Multipixel Geiger mode APDs (also known as MRS APDs, AMPDs and SiPMs) with different structures and sensitive areas (from $1 \times 1 \text{ mm}^2$ to $3 \times 3 \text{ mm}^2$) have been studied as a readout for LSO, LYSO and LYAP scintillator crystals. Energy and timing spectra were measured using Cs-137 and Na-22 gamma sources. The results of this study allows us to conclude that this photodetector is a very promising candidate for PET applications.

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