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## First results of energy and timing resolution of FBK RGB-SiPMs coupled to Ce:GAGG scintillator

In this work we present the first results of energy and timing resolution of FBK RGB SiPM coupled to a novel gadolinium based scintillator crystal: Ce:GAGG (Ce:Gd<sub>3</sub>Al<sub>2</sub>Ga<sub>3</sub>O<sub>12</sub>). Ce:GAGG is a promising scintillator because of its attractive properties of very high light yield (46000  $\gamma$ /MeV), high density (6.63 g/cm<sup>3</sup>), good intrinsic energy resolution (4.9% @ 662 keV) and non-self radiation. We measured energy and timing resolution of this crystal when coupled to RGB-SiPM 50x50  $\mu$ m<sup>2</sup> cell. We considered two crystal geometries: "cube"like (3x3x5 mm<sup>3</sup>) and "PET"like (3.8x3.8x20 mm<sup>3</sup>). The "cube" geometry achieved a CRT of 275 ps with an energy resolution of 7.7% (@ 511 keV). These results are very promising not only for PET but also SPECT or gamma camera applications where the energy resolution is crucial.

### quote your primary experiment

FBK SiPM GAGG

**Author:** FERRI, Alessandro

**Co-authors:** GOLLA, Alberto (F); Mr TAROLLI, Alessandro (FBK); PIEMONTE, Claudio (FBK); Dr SERRA, Nicola (FBK); ZORZI, Nicola (Fondazione Bruno Kessler - FBK); Dr PRO, Tiziana (FBK)

**Presenter:** FERRI, Alessandro

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