## 2nd International Conference Frontiers in Diagnostic Technologies



Contribution ID: 117

Type: Posters

## Characterization of an imaging system demonstrator for PET applications

Tuesday, 29 November 2011 15:13 (1 minute)

Silicon Photomultipliers (SiPM) represent an effective alternative to photomultiplier tubes used in actual Positron Emission Tomography (PET) scanners. Exploiting the design solutions offered by the Silicon technology it is now possible to build small devices and to pack them in monolithic arrays at millimetric pitch. This feature allows overcoming the limit in spatial resolution imposed by the current devices.

A demonstrator of PET imaging system based on LYSO crystal arrays coupled to SiPM matrices is under construction at the University and INFN of Pisa. Two SiPM matrices, composed by 8 x 8 SiPM pixels, 1.5 mm pitch, have been coupled one to one to a LYSO crystals array and read-out by a custom electronics system. Front-End ASICs were used to read 64 channels of each matrix. Data from each Front-End were multiplexed and sent to a DAQ board for the digital conversion; a motherboard collects the data and communicates with a host computer through a USB port for the storage and off-line data processing.

In this paper we describe the methods adopted for testing the imaging system and the results obtained in terms of the parameters that qualify the performance of the system for PET application.

Presenter: MORROCCHI, MATTEO (PI)

Session Classification: Poster Session: presentation of posters