Detector for PET apparatus

DESCRIPTION OF THE TECHNOLOGY

A research group from CSIC has developed a photon detector cell that can be used in devices based on positron emission tomography (PET). The cell configuration provides high detection better than conventional systems.

The positron emission tomography (PET) devices consist basically of a functional scanner that allows 3D modeling inside the body of a patient for the diagnosis of tumors. The techology under these devices is based on photonic detection using a 511 keV photon detectors ring surrounding, forming a ring detection section of the patient's body scanned . The new detector developed by our research team has a configuration which makes it particularly suitable for medical applications because of their high efficiency photon detection thanks to the combination of a sealed cell filled with liquid Xenon and Silicon photomultipliers coated with tetraphenylbutadiene (TPB).

MARKET APPLICATION SECTORS

Medical device companies.

TECHNICAL ADVANTAGES AND BUSINESS BENEFITS

- Excellent resolution in the measurement of the photon energy of 511 keV capable of being used in a PET apparatus
- Excellent temporal resolution in the measurement of time of arrival of these photons , allowing improved apparatus PET technique called PET- TOF (time of flight)
- Good spatial resolution in the three coordinates defining the interaction of photons in the detection cell.
- In addition, this cell can be used as a constituent element of PET apparatus compatible with magnetic resonance imaging systems because none of its components is affected by the strong magnetic fields associated with this technique.

CURRENT STATE OF DEVELOPMENT

The technology is ready to be marketed by companies in the medical device sector.

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INTELLECTUAL PROPERTY RIGHTS

Spanish priority application filed

COLABORATION SOUGHT

An instrumentation company interested in licensing is sought for its development and commercialization.

RELATED IMAGES

Detector of particles

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