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## PET technology, from the laboratory to the clinic

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Positron Emission Tomography (PET) imaging constitutes the molecular imaging technique of excellence and is used to evaluate a radio-tracer uptake by an organ. To obtain PET images, patients are injected with radioisotopes that decay inside the patient body emitting a positron that subsequently annihilates with a core electron of the patient body, emitting two opposite 511 keV gamma-rays. PET detectors are optimized for the specific energy of 511 keV and their operation principle is based on opposed detectors measuring in coincidences these two emitted gamma-rays.

After the image reconstruction processes a tomographic emission image is generated. To provide high quality

In this talk, the design, optimization, and implementation of these components is reviewed, starting at t

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