WPJET4 Gamma Camera Upgrade (GCU)

D17	19 detectors (crystals +photo detectors+magnetic shielding+power supply+accessories) delivered to IPPLM

Replacing the existing gamma-ray detectors of the camera for improving the energy resolution and count rate capability needed for operation in the DT campaign. Target values are an energy resolution of 5% at 1.1 MeV and a count rate capability exceeding 500 kHz.

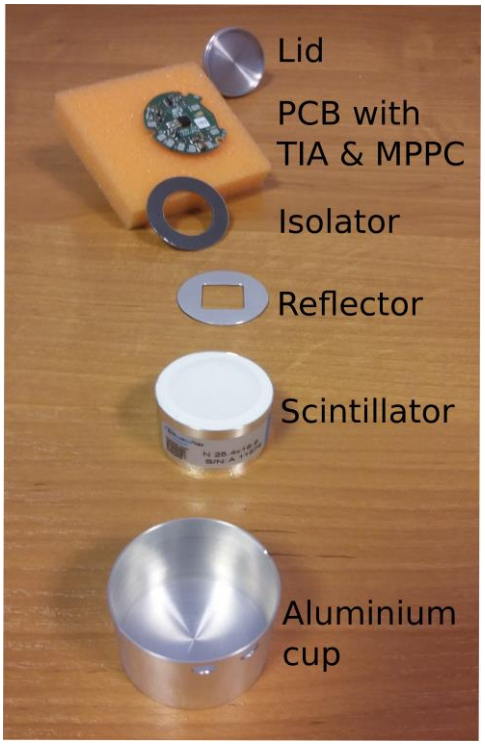
For the upgraded Gamma Camera in the new detector setup $LaBr_3$:Ce-based detectors will be used coupled to MPPC with TIA.

Necessary scintillators and electronic elements were ordered and delivered to the National Centre for Nuclear Research (NCBJ) in 2016:

- $LaBr_3$:Ce scintillators from St Gobain,
- MPPC type S13361-3050NE-04 from Hamamatsu,
- aluminum capsules,
- printed circuit boards for FilterBoxes@NCBJ production,
- printed circuit boards for MPPC temperature compensation device MTCD@NCBJ production,
- elements for transimpedance amplifiers (TIA),
- temperature sensors.

Below a set of selected photos of delivered elements is presented with a description of basic properties:

1. **detector elements mounted in a capsule**



2. printed circuit board for MTCD@NCBJ

- communication between MTCD@NCBJ and FilterBox@NCBJ,
- input and output synchronization of the whole system.

3. FilterBox@NCBJ

- high voltage power supply filters,
- power supplies for active elements placed inside each detector capsule,
- temperature readout from a temperature sensor to be sent to MTCD@NCBJ.