Detectorlab

4.11.09   D.Fehlker

Overview

People:

Master students: Andreas, Camilla, Hege, Jostein, Kristian, Kristine, Lars-Halvard, Per-Ivar, Stian

PhD: Njål

Postdoc: Heidi, Shiming

Professors: Gerald, Bjarne, Dieter, Renate, Kjetil

Engineers: Dominik, Werner, Kåre

Measuring stations

•Secondary setup:

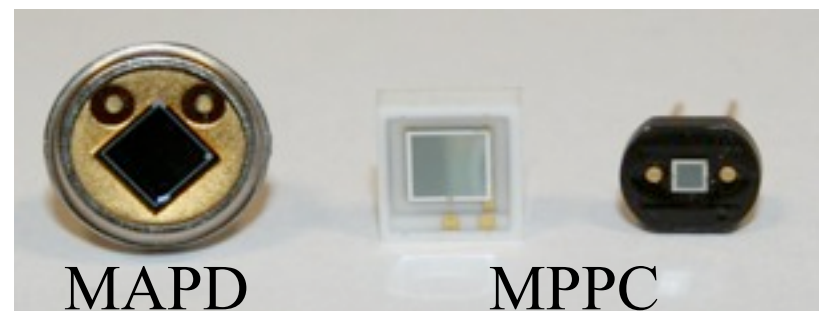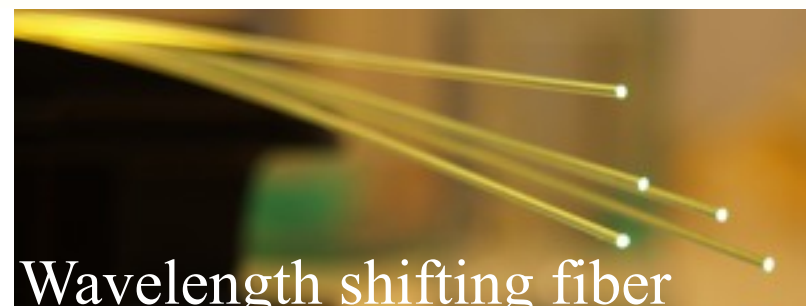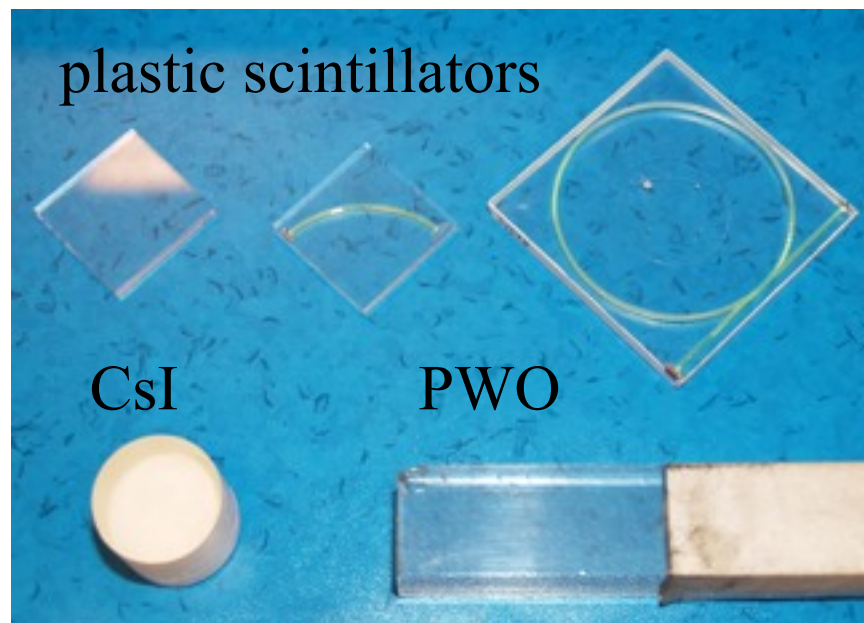4 channel, 14bit, 2Ghz oversampling ADC,   Linux + Labview

•Main setup:

4 channel, 14bit, 2Ghz oversampling ADC,   Windows + Labview

Projects

(Lars-Halvard, Jostein, Per-Ivar, Hege)

- Test and characterisation of different crystals and scintillators
- Characterisation of the detectors

plastic scintillators

CsI   PWO

Wavelength shifting fiber

MAPD   MPPC

Projects

(Andreas)

- Measurement of individual pixels
  - crosstalk, ...

50x50μm pixelsize

25x25μm pixelsize
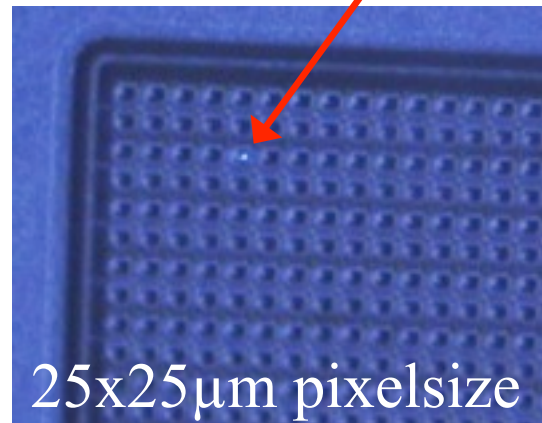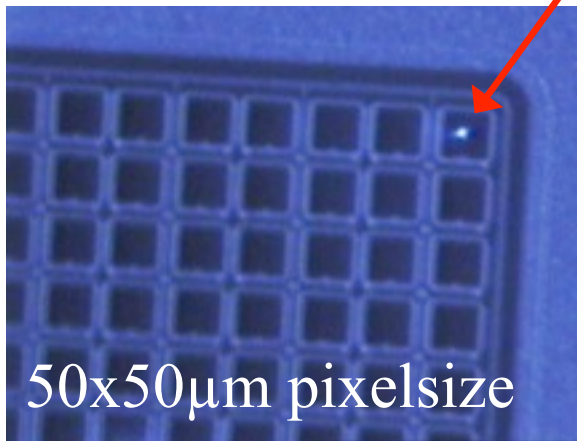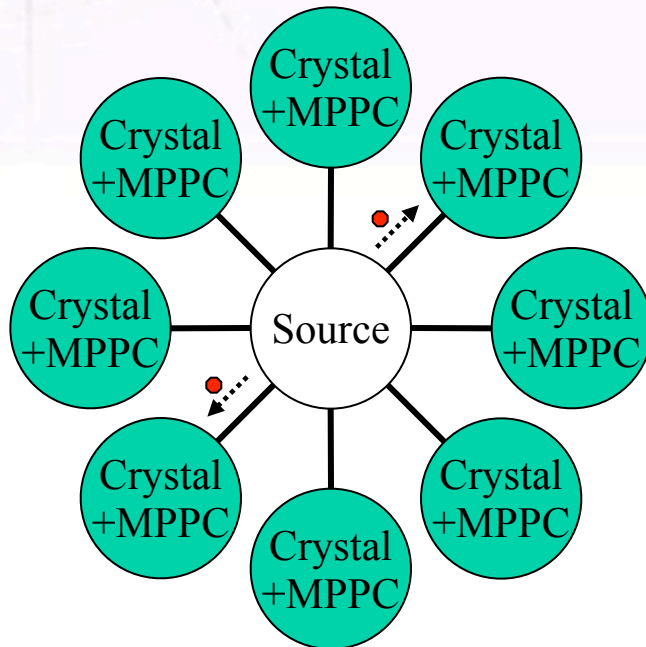
Projects

(Stian)   (Njål)

Time of flight measurement

Animal Pet PET system

• complete read out system (MPPCs, preamp, ADC, DAQ)

• 511 keV photons emitted back to back

Projects

- **Detector prototype for SuperB (Gerald Eigen):**
  - lefthanded and righthanded spirals, straight sections
  - each fiber has MPPC at the end
  - sections are connected left connected

    via bridges for better mechanical handling and stability

- We start to measure crosstalk between the detectors, then gradually increase the size of the gap

  WLS shifting fiber

  gap between WLS fibers
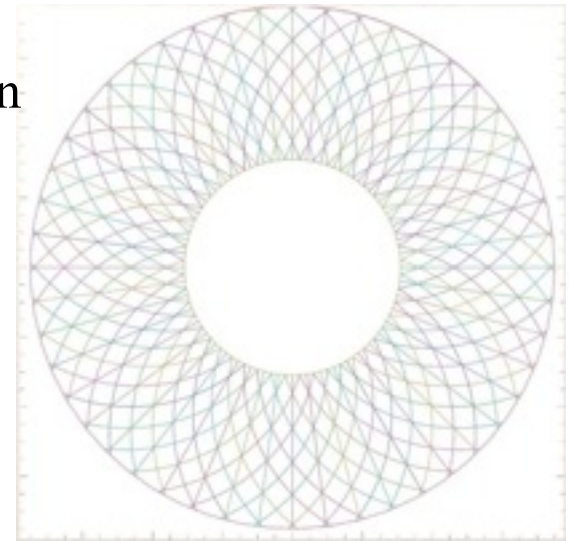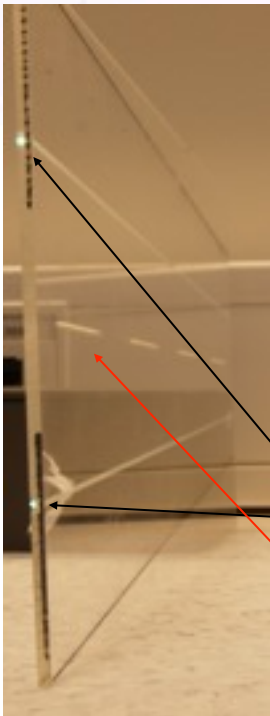
Projects
(Camilla, Kristian, Njål)

•Neutron detectors:

Bubble detectors,   fission counter,   SRAM based counter
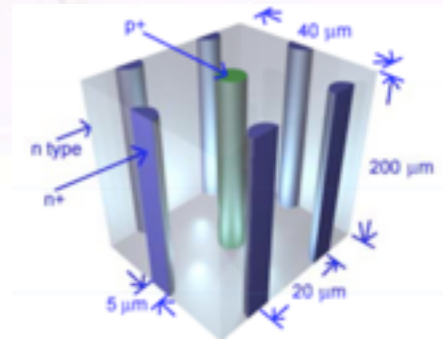

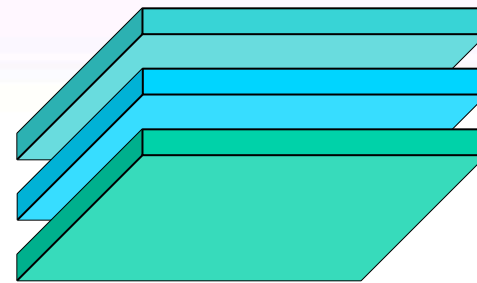•working closely together with the Haukeland hospital

Projects

(Kristine, Shiming)

- 3D detectors

-> Kristines presentation

- 3D integrations

- Front End Electronic
- Amplifier
- ADC

- more compact
- power saving

Questions?

Thank you!