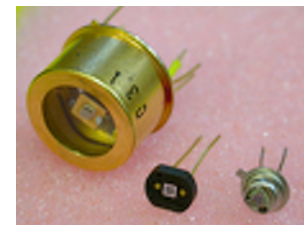


Novel type of photosensor : Geiger Mode multi- pixels APD



ND280 Scintillator Detectors

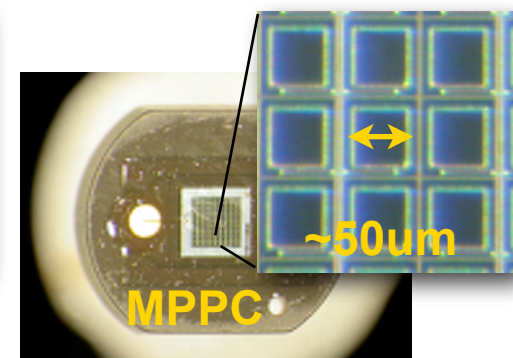
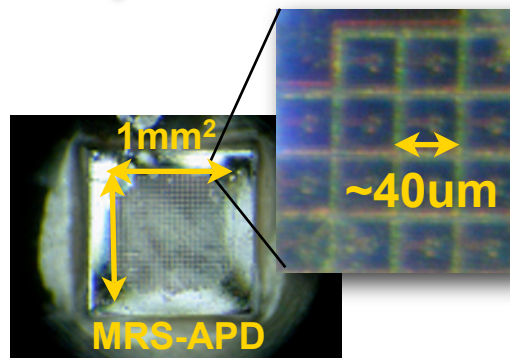
Constraints :

- Magnetic Field
- Very tight space constraints
- Low light yield at end of WLS fibre
- High number of channels
- Detector operation 5 years



GM-APDs

- Insensitive to magnetic field, tested to 4T
- Small (active area $\sim 1\text{mm}^2$)
- Bias voltage 50V
- Photon detection efficiency $>20\%$ at 500nm
- Gain $G \sim 5 \times 10^5$
- Low power consumption
- Dark count rate $\sim 0.5\text{MHz/mm}^2$ at 25°C
- Longevity OK



$$\text{Signal} = \sum_i Q_i^{\text{pixel}}$$

*Photo-electron resolution
+ dynamic range combined in 1 sensor*

