

Perspective on TOF R&D at Padua

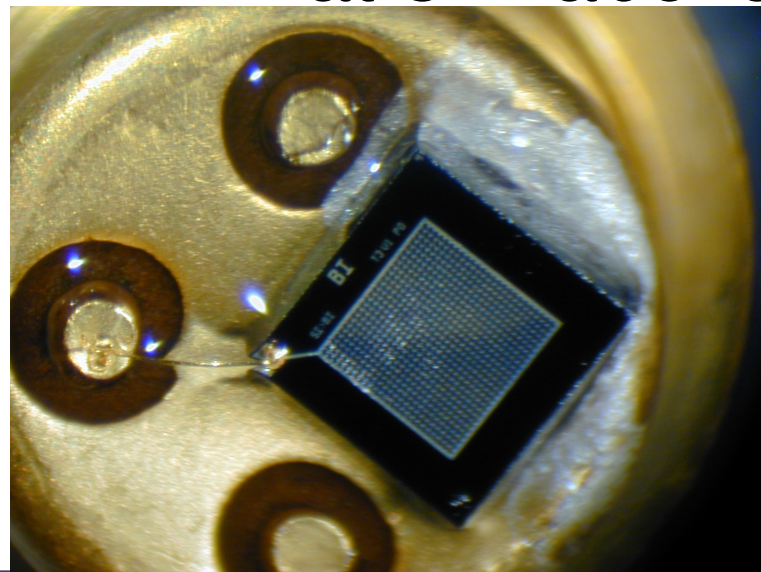
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R&D plans

- study SiPM produced byIRST
 - IRST: research institute funded by Trentino Alto Adige region
 - IRST is interested in developing a device with a time resolution in the 10 ps range
 - some old measurements give a value around 50 ps

IRST SiPM

- breakdown voltage: 31 V
- 10^6 gain at 3 V above breakdown voltage
- low optical cross-talk between micro-cells
- dark count of the order of 1-2 MHz at 3 V above breakdown voltage





status in Padova

- acquired some hardware for lab tests:
 - laser Advanced Laser Diode Systems PiL040 @ 409 nm with EIG1000D control unit
 - Ortec 9327 amplifier
 - Becker & Hickl SPC-130 TDC (8 ps FWHM / 5 ps rms)
 - Agilent DSO80604B 6GHz oscilloscope
 - 2 Photonis XA85011/A1 photomultipliers
 - 10 mm pore
 - proximity focus gap



near future plan

- measure time resolution of current SiPM and compare it with that obtained with XA85011 with laser
- interact withIRST for SiPM development