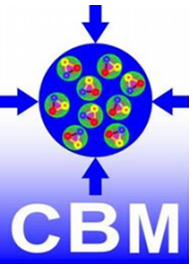
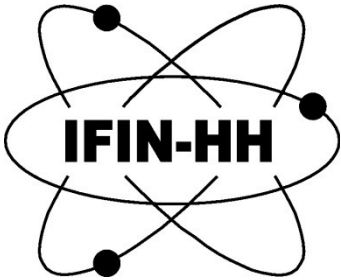
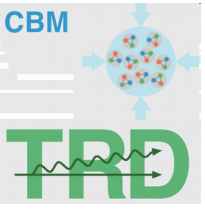
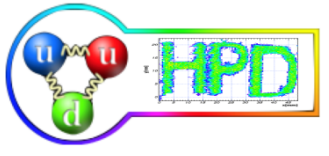


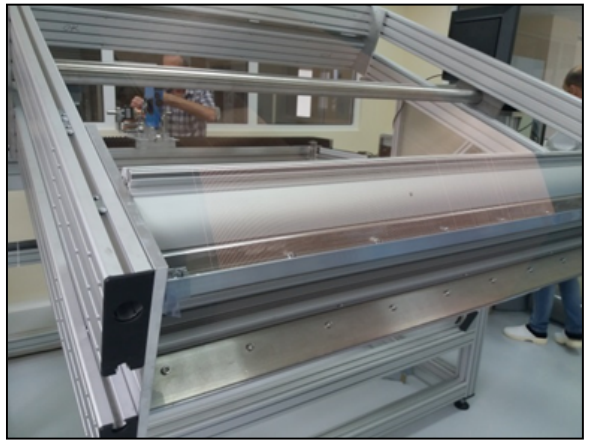


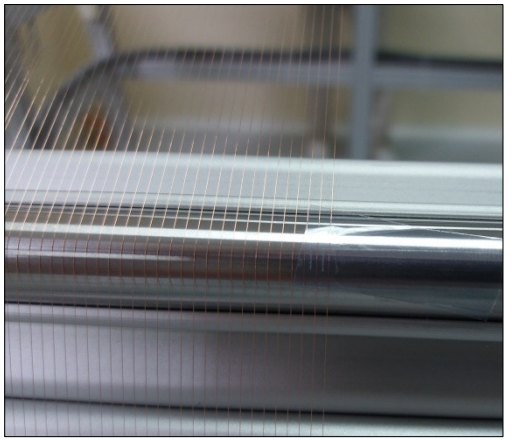
TRD-2D QA Tests

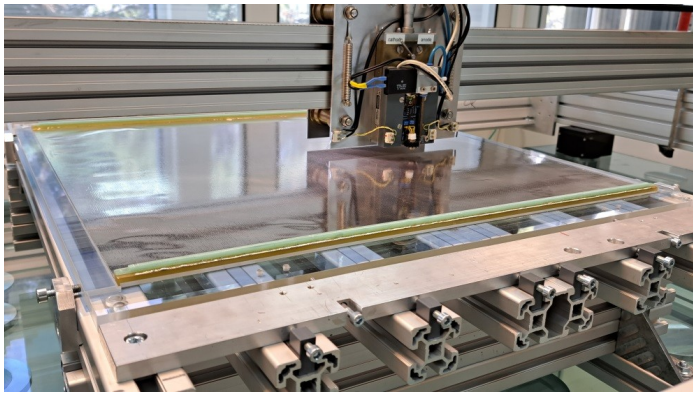


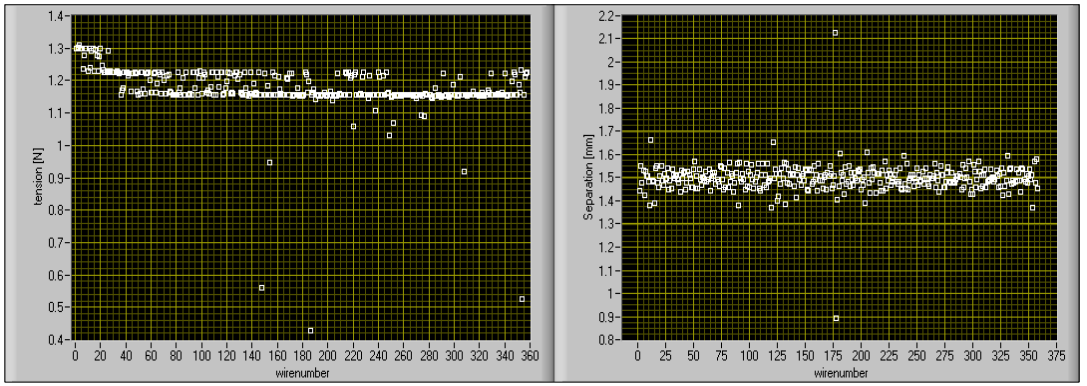


Prototype assembling







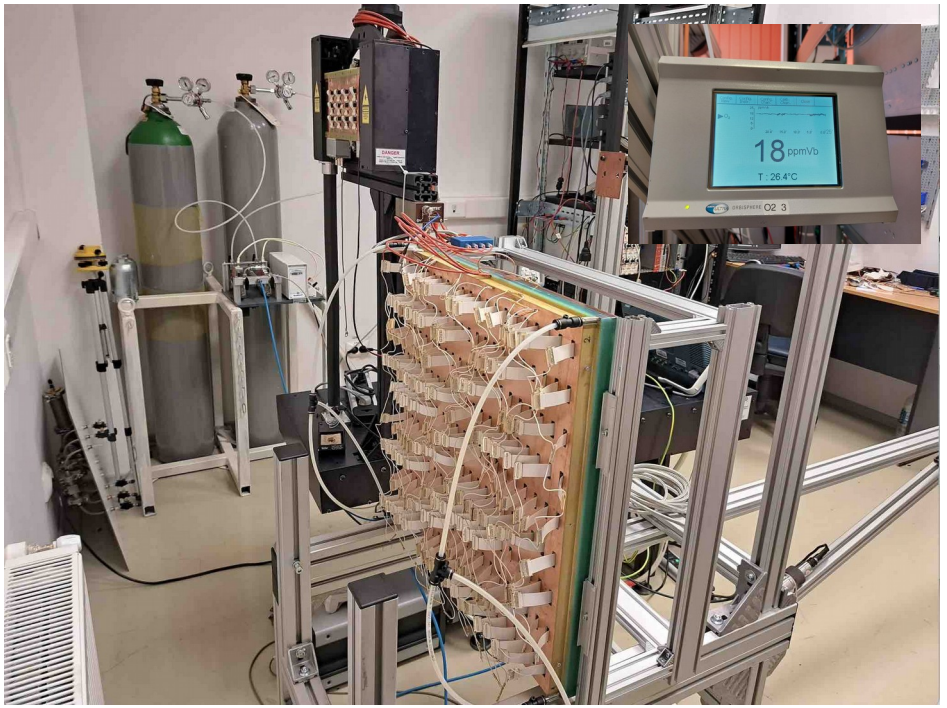


Much more details in Laura's talk at the Collaboration Meeting in Warsaw.

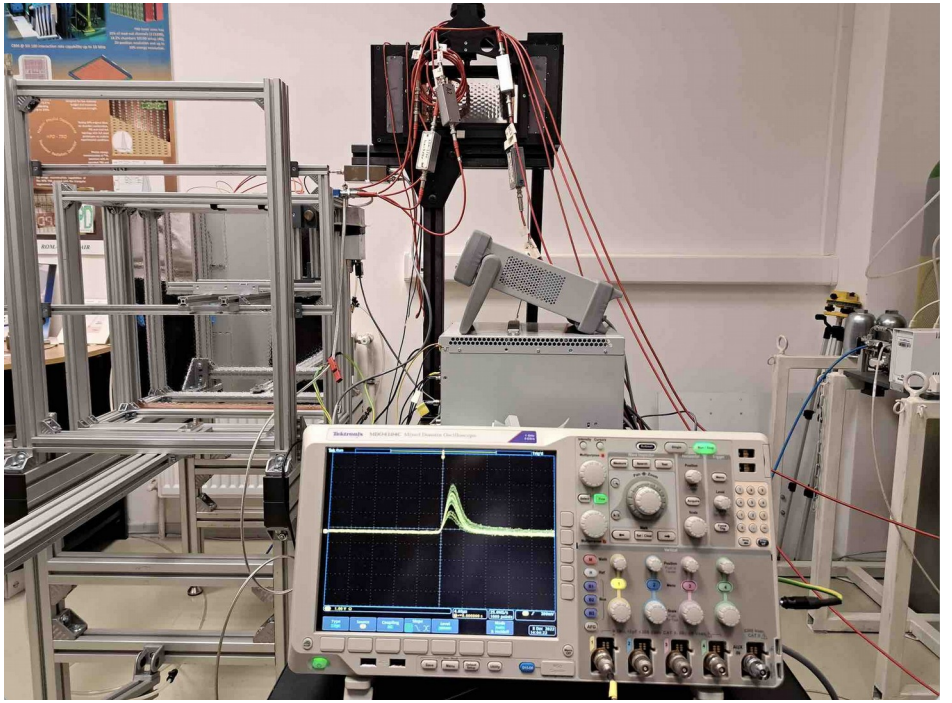
Cathode wires were aligned with 1.5 mm combs produced at GSI – our thanks to Mladen!
Mechanical wire tension has been possible to be measured only for glued cathode wires.
The machine has not been able to measure the anode wire tension due to their short length.
The anode wires were only visually inspected.
Anode wires split in 4 HV sections.

Prototype preliminary tests

Tightness

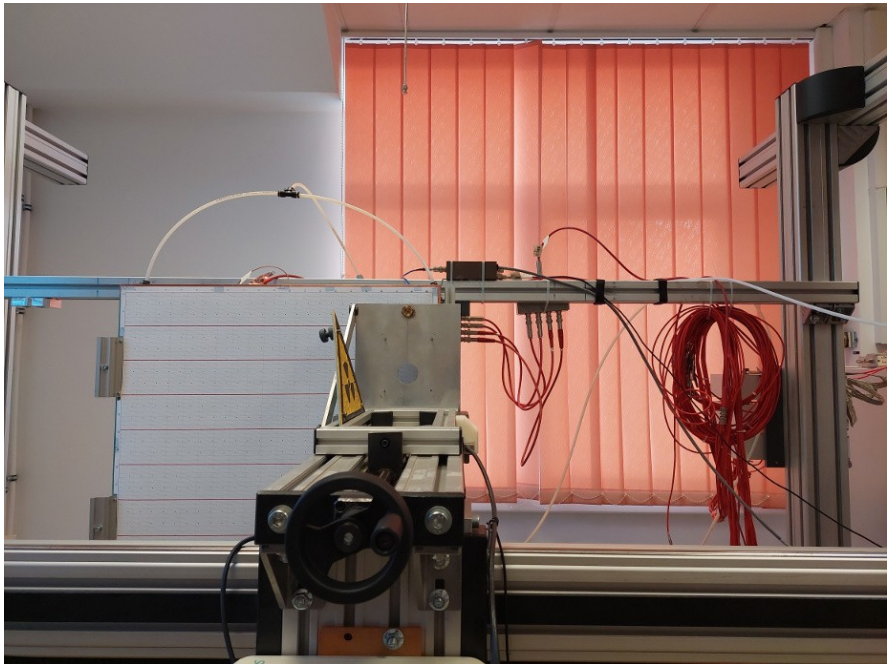


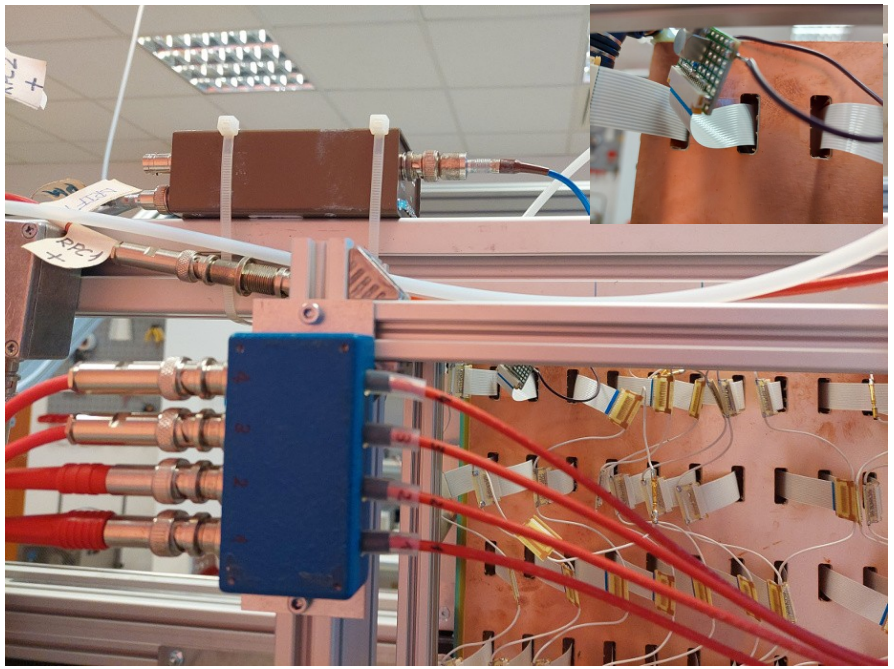
First ^{55}Fe signals

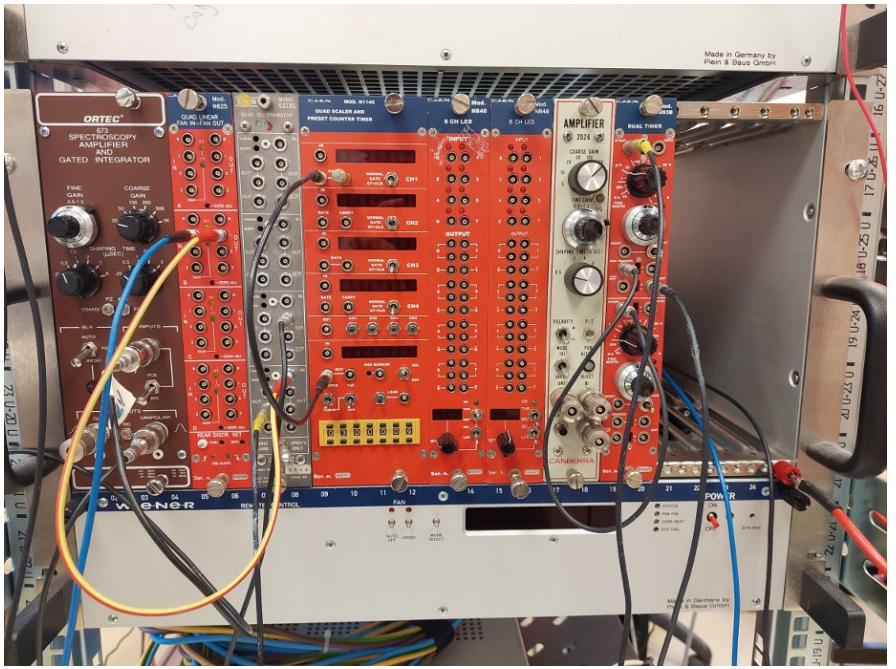


Gas mixture: 80%Ar + 20% CO_2

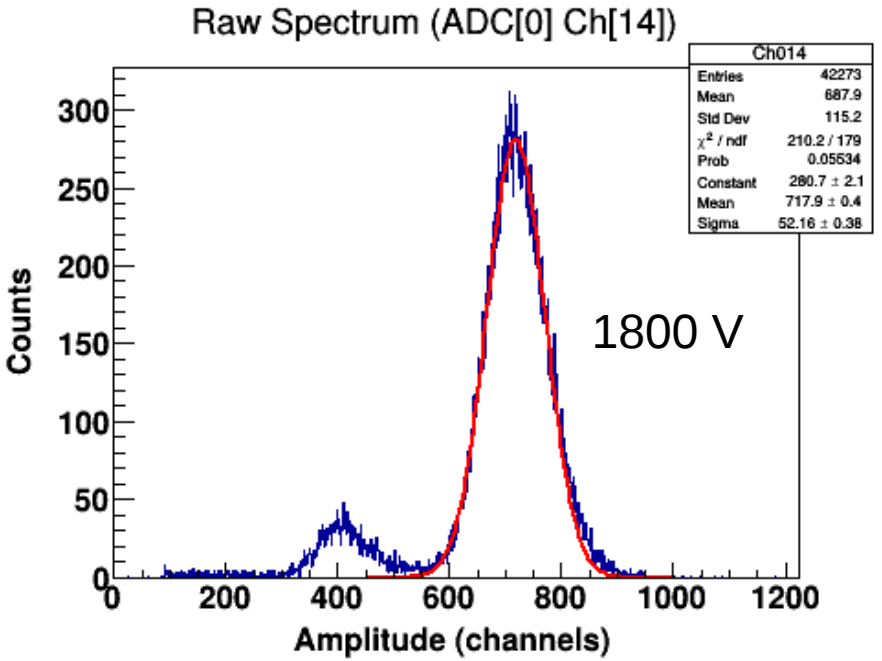
Commissioning tests – experimental setup

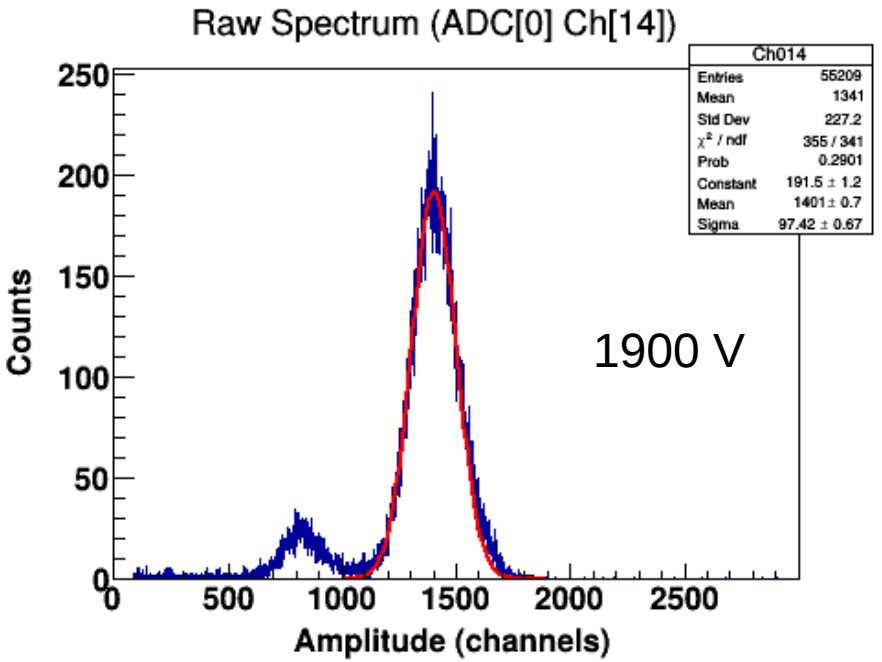


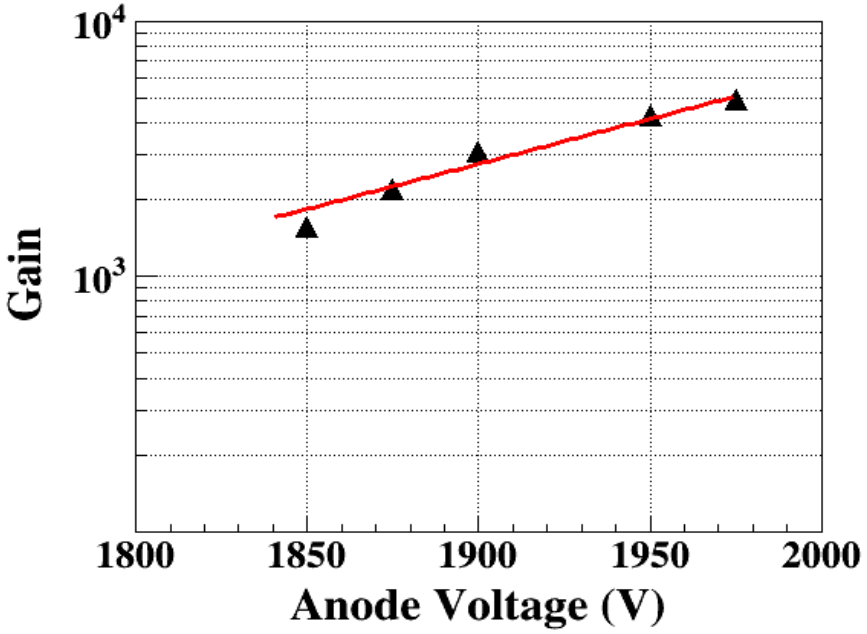


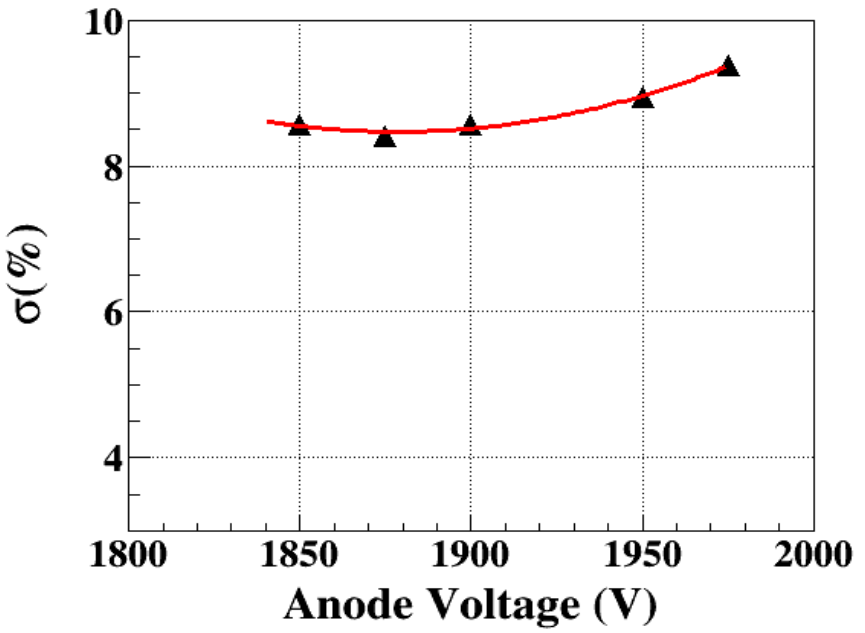


^{55}Fe source spectra



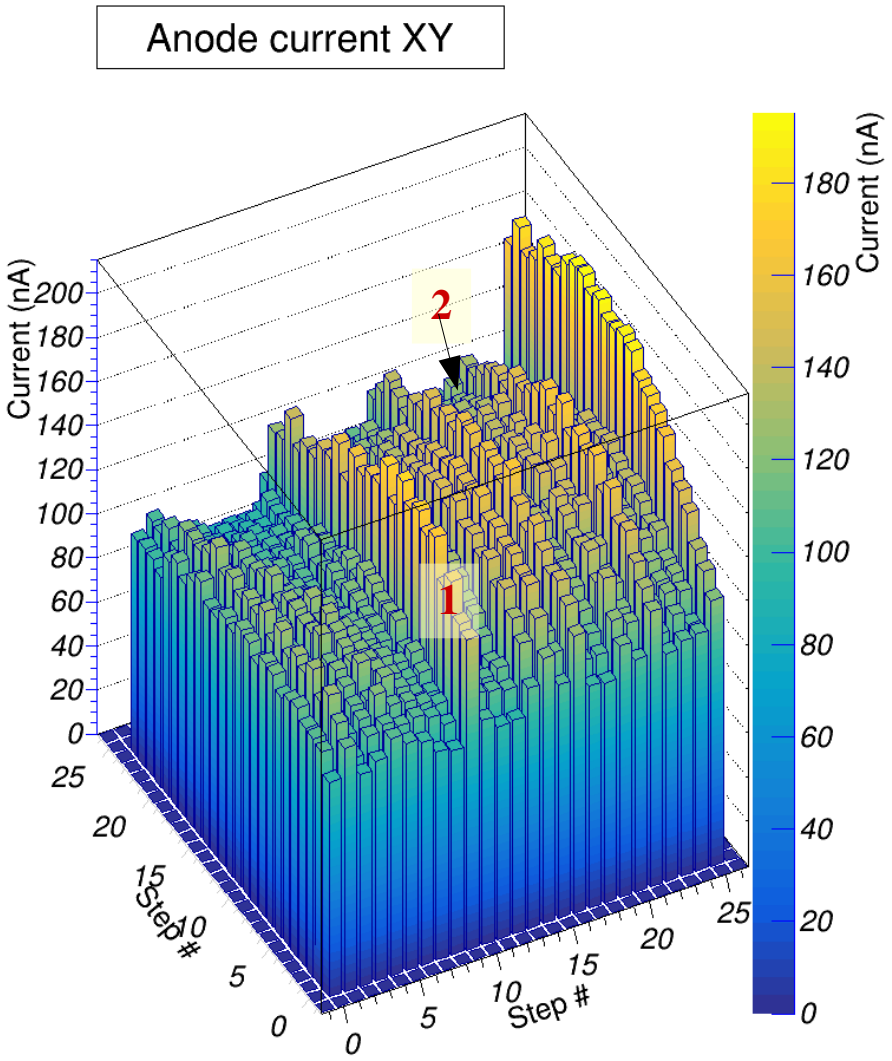






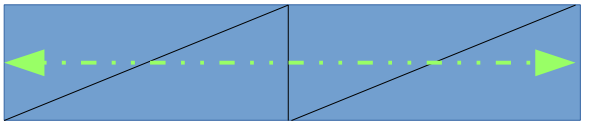
Gain uniformity test

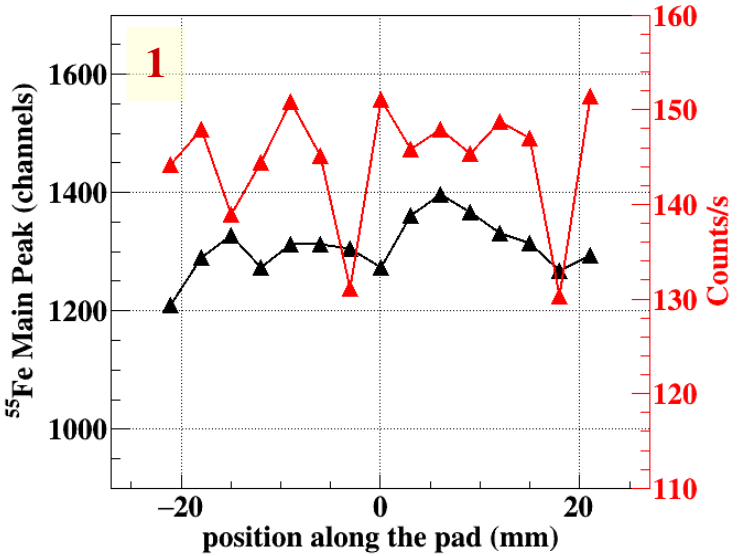
- collimated ^{55}Fe source
- active area was mapped in steps of 2 cm

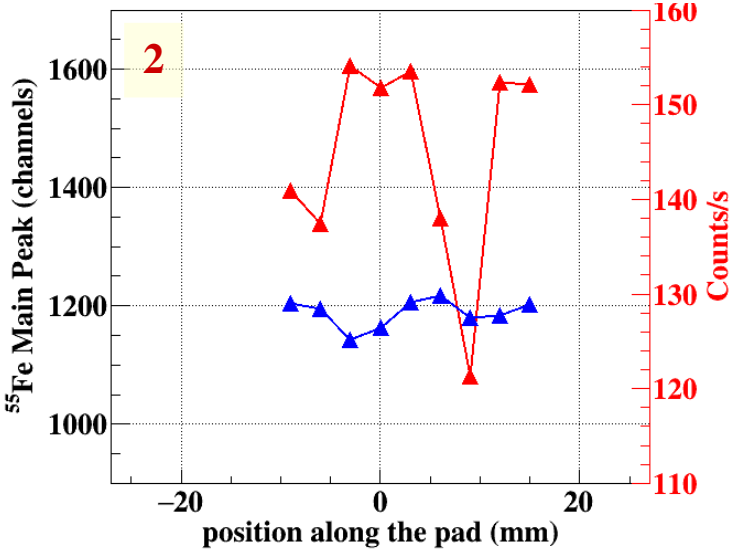


Non-uniform tensioned anode wires

1D scanning, 3 mm step, across the wires using collimated ^{55}Fe & spectrometric chain

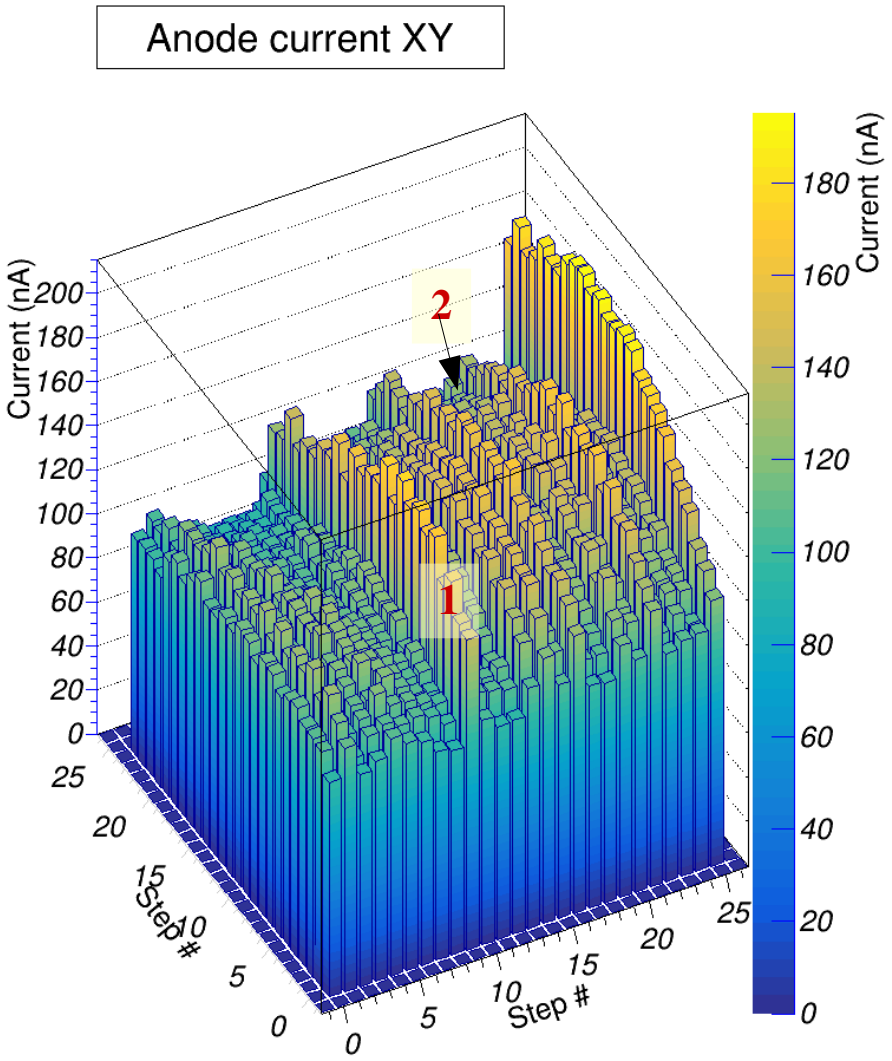






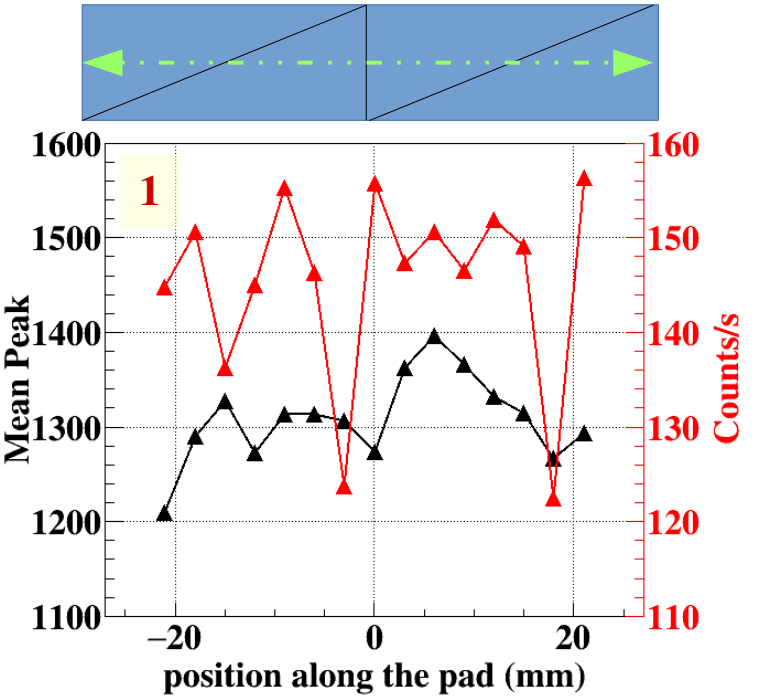
Gain uniformity test

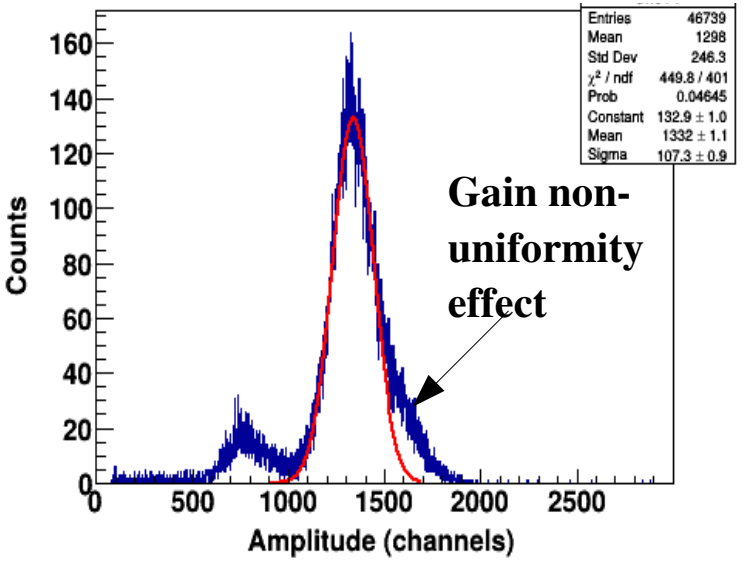
- collimated 55 Fe source
- detectors surface was mapped in steps of 2 cm



Non-uniform tensioned anode wires

1D scanning, 3 mm step, across the wires using collimated ^{55}Fe & spectrometric chain



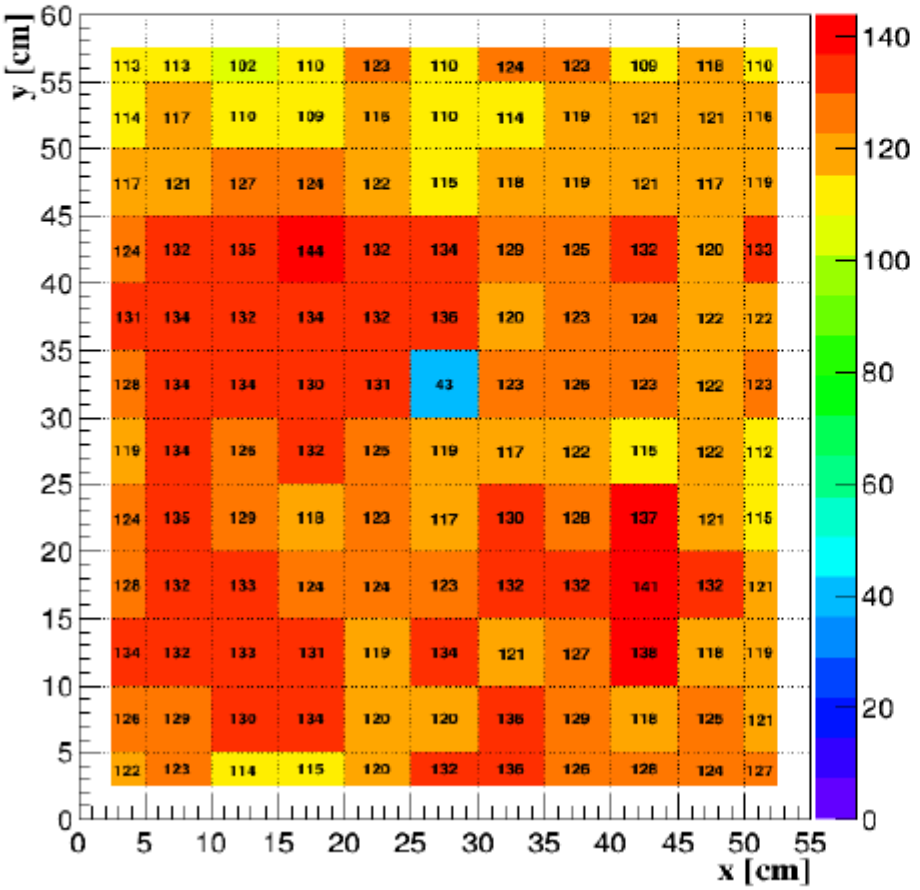


TRD2012 – currently installed in mCBM

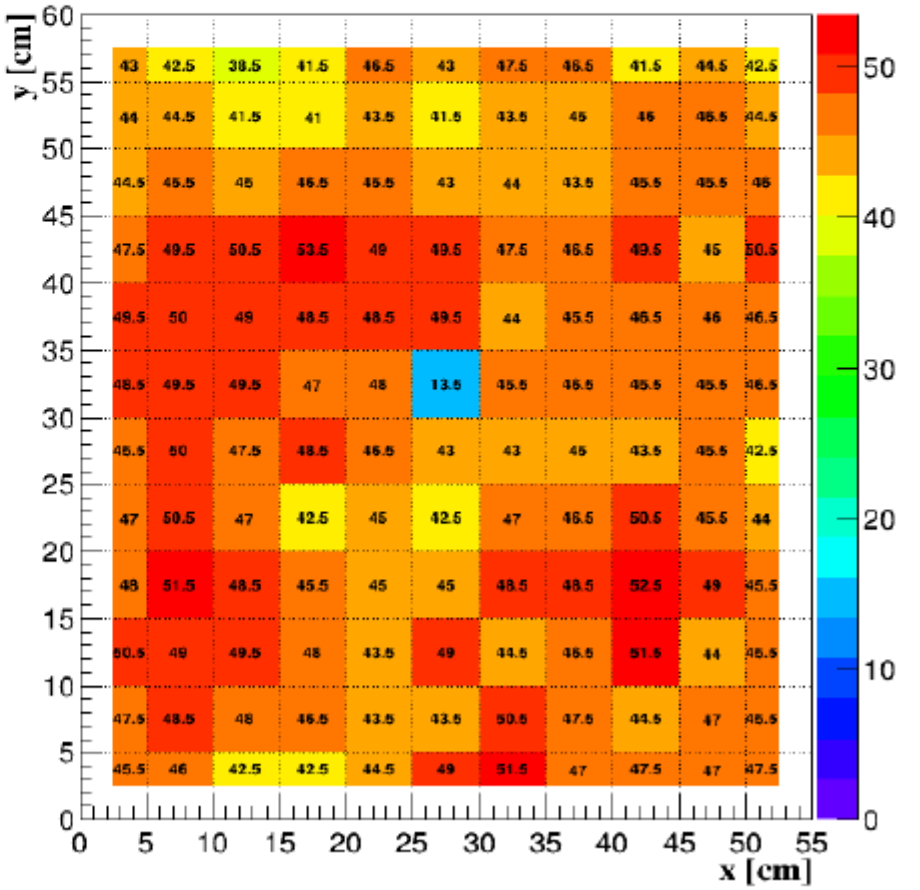
Detector gain uniformity

- operated detector: **TRD 2012 prototype**
- gas mixture: Ar+CO_2 (80%+20%)
- a collimated ^{55}Fe source
- detectors surface was mapped with a step of 5 cm, starting from a corner

I_{anode} [nA]

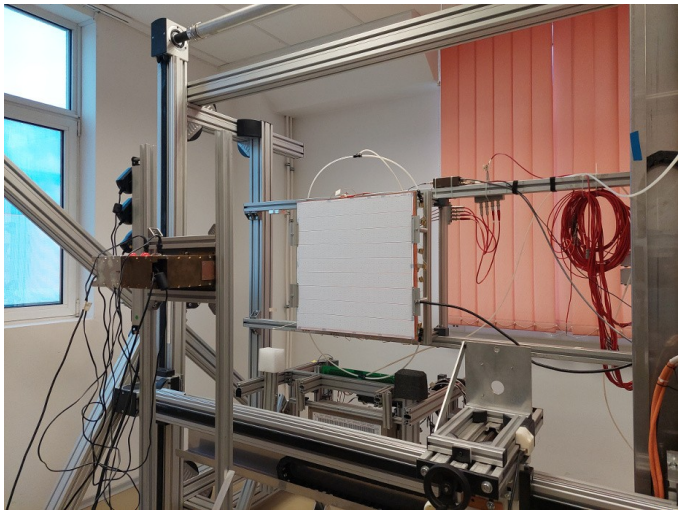


I_{pad} [nA]



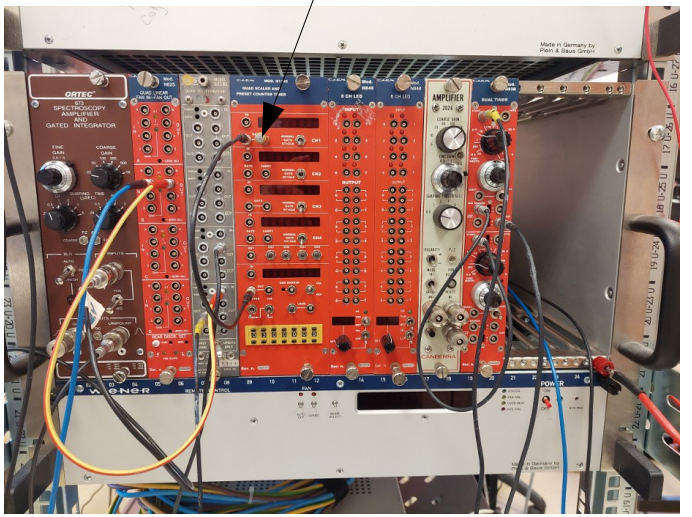
Exposure to high intensity X-rays

Experimental setup

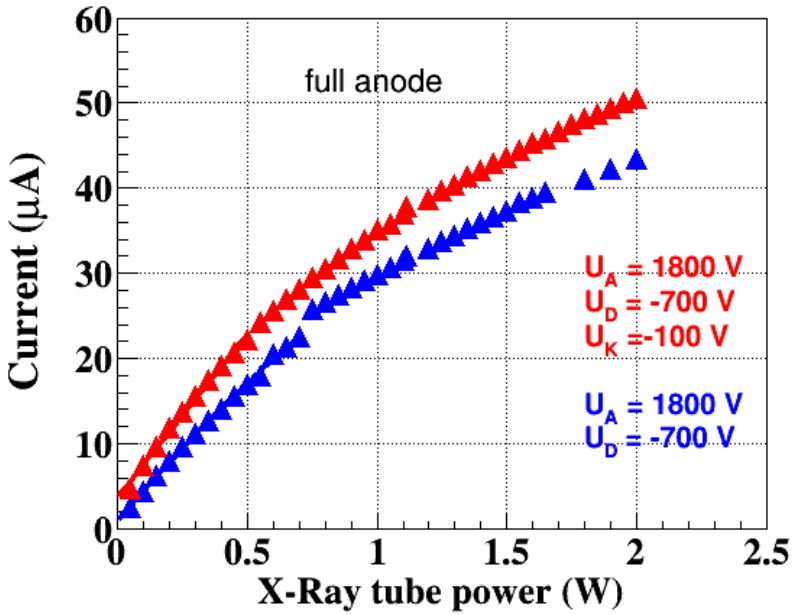


Detector current measurement

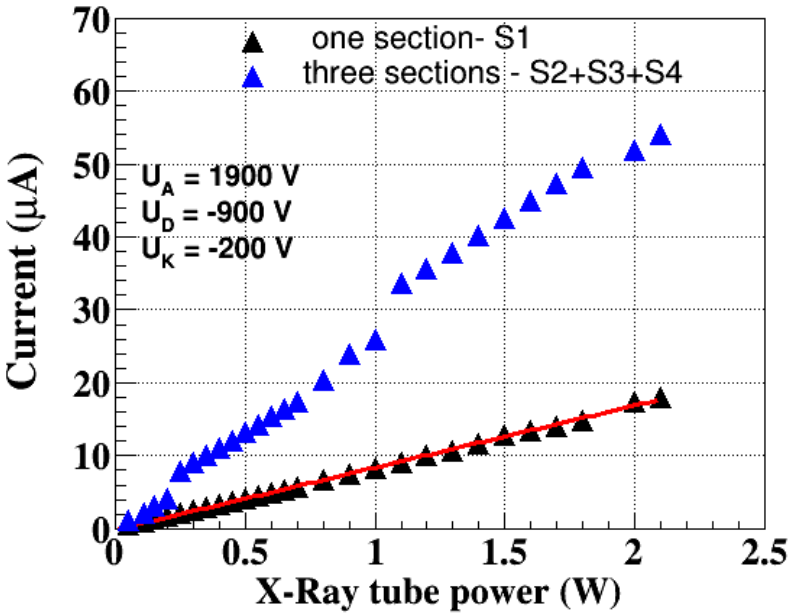
Counting rate of a rectangular pad recorded with a scaler



Gas mixture: 90%Ar + 10% CO_2

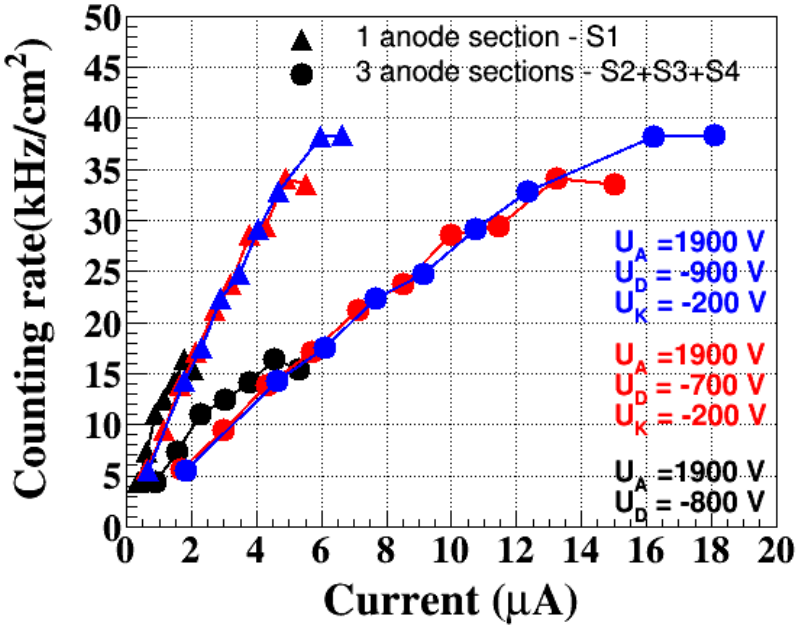


Gas mixture: 80%Ar + 20% CO_2

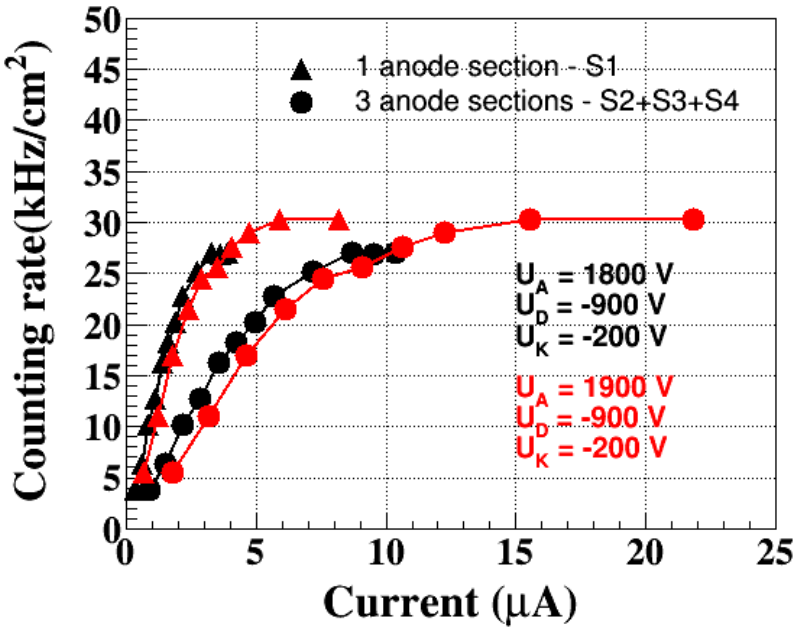


Exposure to high intensity X-rays
Space charge effect

Counting rate ->Triangular pad



Counting rate ->Rectangular pad

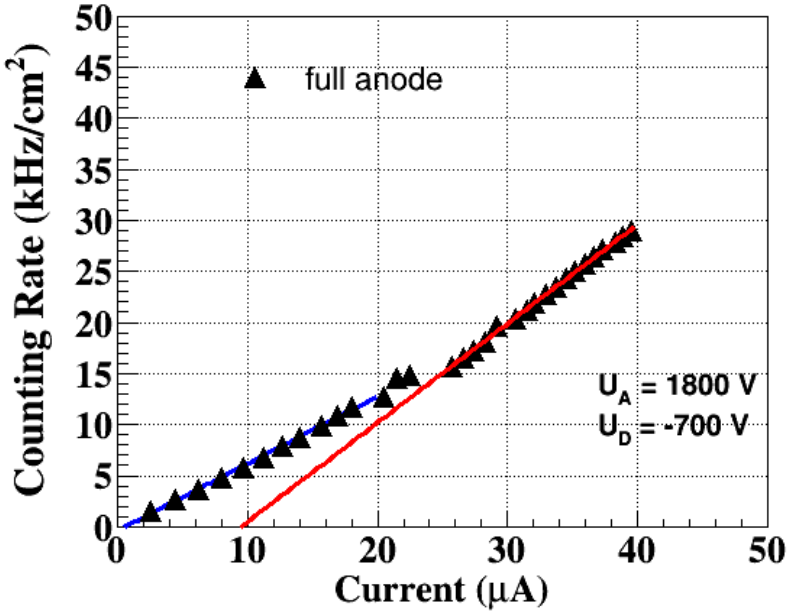


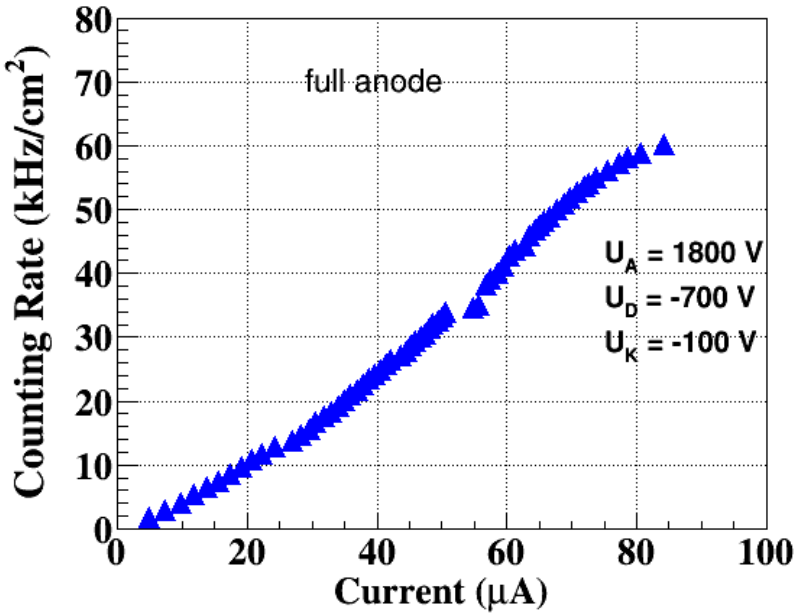
Gas mixture: 80%Ar + 20% CO_2

Flow: 6 l/h

Exposure to high intensity X-rays
Space charge effect

Counting rate ->Rectangular pad

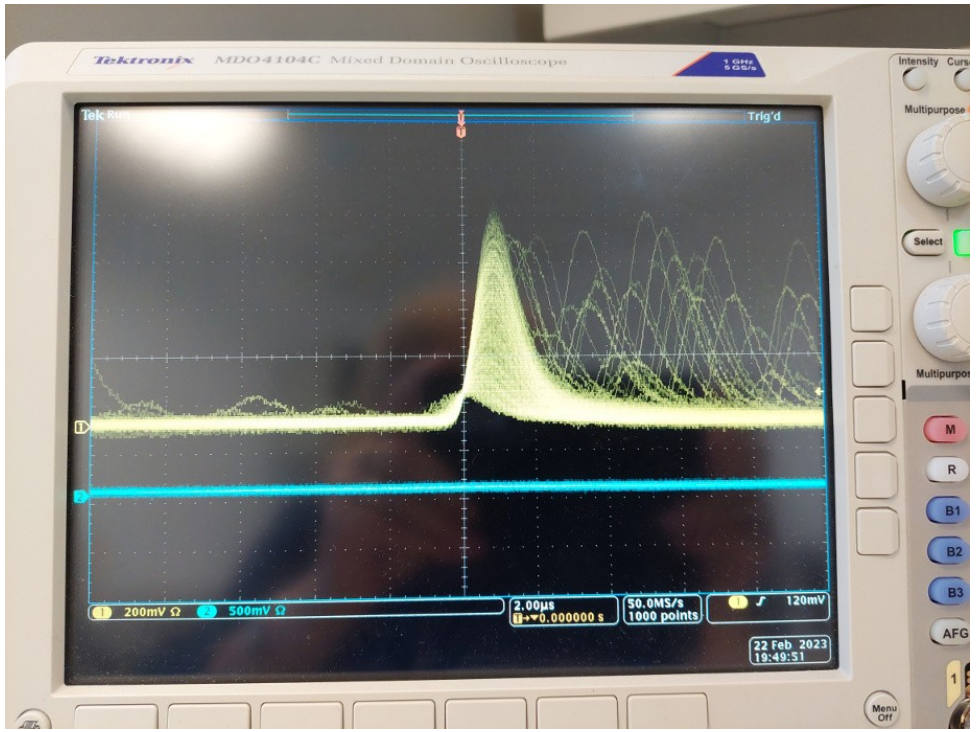




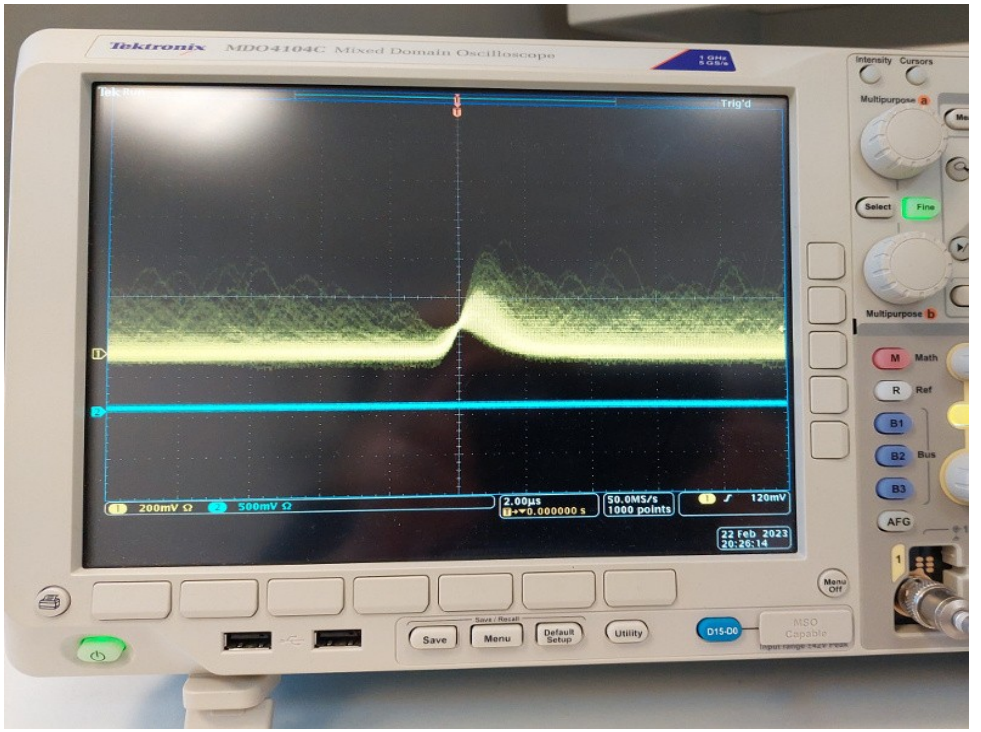
Gas mixture: 90%Ar + 10% CO_2

Flow: 6 l/h

Exposure to high intensity X-rays
Space charge effect



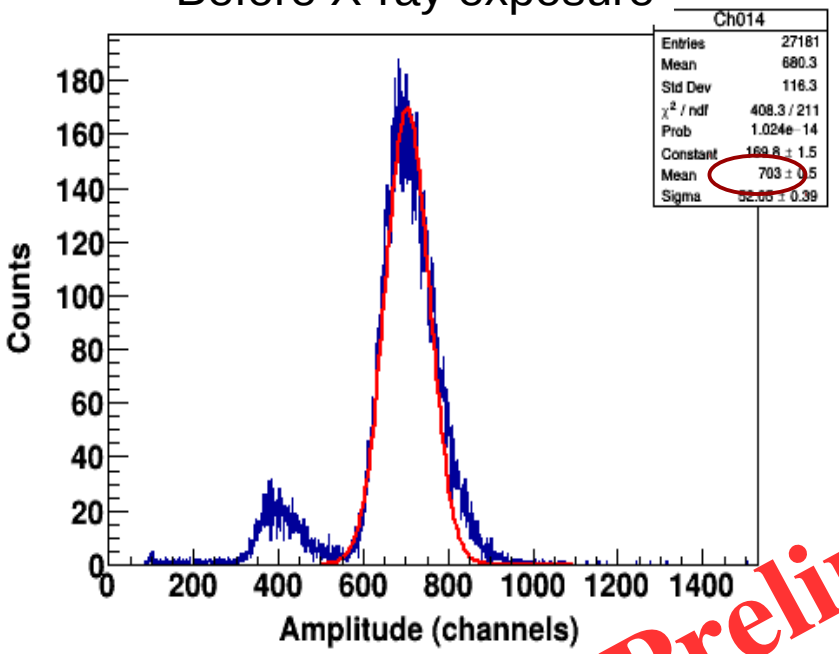
Low rate (15:18 h)



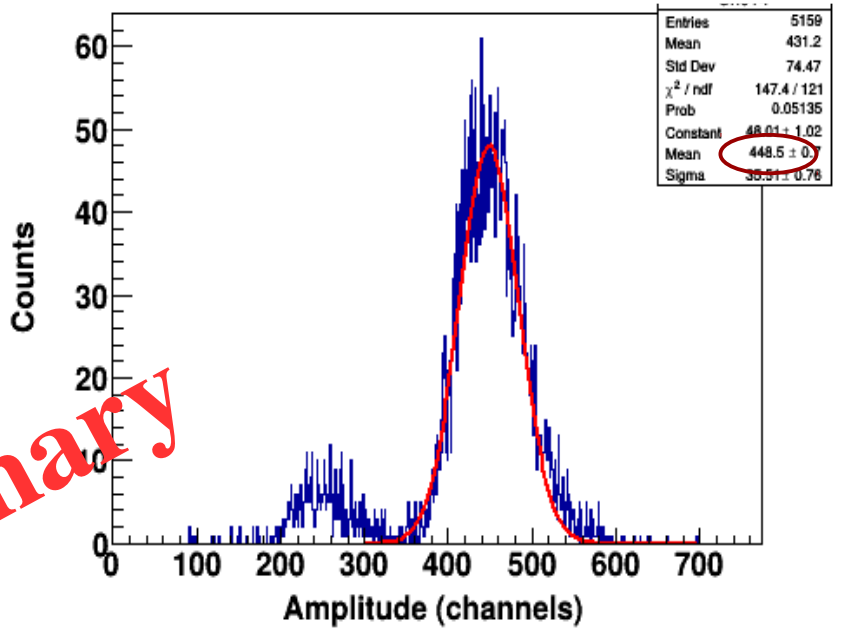
High rate (15:55 h)

Gain hysteresis

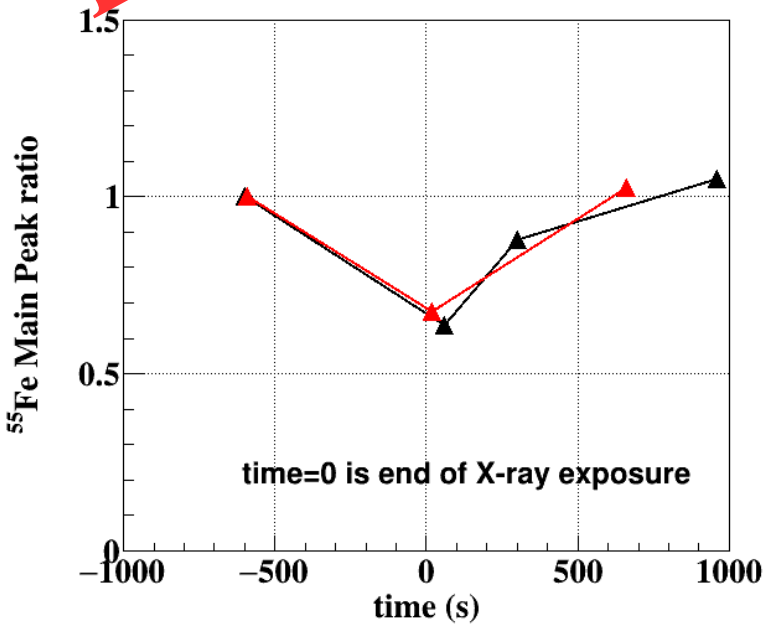
Before X-ray exposure



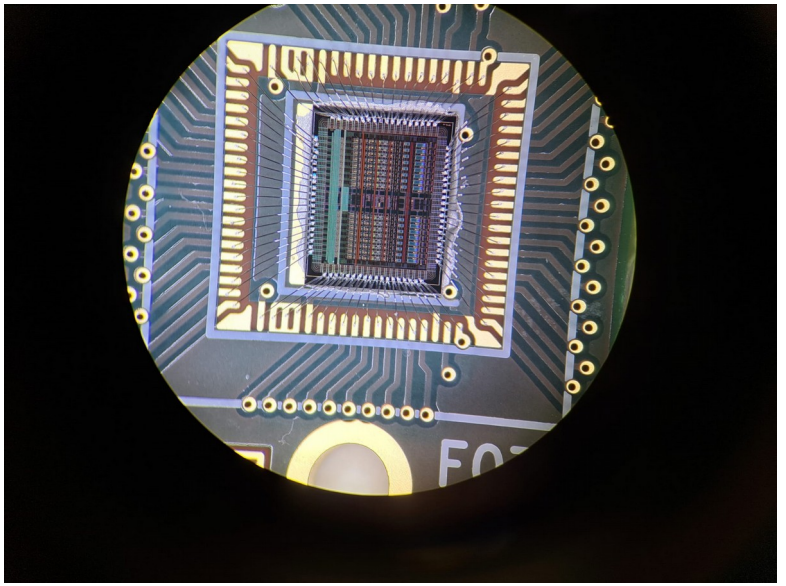
After 10 min X-ray exposure @ ~28 kHz

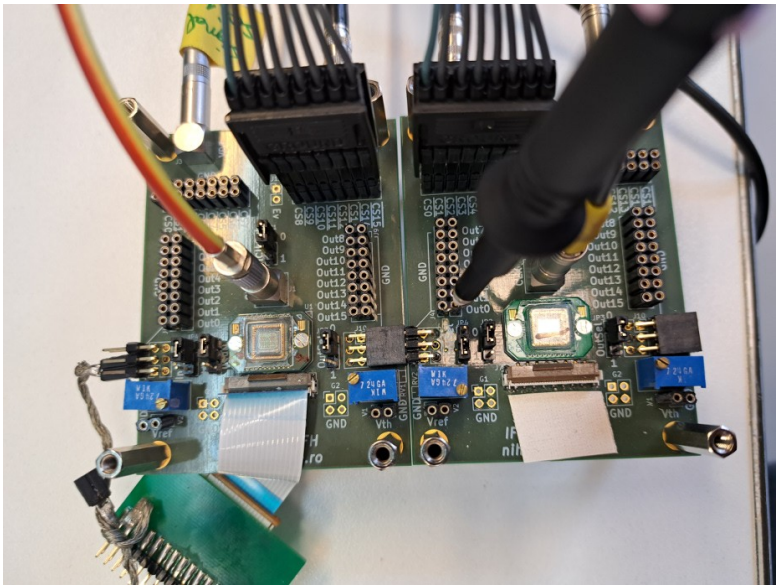


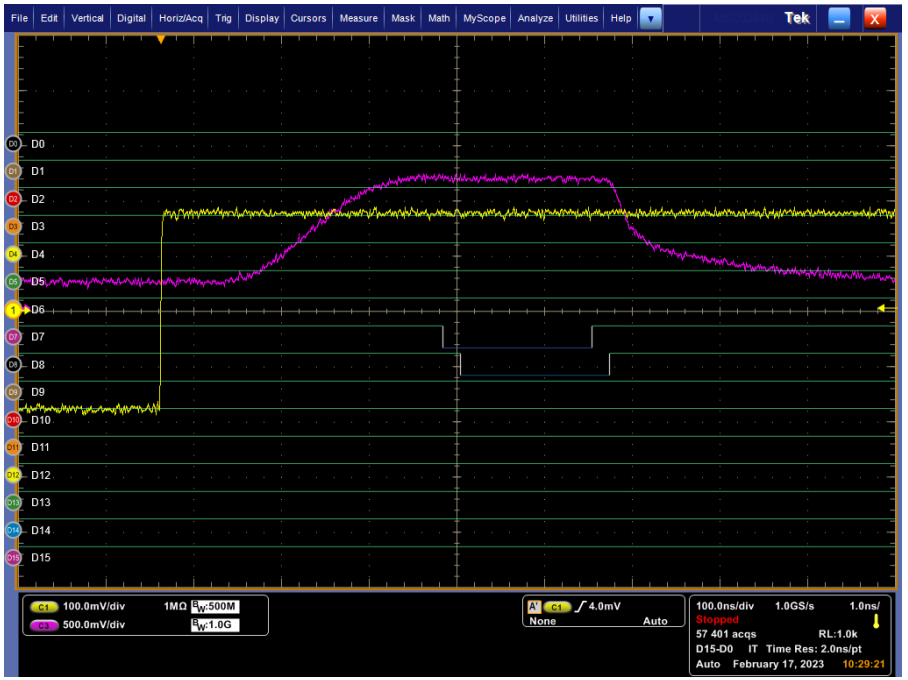
Preliminary



500 chipuri comandate
3 +1 bondate in DFH
490 chipuri la bondat
10 raman in departament







Summary & Outlook

People involved in the presented activities:

Cristian Andrei, Valerica Aprodu, Daniel Bartos, Alexandru Bercuci, Daniel Dorobantu, Gheorghe Caragheorgeopol, Vasile Catanescu, Viorel Duta, Andrei Herghelegiu, Mariana Petris, Mihai Petrovici, Andrei Radu, Laura Radulescu, Claudiu Schiaua, George Stoian

We thank Mladen for his precious help!