

# Downstream PIN Diode Detector

(Preparation for the test with titanium beam 15-19 of May 2012)

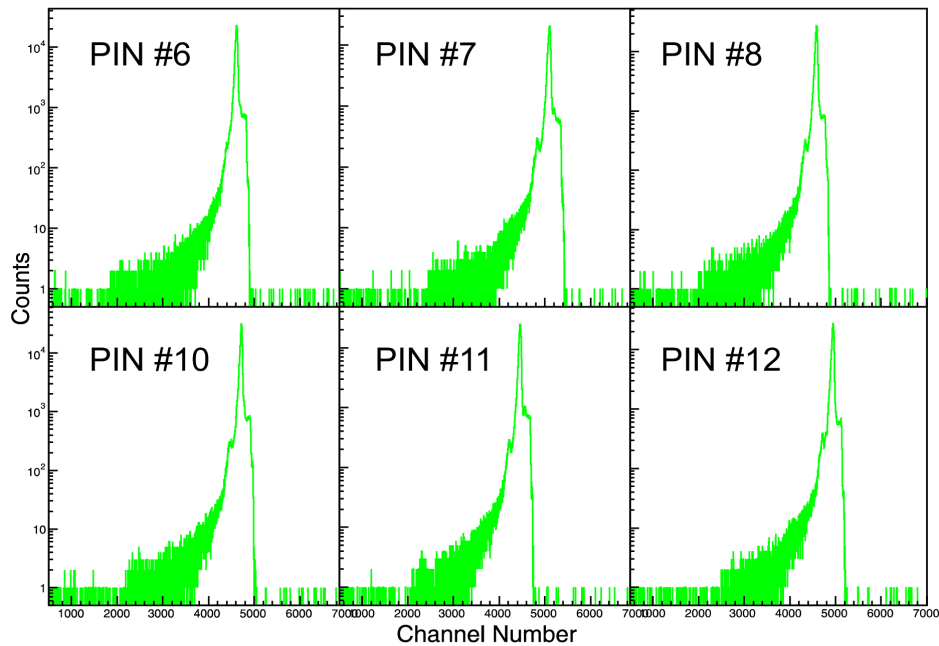
## PIN Diodes

### P-N Junction Depletion Voltage

	After bake-out in the UHV stand (200°C)	After bake-out at the ESR (250°C)	Before bake-out*
Diode #	V / mV	V / mV	V / mV
<b>1</b>	375	381	372
<b>2</b>	378	384	375
<b>3</b>	375	381	372
<b>4</b>	374	380	371
<b>5</b>	374	380	370
<b>6</b>	373	379	370

\* Measured with light on the PINs

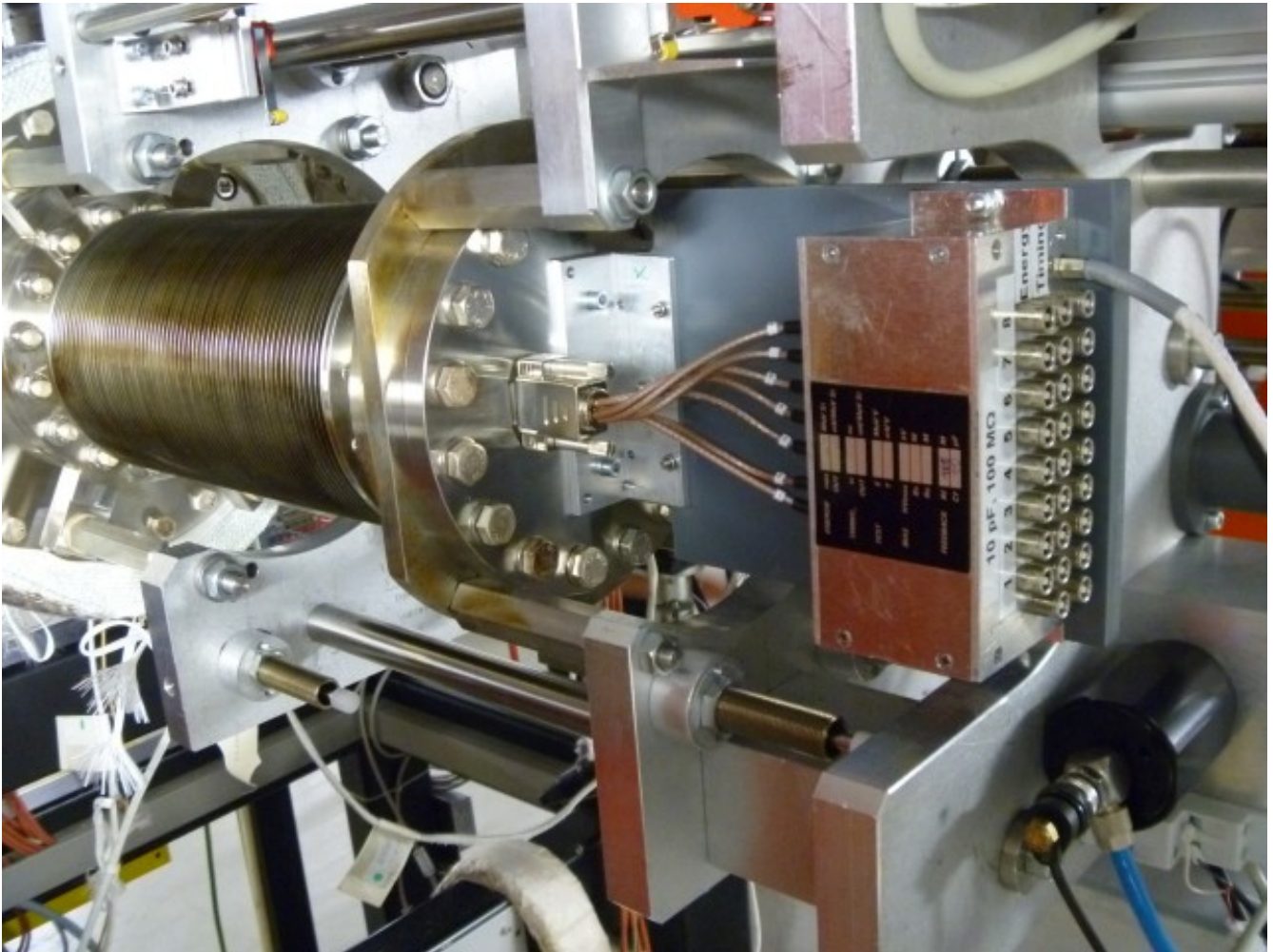
Slightly increased depletion voltage can be an effect caused by the ambient temperature difference and accounts to only around 1%. This should have no effect on the PIN diodes performance.



Spectra taken using  $^{241}\text{Am}$  source before the bake-out procedure.

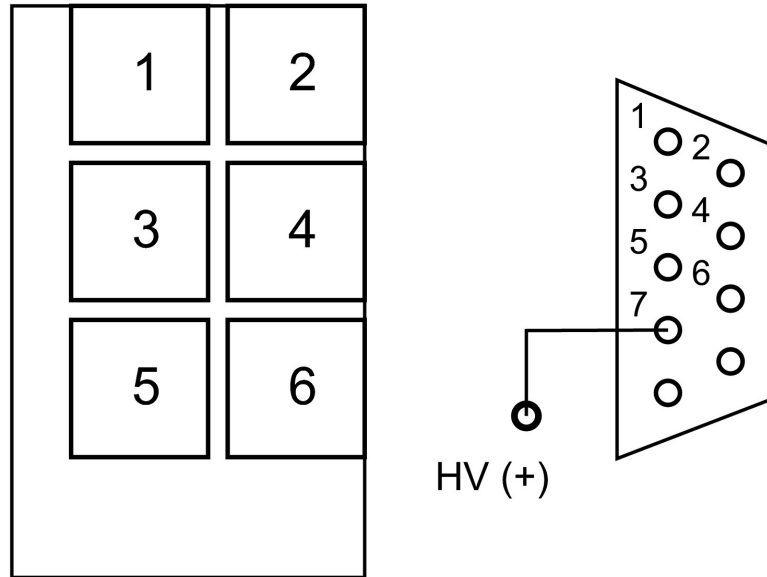
## Preamps

- CSTA 8-folded preamps with  $C_f=10\text{pF}$  will be used
- Measured response to  $5.49\text{MeV }^{241}\text{Am}$  is  $\sim 10\text{mV}$  (to  $50\Omega$ )
- This should give  $\sim 420\text{mV}$  response to  $56\text{Ni}$  (or  $58\text{Ni}$ ) with  $400\text{MeV/u}$  (which gives  $\sim 230\text{MeV}$  in  $500\mu\text{m Si}$ )
- preamp outputs for the P+ side are **negative**



Mounted preamps on the Linear-Motion mechanism of the PIN detector

## PIN Detector & Connections



Schematic picture of the arrangement of 6 PIN diodes and the 9-pin Sub-D connector as if looking on the outside of the flange.