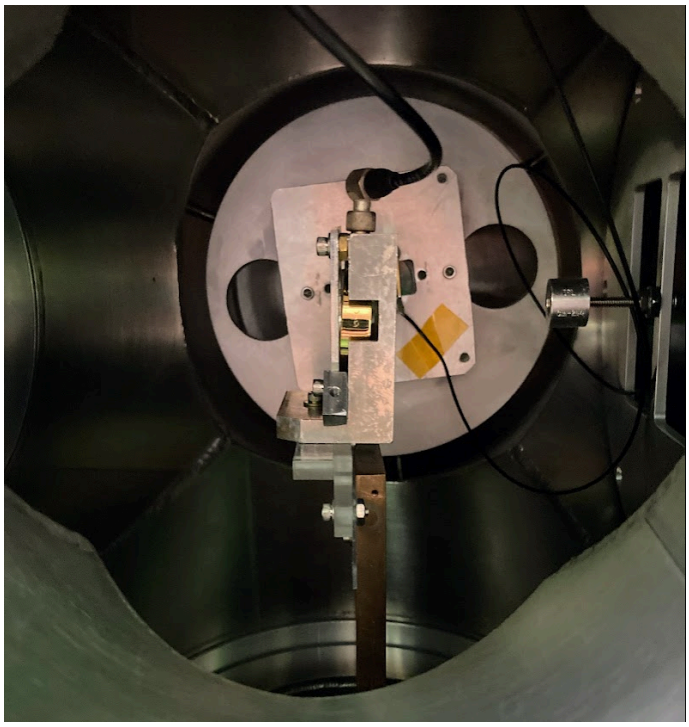
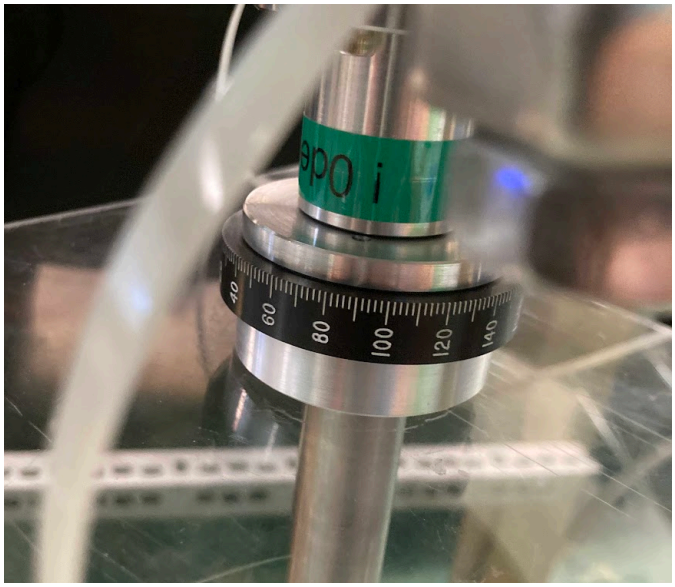
SOP for Alpha Station

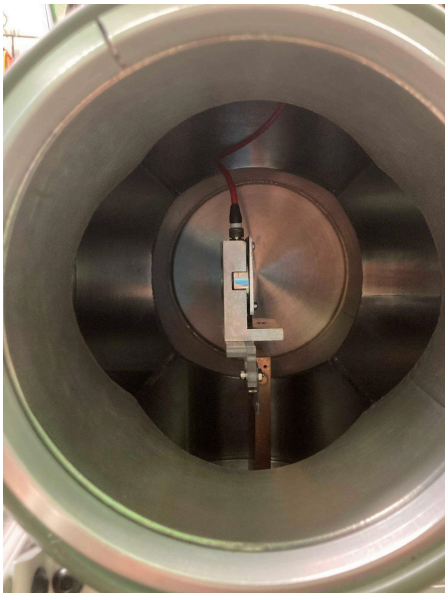


Lab 110 hosts an alpha station to test various silicon detectors, e.g.SBDs, PIPs and LGADs. The alpha source, on the right side of the figure, has an activity of < 1uC. But it has a thin surface, allowing for possible contamination of the surrounding. Never touch the surface and use nitrile gloves when working in the vacuum enclosure.

Cm-244	0.00100	52512	D	Room 110	Kammel	07/22/2024

This SOP describes the operation and safety measures.





Change detector

1. turn of HV
2. turn off NIM crate, i.e. power to electronics
3. turn off vacuum pump, by pressing button below

4. Close valve V7 to alpha station.
   NOTE: Reopen this valve only after actual turbo speed below 100 Hz (309: display)
5. **Put on nitrile gloves for working in vacuum and preventing contamination for Cm source.**
6. Vent vacuum chamber with vent valve.
7. Remove access flange lid
8. Change detector, w/o touching the Cm source.
9. Close vent valve and flange (clean with alcohol, if you touched it w/o gloves).
10. **Make sure turbo is below 100 Hz,** then open valve to chamber.
11. Start pumping by pushing the same button as in the figure above
12. The pump will fail after a while. Push the button twice for restarting.
13. Turn on the electronics
14. **After pressure reached 1e-4 mbar scale**, start slowly raising HV, while watching signal on scope and current on HV supply.

Measuring protocol

Measure

1. Alpha and pulser signal front side
2. Alpha and pulser signal back side
3. beta spectrum with vented, but closed (dark) chamber. Avoid directing the collimated Sr-90 source towards yourself. The source should be placed on cleaning wipes, so that the dirty source holder never contacts the vacuum environment.

For each measurement first observe with scope and then with MCA system. Record results.

Signatures

I have read and understand the content of this SOP.
Training records maintained by G. Holman

Name	Signature	Date
P. Kammel		8/19/2024
Svende A Braun		8/19/2024