CRP news

D.Duchesneau

- CRP and NP02 status
- Anode PCB development and status and next prototype
- PRRs time update

CRP meeting
November 27th 2024

CRP status in NP02 cryostat: plan prior to NP02 purge and fill

Checklist for top CRP:

- ❑ Verify entire SHV biasing circuit from top cryostat flange to the anode strips/adapter boards:
  - ❑ put 20-30V and measure at the CRP (CRU with the secondary filter HV box)
    - CRP2 done on Oct 8th: ✓
    - CRP3 done on Oct 14th ✓
- ❑ Alignment and relative positions of CRP2 and CRP3: ✓
- ❑ Close and seal the top CRP HV + CRP2 level meter flange ✓
- ❑ Close and seal the CRP3 level meter flange ✓

} Done on Nov 20th 2024

- ❑ Check the CRP with TDE ✓ => Change 3 cables to correct some effects from the cables but unfortunately 1 cable had a problem and 12 channels on CRP2 induction2 have been lost and no possibility to reinstall a good cable

Checklist for Bottom CRP:

- ❑ Remove the white covers on the CRP5 and CRP4 ✓
- ❑ Remove the ESD protection sheets on CRP4 and CRP5 ✓

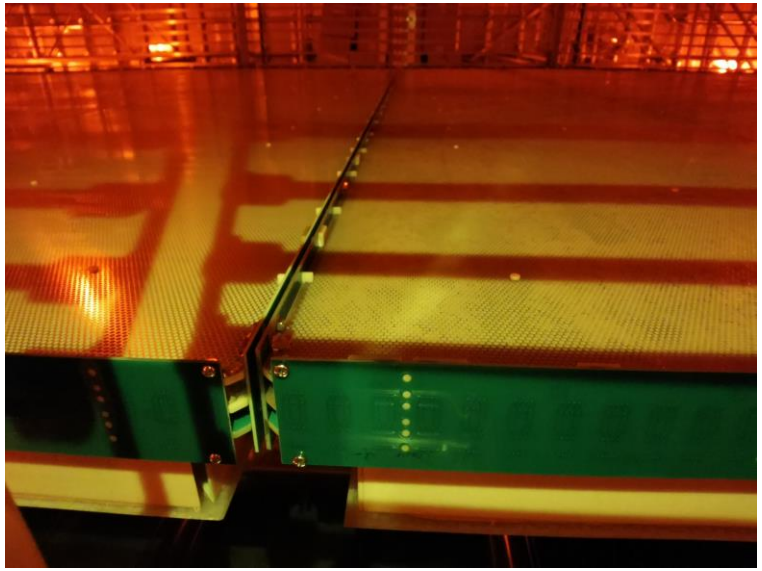
} Done on Nov 20th 2024

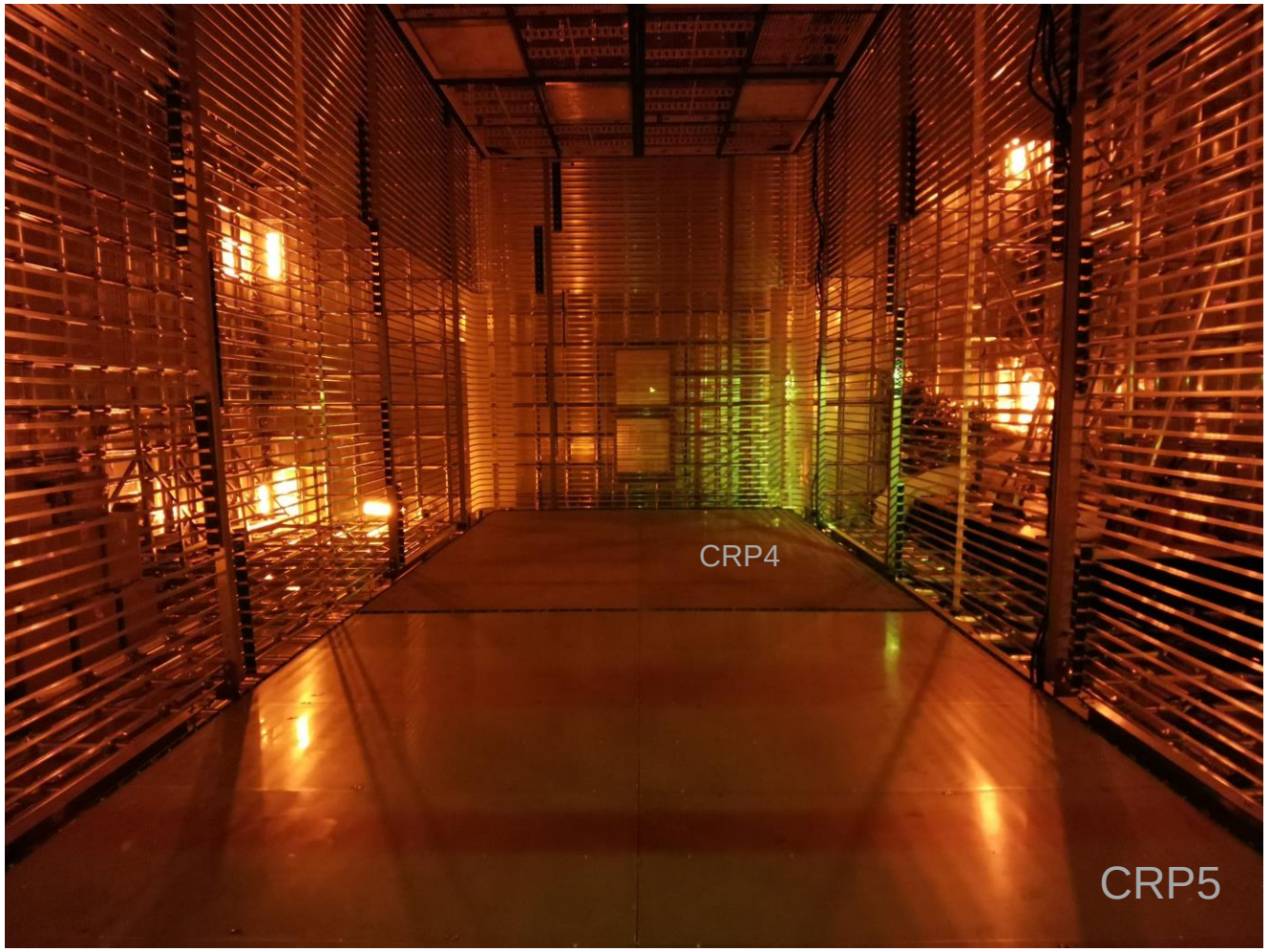
- ❑ Visual inspection of the exposed shield surface and removal of any visible dust ✓
- ❑ Verify entire SHV biasing circuit from cryostat roof flange to the anode strips/adapter boards: ✓
  - ❑ put 20-30V and measure at the CRP level (CRU side with the secondary filter HV box)
    - CRP4 to be done
    - CRP5 to be done

} done on Nov 22nd and Nov 25th 2024

- ❑ Continue to check CRP with BDE ✓

CRP status in NP02 cryostat: plan prior to NP02 purge and fill





- The manhole has been closed yesterday
- Purge should start these days.

CRP commissioning activities

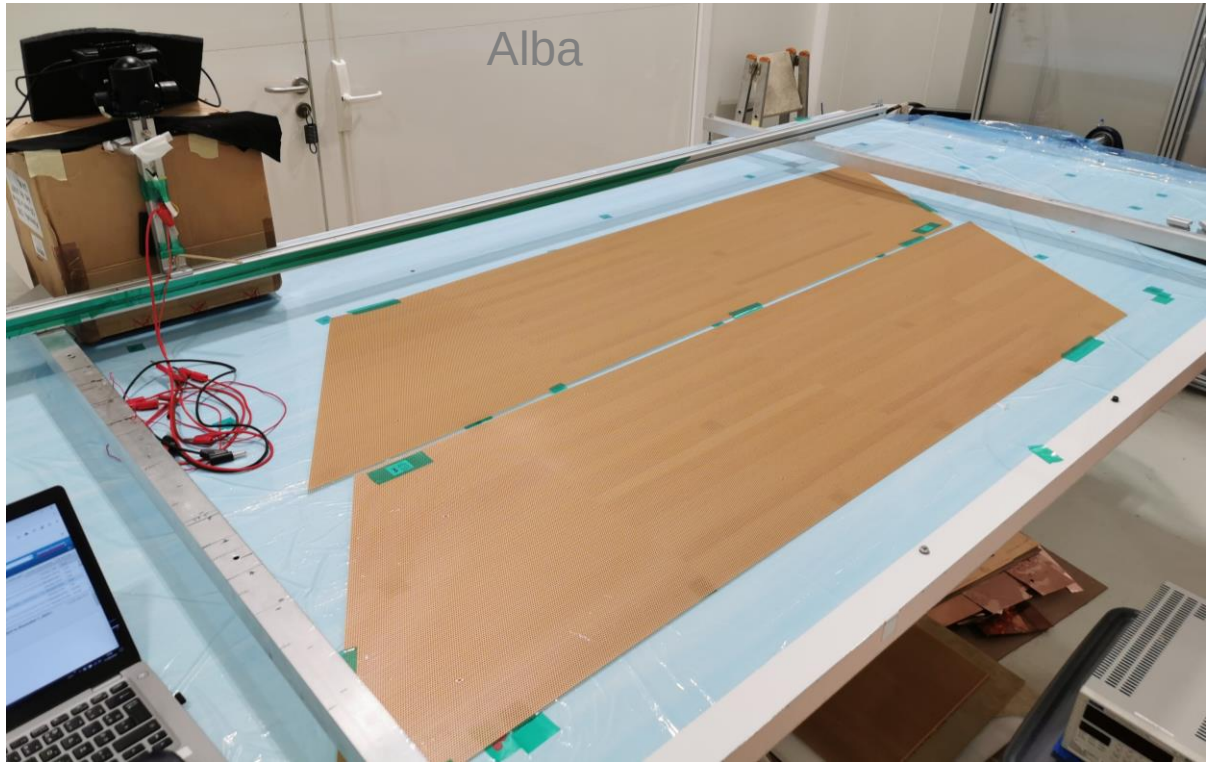
LAr transfer from NP04 : should start on December 4th: it takes about ~1-2 weeks to complete the transfer
The filling will be partial (50-60%) before Christmas

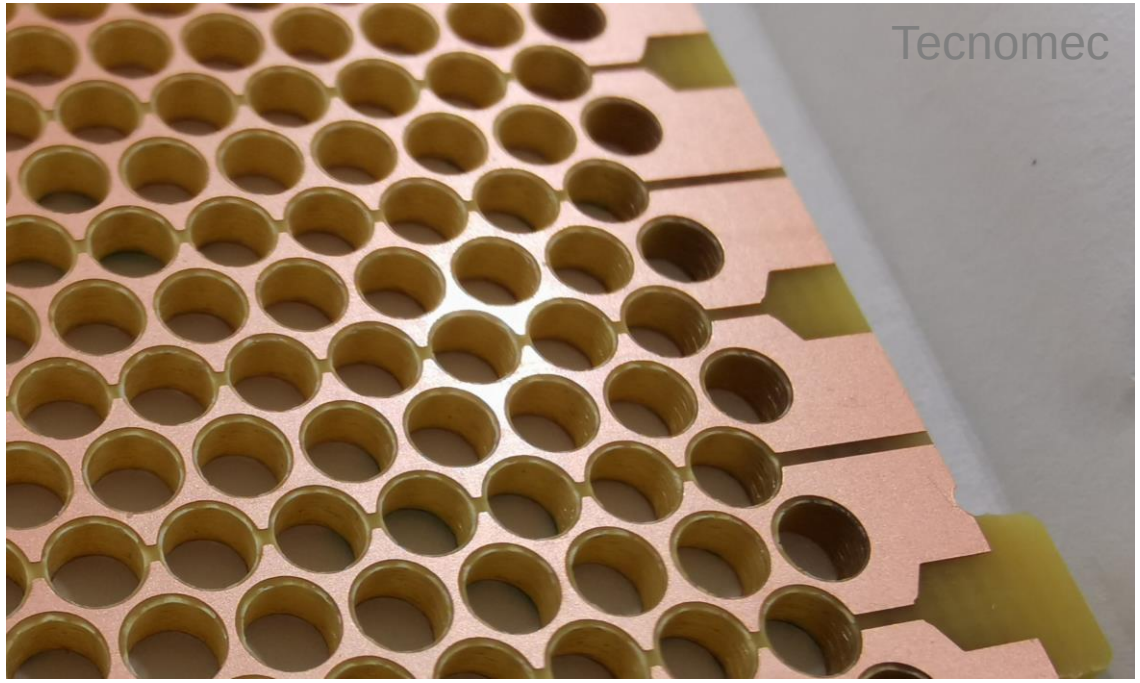
The remaining filling will be in January with Liquid argon truck delivery

⇒ should monitor continuously the Top and Bottom CRPs

⇒ As soon as the temperature goes down significantly:
- ⇒ test from time to time the HV biasing to 100 Volts and check current on both the top and bottom
- ⇒ When liquid reaches the shield layer of Bottom CRPs: go to nominal HV bias to validate

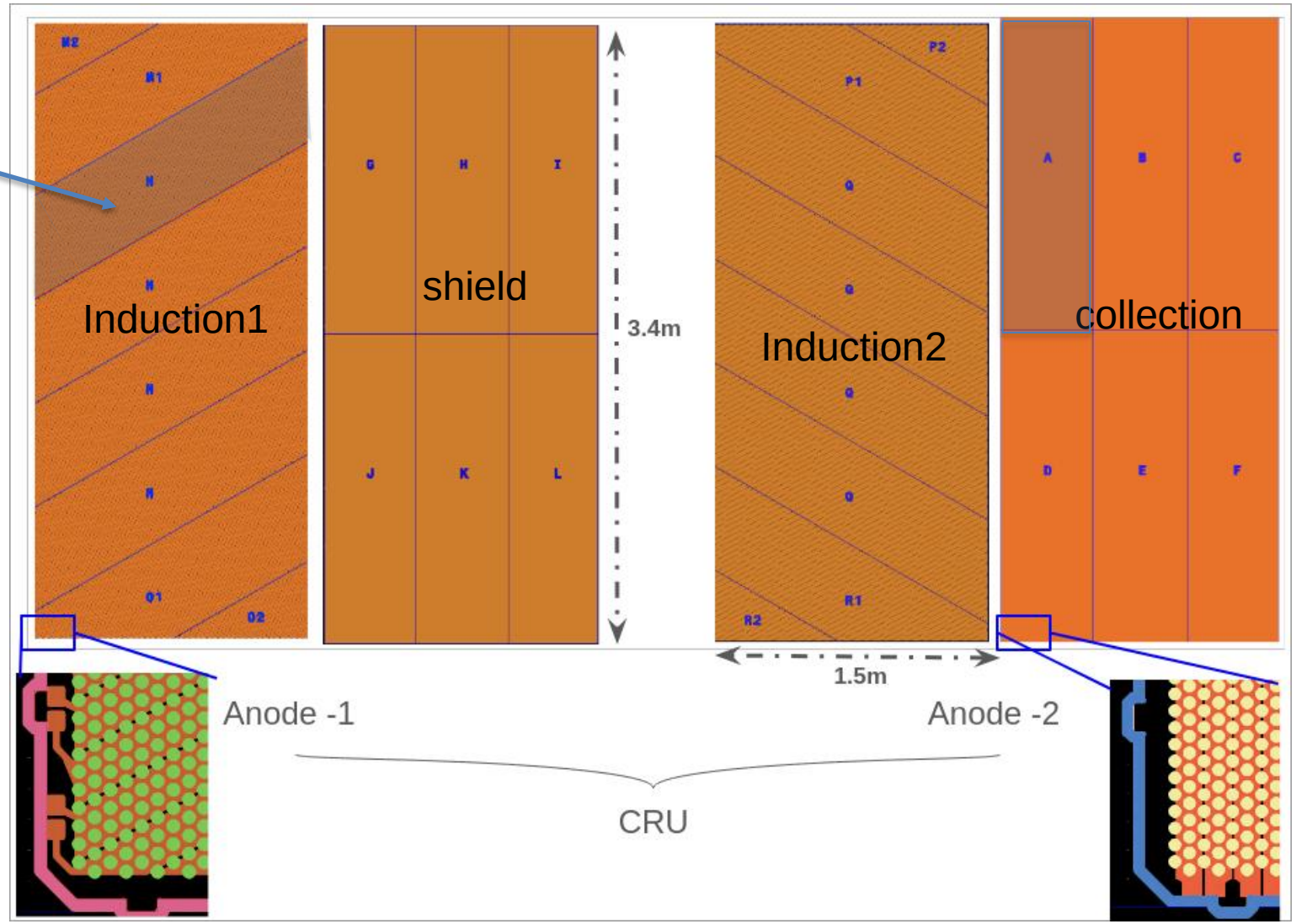
Anode PCB development and status





22 different types of PCB panels

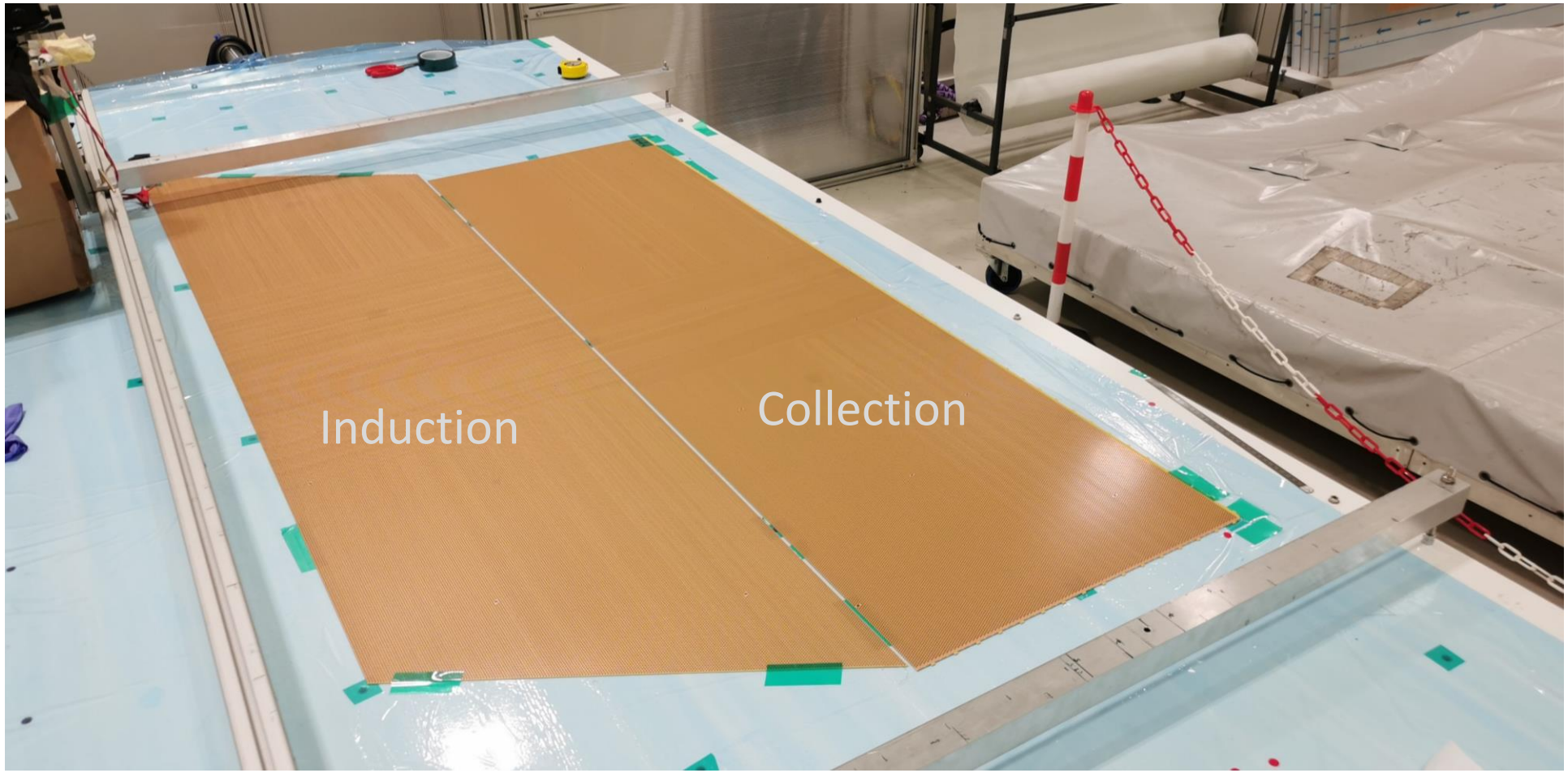
Shaded types are the ones produced and received for QC



Sketch by Serhan

Received PCBs from Chaosheng on Nov 15th

There were 2 different PCBs : 1 induction N and 1 collection A:



Checks done by:
F. Boran
L. Manzanillas
Yi Wang
D.D.

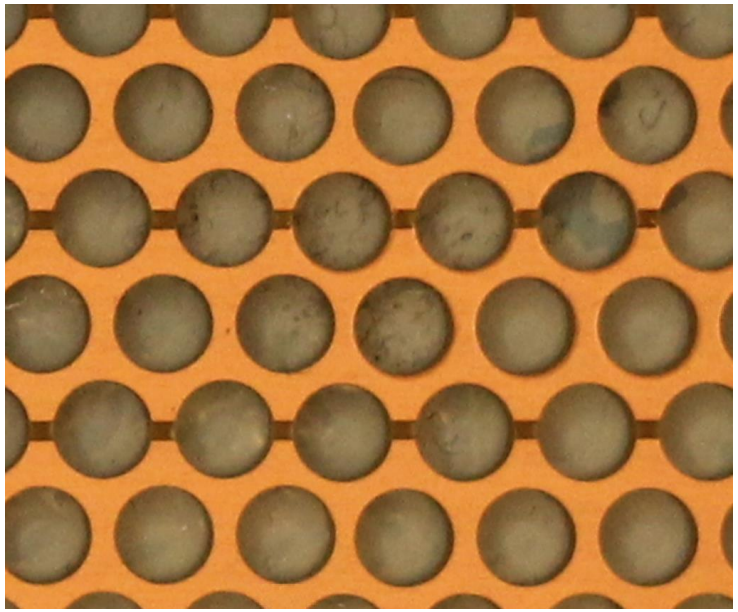
Visual inspection was first done and didn't show anomalies or visible problems;

QC checks were done with the photo analysis of those samples

L. Manzanillas

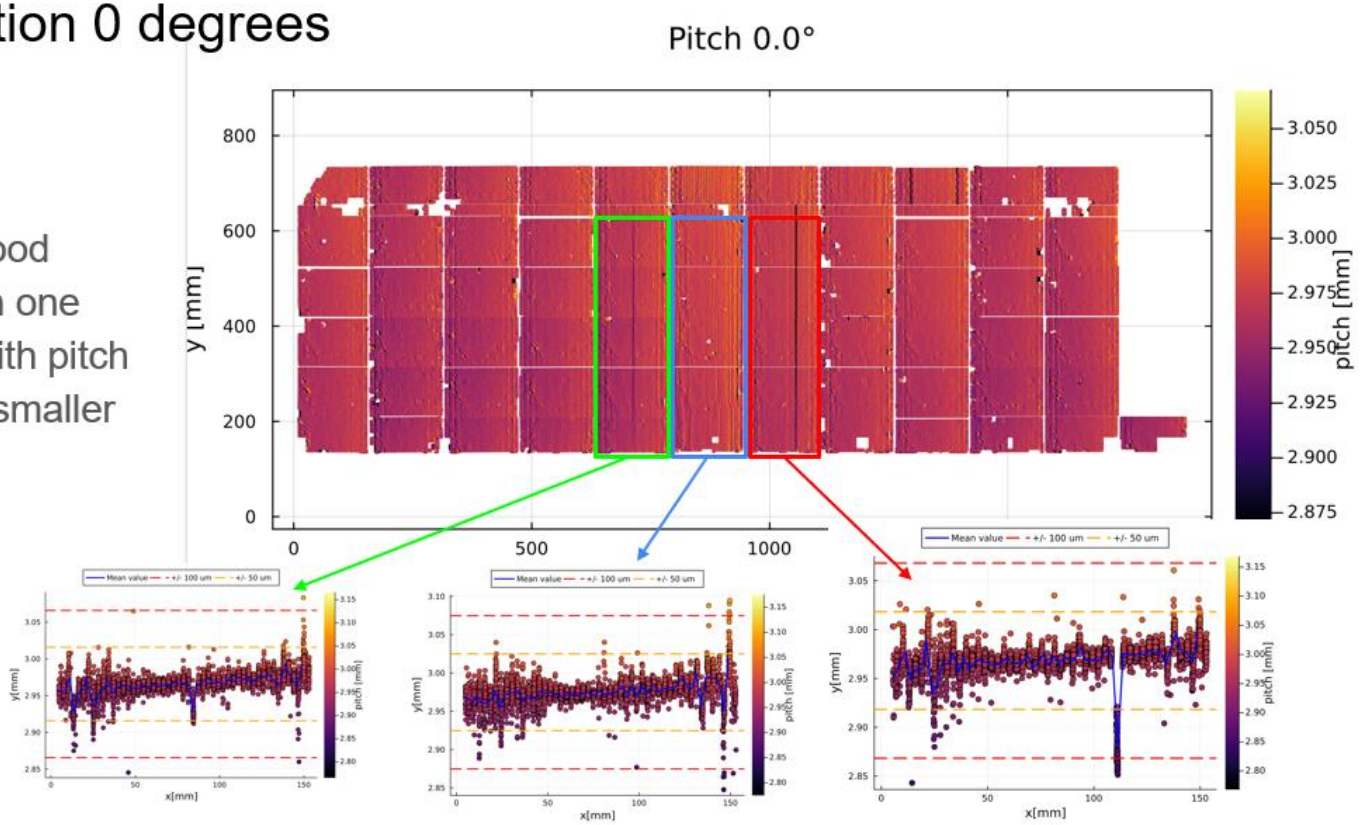
The collection PCB was good and acceptable apart from 1 place with a small pitch offset

Photo 77

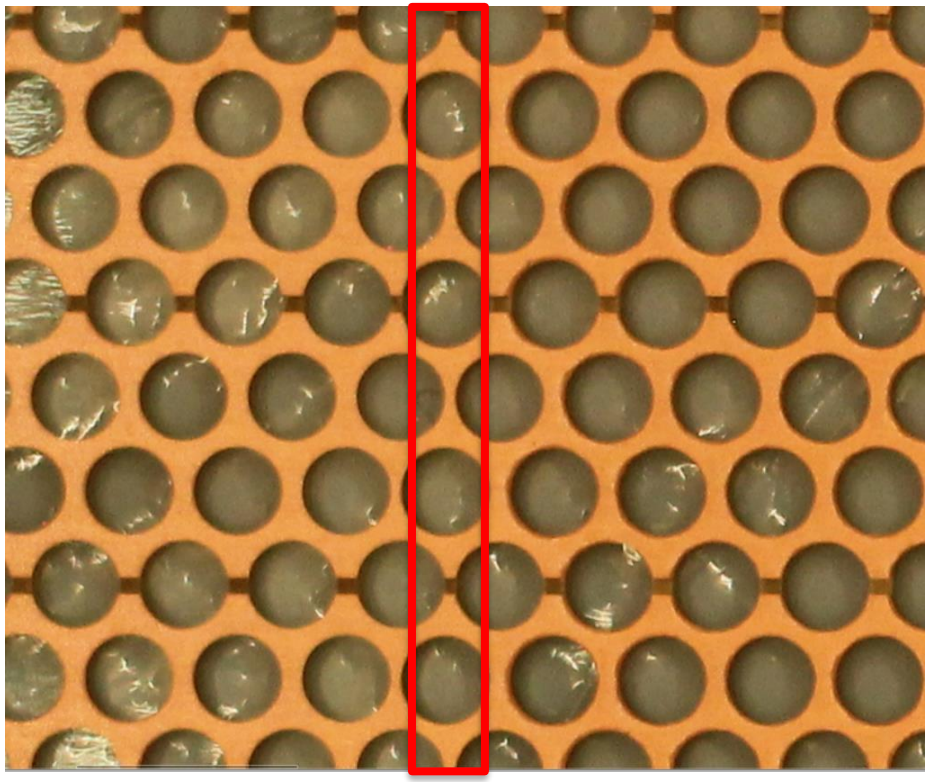


Collection 0 degrees

Looks good except in one region with pitch ~80 um smaller

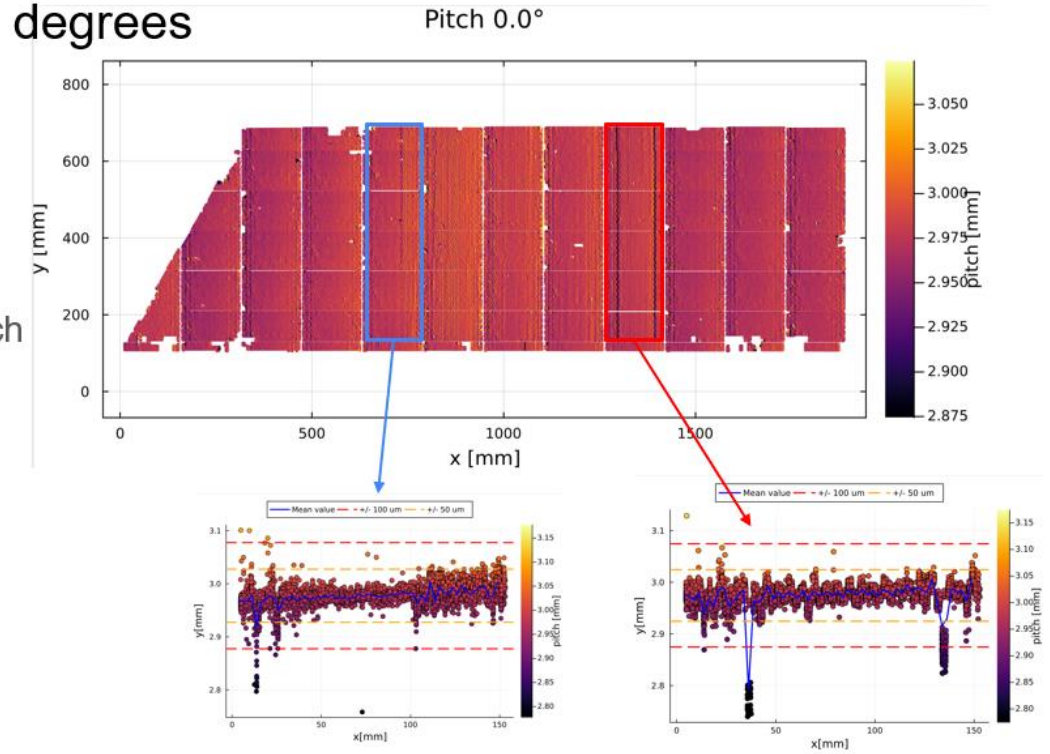


The induction PCB had a more impacting offset effects up to 170 um



Induction 0 degrees

Looks good except in one region with pitch ~150 um smaller



However, Yi was able to discuss with the company the same day and the reason was found: there was an error in the process where the positioning parameters of the drilling head was not changed while it should have been after rotation of the panels

Status of new anode PCBs

Next prototype

- It is foreseen to build a complete CRU with the Chaosheng anodes
  - The order is given and the plan is to get the PCBs produced by end of December

- The assembly of the the anode panels can occur beginning of January
- The assembly of the CRU after dismounting CRP6 can be foreseen by mid January

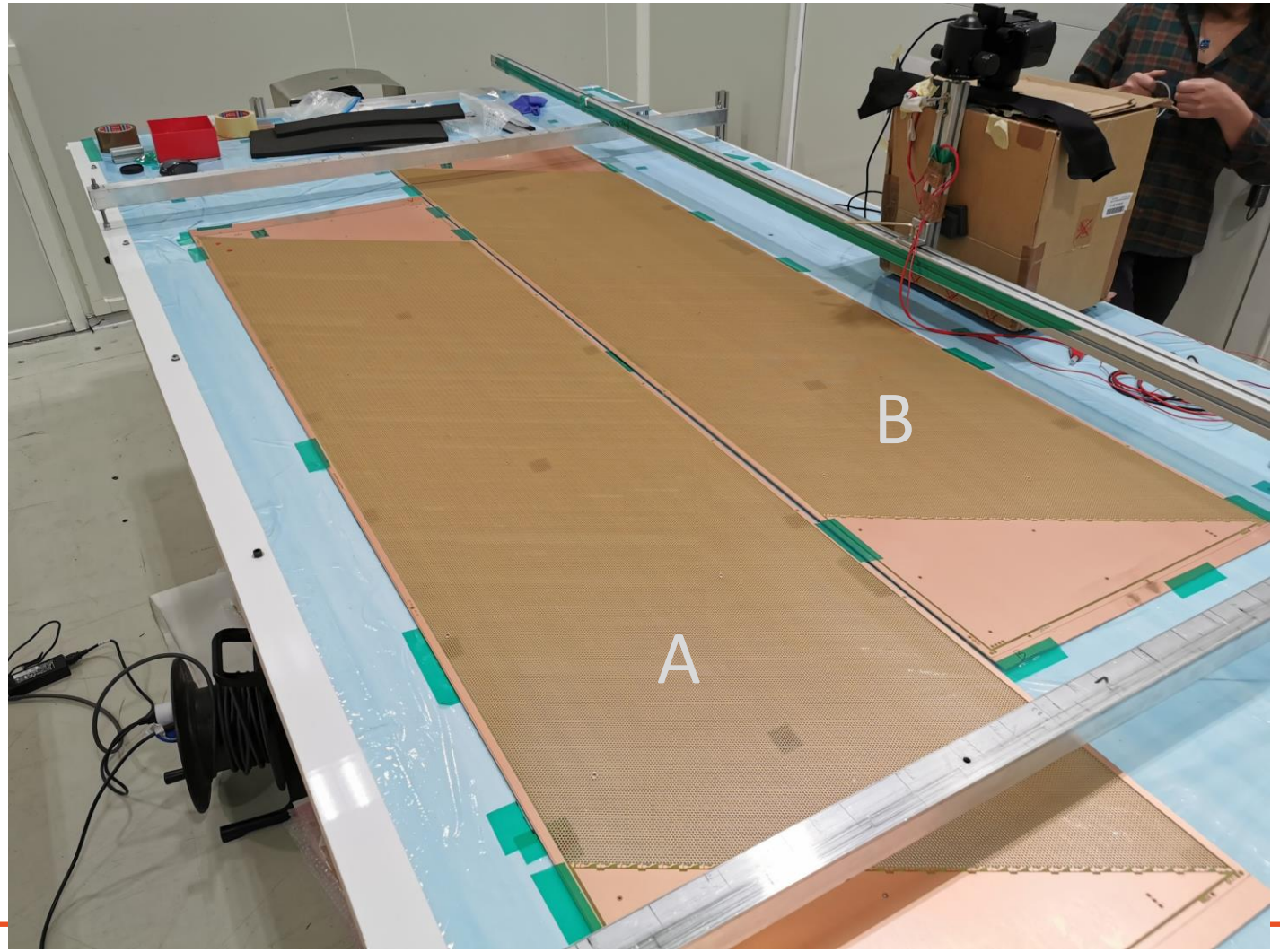
⇒ Such that a new bottom CRP prototype (CRP8) could be built and tested in January (reusing the composite the adapter boards and the edge cards) but replacing all anodes

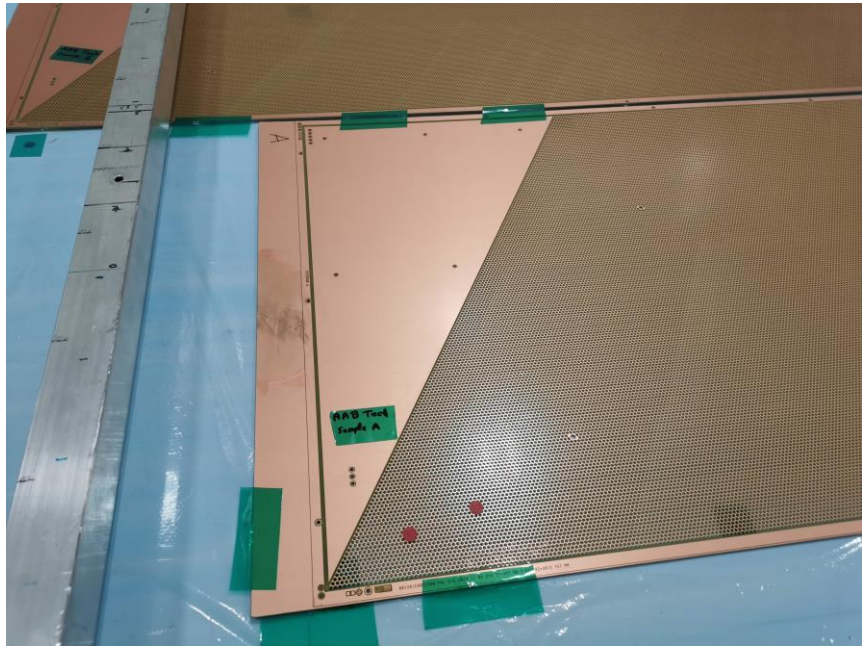
In the meantime we received yesterday new samples from Alba company.
⇒ QC checks are being done
⇒ If they are all ok we may foresee to ask a second CRU with Alba.

2 induction PCBs from Alba (AAB Tech manufacturer)

The photos have been taken this morning;

=> analysis will start this afternoon

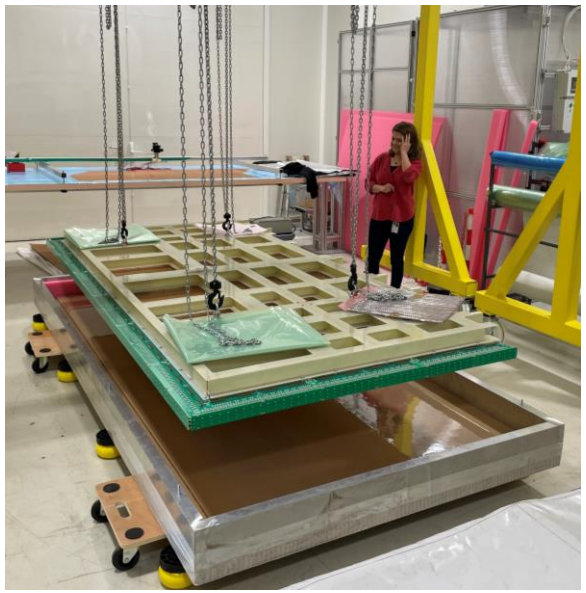


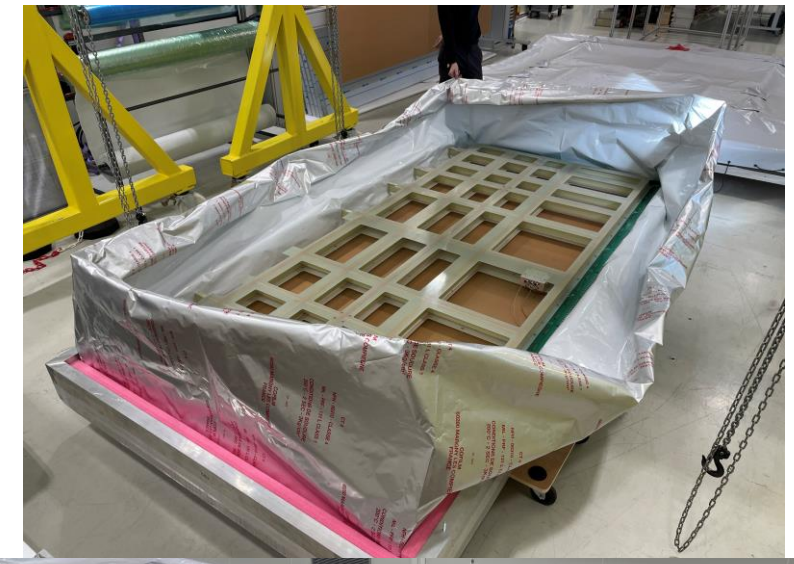


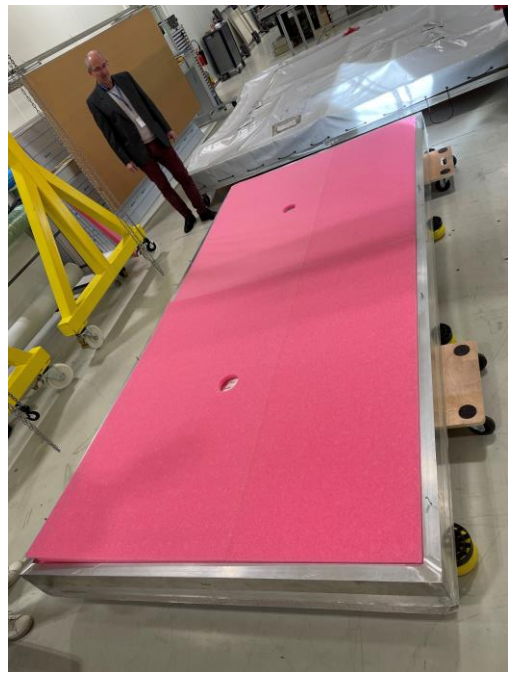
Status of CRP7

Details in slides from Jean-François

CRP7: 1 CRU has been prepared yesterday to be transported to Grenoble today







It will be tested in the coldbox at Grenoble in the coming weeks

Update: PRR schedule for CRP components

CRP items and sub-component PRR list:

- **Composite frame**: Oct 10 2024

- **PCB anodes and panels**: Fev 2025
- **Adapter boards and edge cards :** Jan-Fev 2025
- QC test setup and assembly site: Jan-Fev 2025

} Postponed to beg of 2025

- Bottom CRP ground plane Jan 2025

CRP Factories: (Main factory PRR and follow-up later for the second site)

- Grenoble and CERN Factories: first in March 2025 (TBC)
- US factories: Yale and 2nd site TBD: first in Jul 2025, second in Sep 2025

-**Bottom CRP support**: adapter plates + feet : Sept 2025

-**Top SST :** March 2025
-Top cable trays: March 2025
- suspensions + decoupling system: June 2025

END