sPHENIX INTT

Cheng-Wei Shih, Kai-Yu Cheng, Chia-Ming Kuo (NCU)

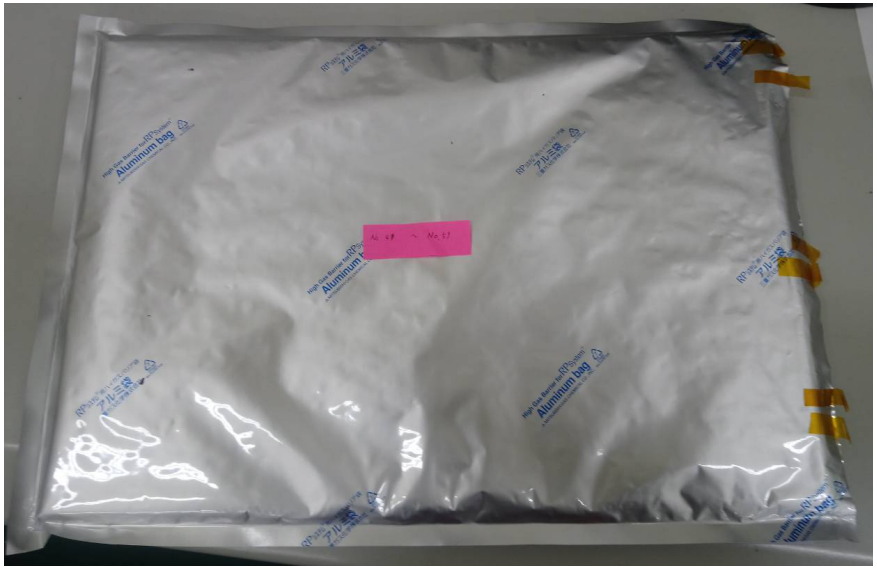
Rong-Shyang Lu, Hsin-Yeh Wu, jenny Huang, Ou-Wei cheng (NTU)

Takahito Todoroki, Itaru Nakagawa (RBRC)

Takashi Hachiya, Ayaka Suzuki, Miu Morita, Mika Shibata (NWU)

Rachid Nouicer (BNL)

The arrival of produced HDI

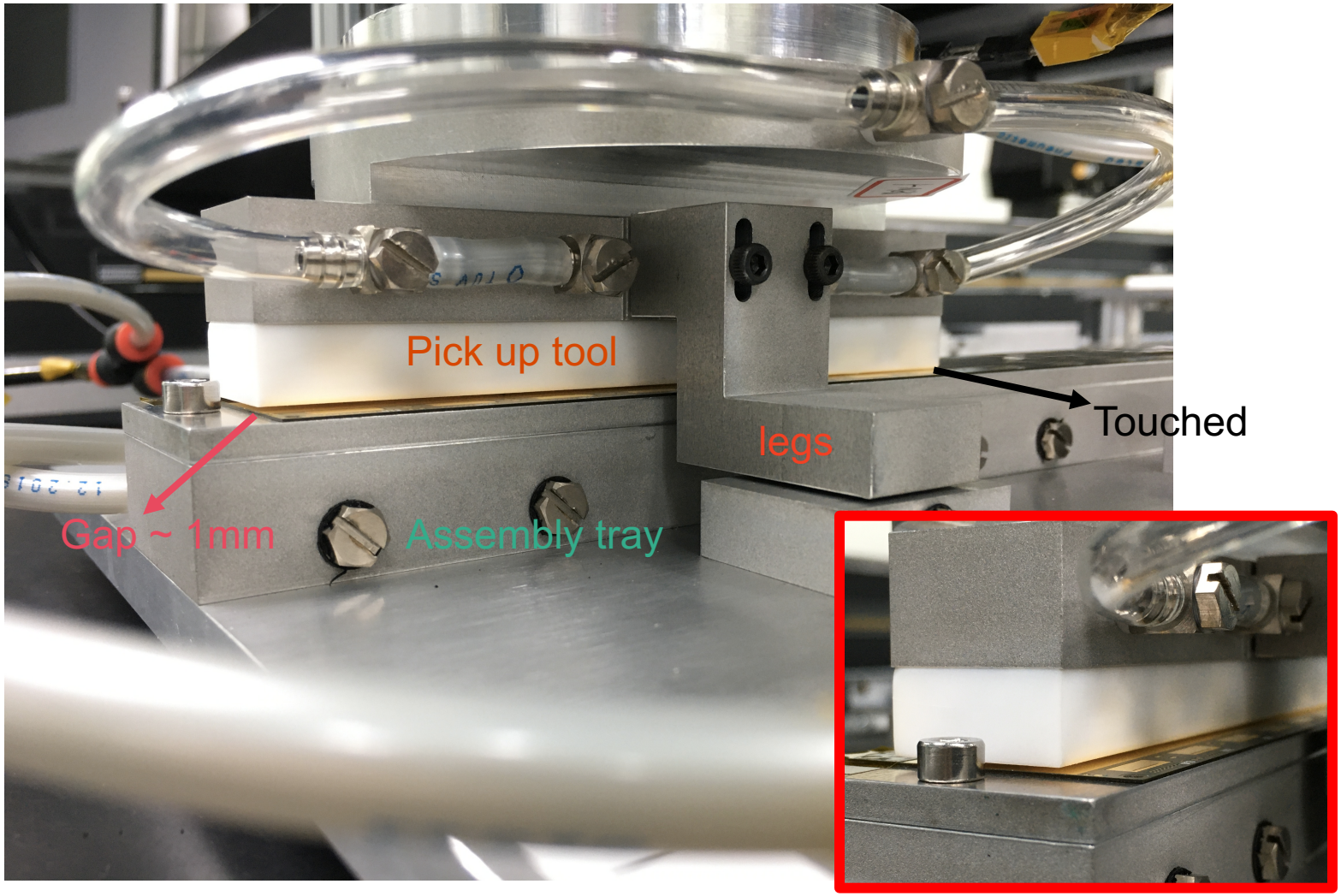


19 pieces produced HDI
Are all checked to be ok

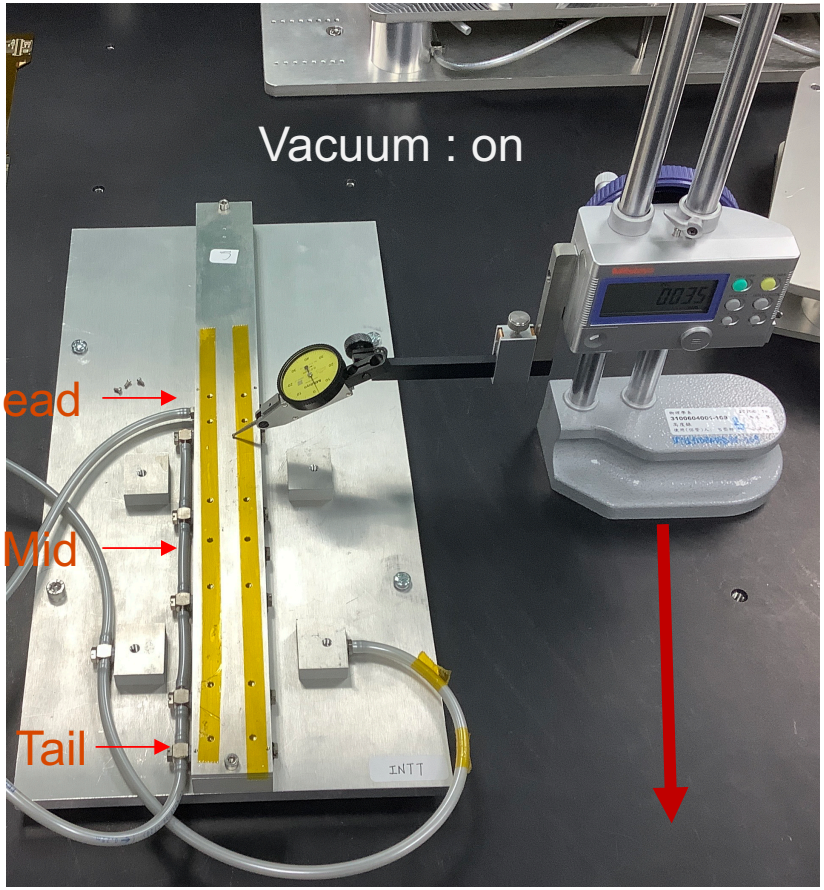


The flatness problem of module assembly tray

The pick up tool and the assembly tray is not in parallel



Module assembly tray measurement



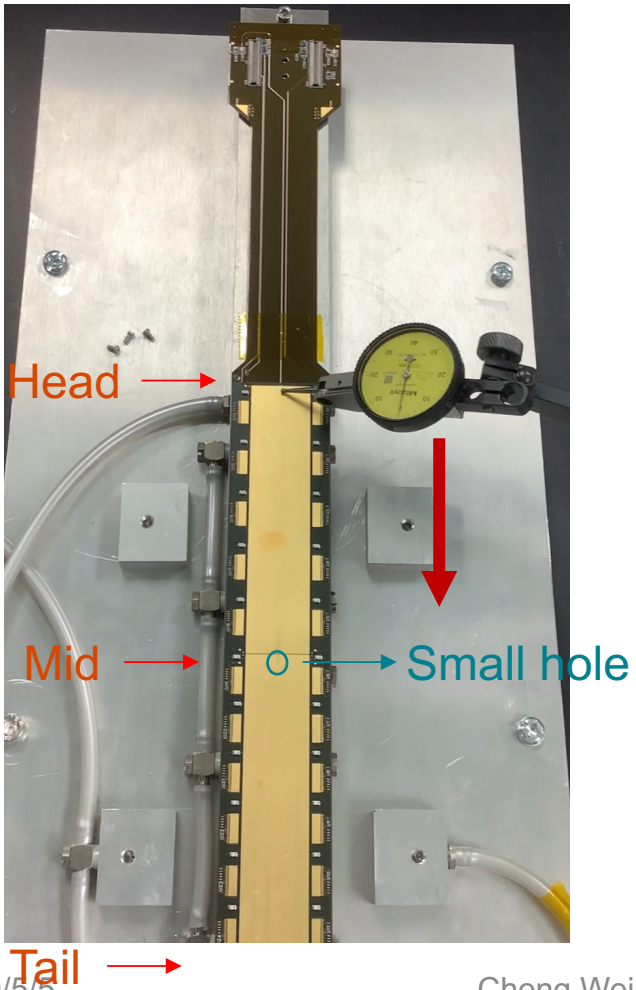
	Flatness
Head	0
Head - Mid	-30um
Mid	-30 um
Mid - Tail	-20um
Tail	0

* Negative : lower than Head point
Positive : higher than Head point

the flatness of assembly tray : ~ 30 um

Module assembly tray + HDI measurement



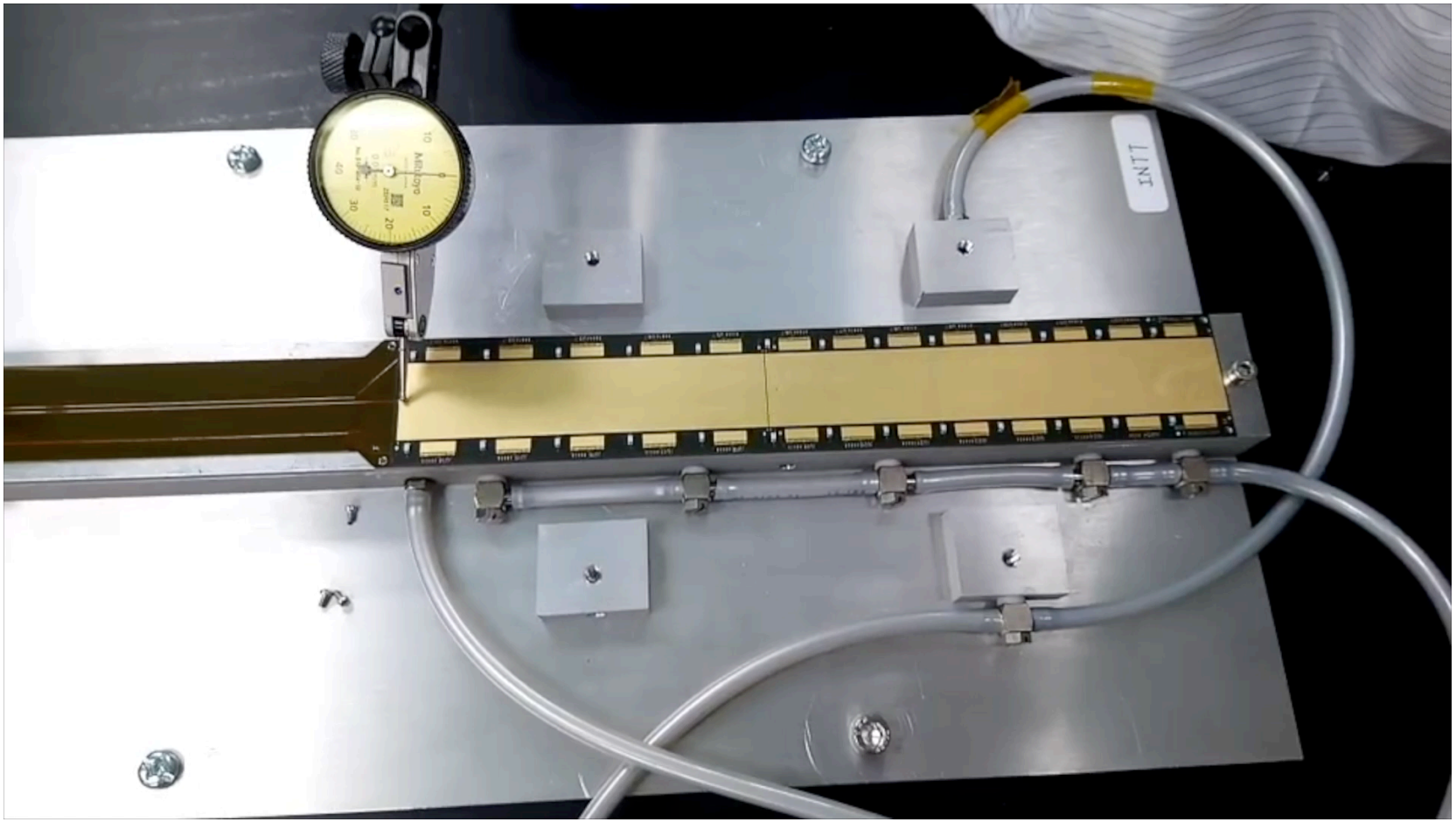


	Flatness
Head	0
Head - Mid	- 20 um
Mid	+ 50 um
Mid - Tail	-40um
Tail	-20um

* Negative : lower than Head point
Positive : higher than Head point

Type B : ~ - 20um
Cross the hole : bad
Type A : ~ -30 ~ -20um

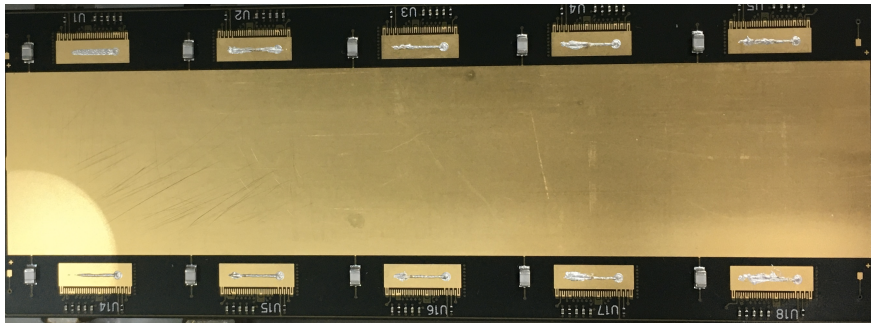
Module assembly tray + HDI measurement



First chips assembly test

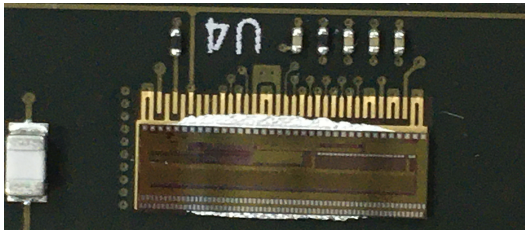
2020/4/22

Test area : type B
Test Chips : 10

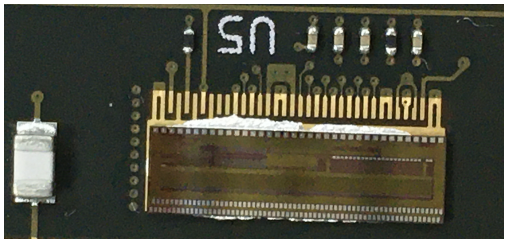


Apply glue

Place all chips



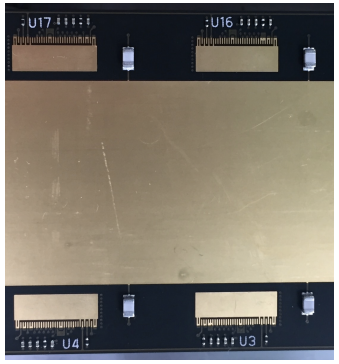
Remove all chips
Clean the HDI

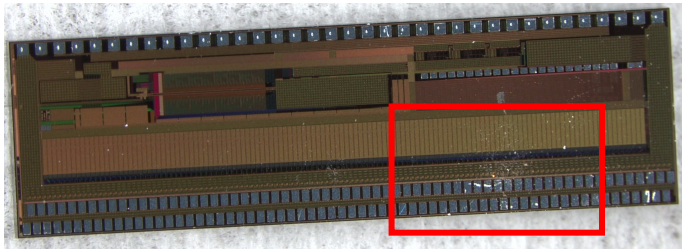


Place all chips

Remove all chips
Clean the HDI

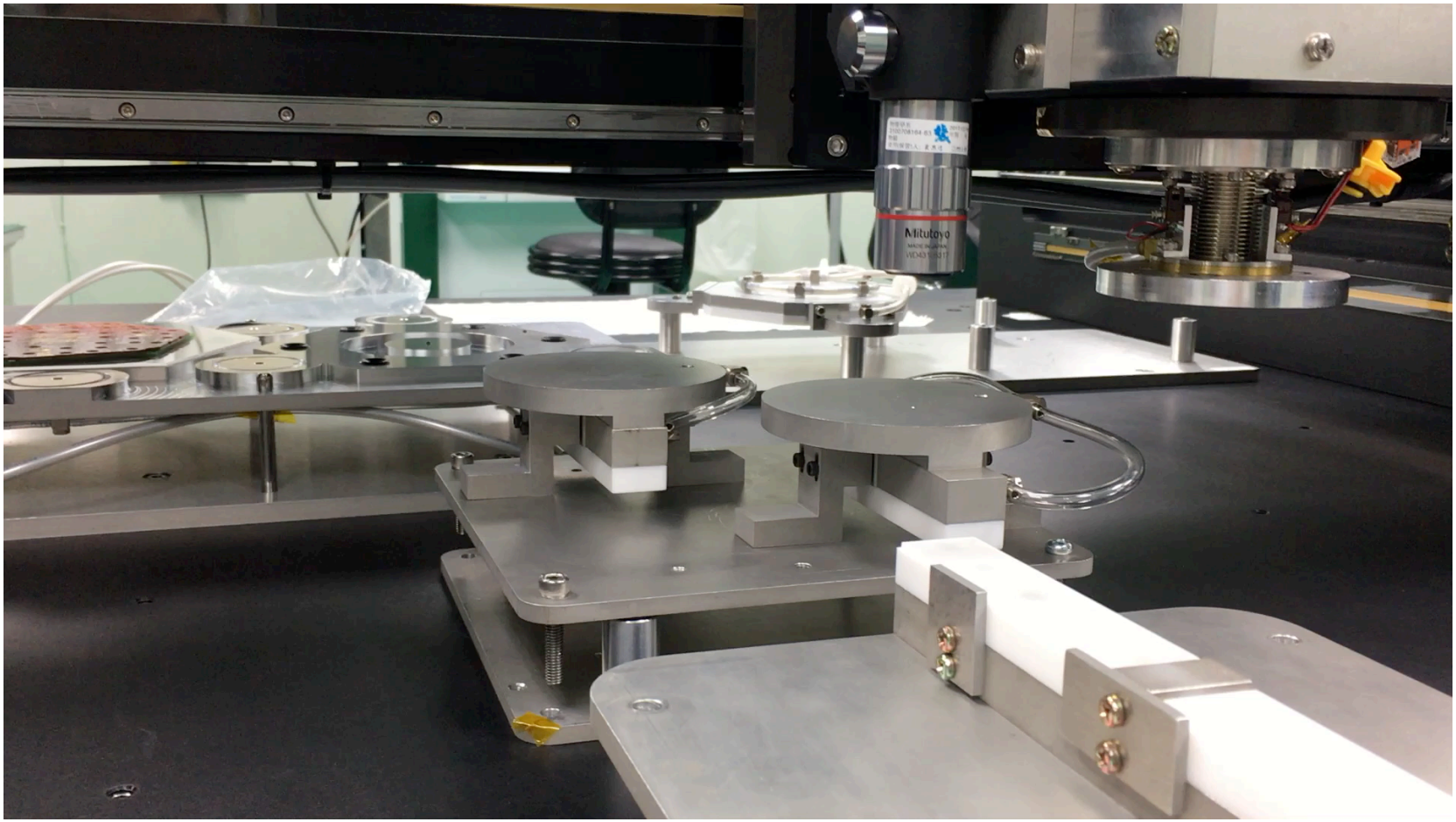
The leakage of glue is too much



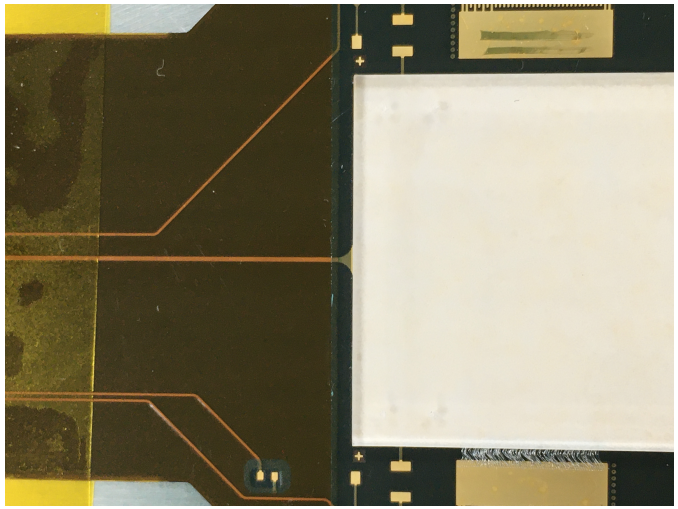


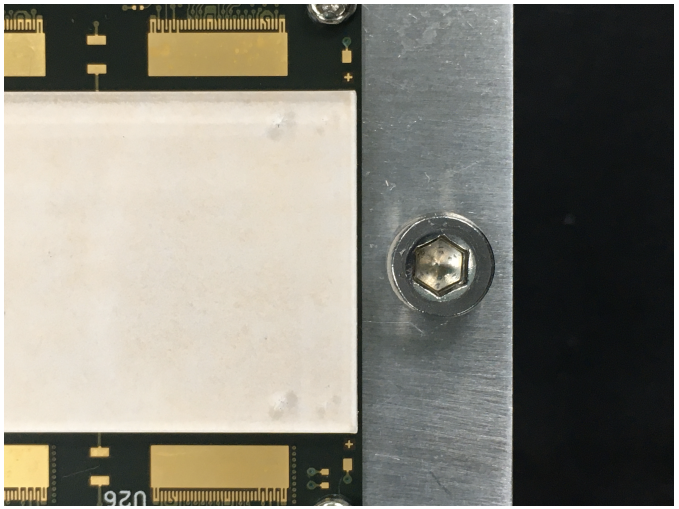
The HDI looks ok, 10 chips is considered to be bad

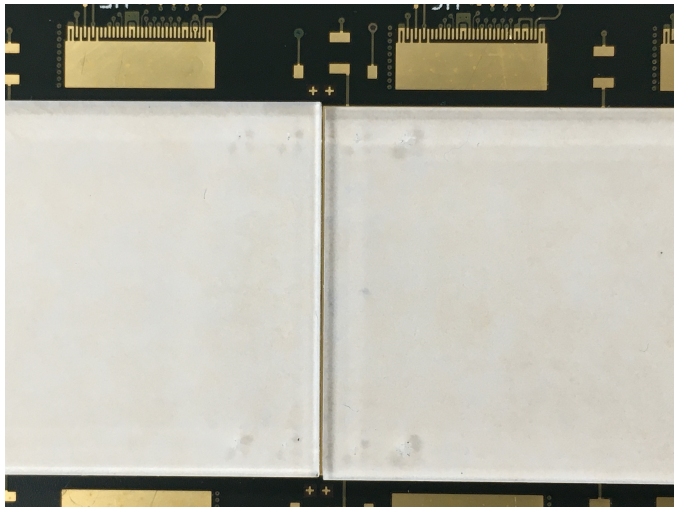
Sensor placing test

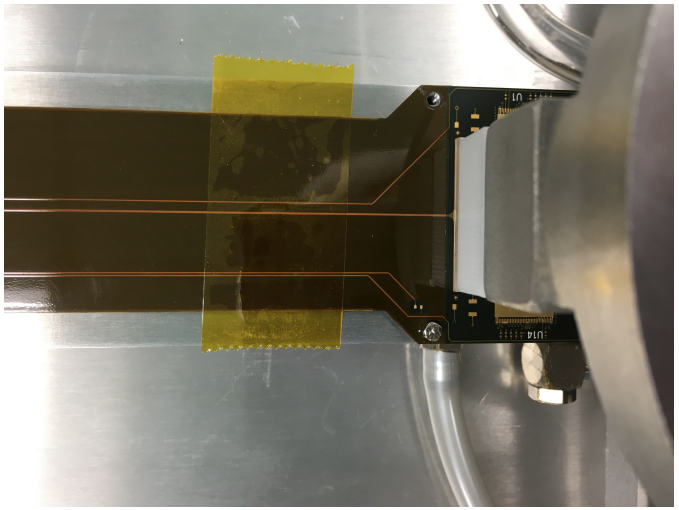


Sensor placing test







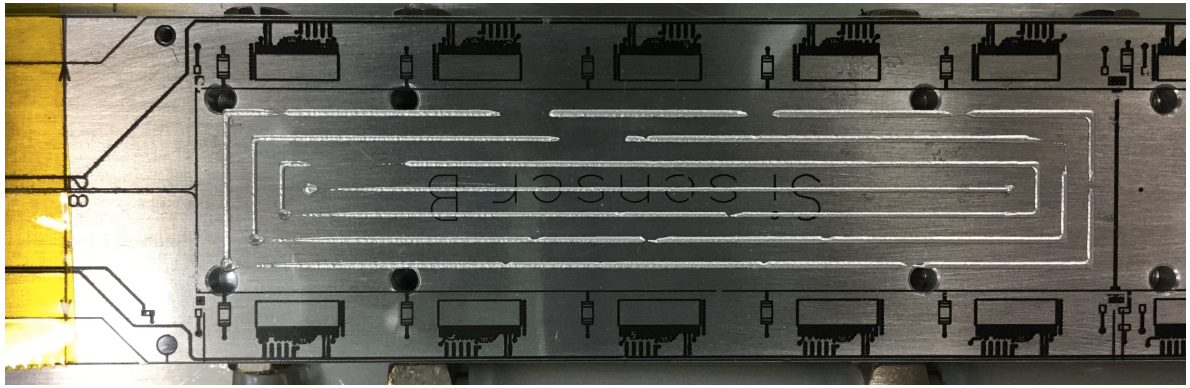


Second chip and sensor assembly testing

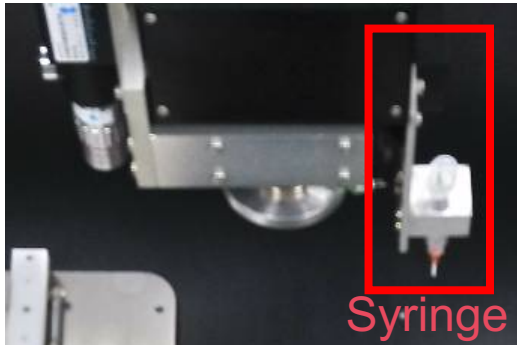
2020/5/5

Test area : type B (acrylic sensor (1.5mm) and HDI film were used)
Test Chips : 3 (chips from first test were used)

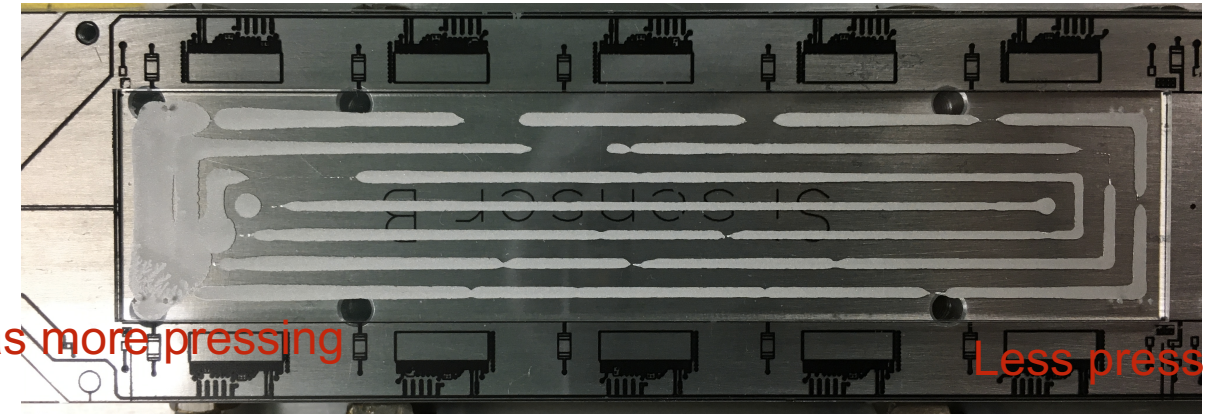
The glue pattern of type B area



Gantry head



Acrylic dummy sensor assembly

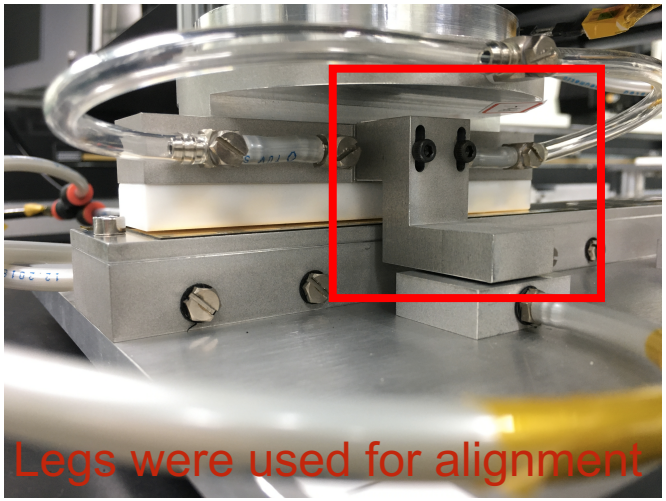


Has more pressing

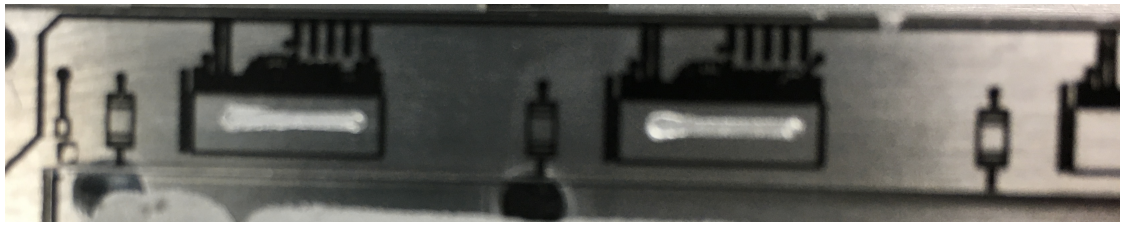
Less pressing

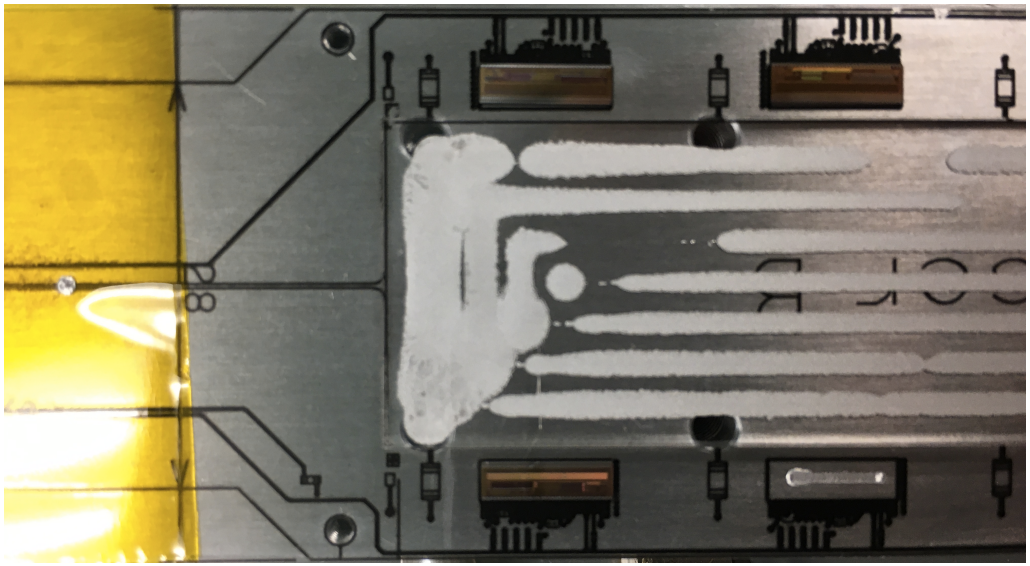
Second chip and sensor assembly testing

Test area : type B (acrylic sensor (1.5mm) and HDI film were used)
Test Chips : 3 (chips from first test were used)



Needle height is about 600 micron from the HDI

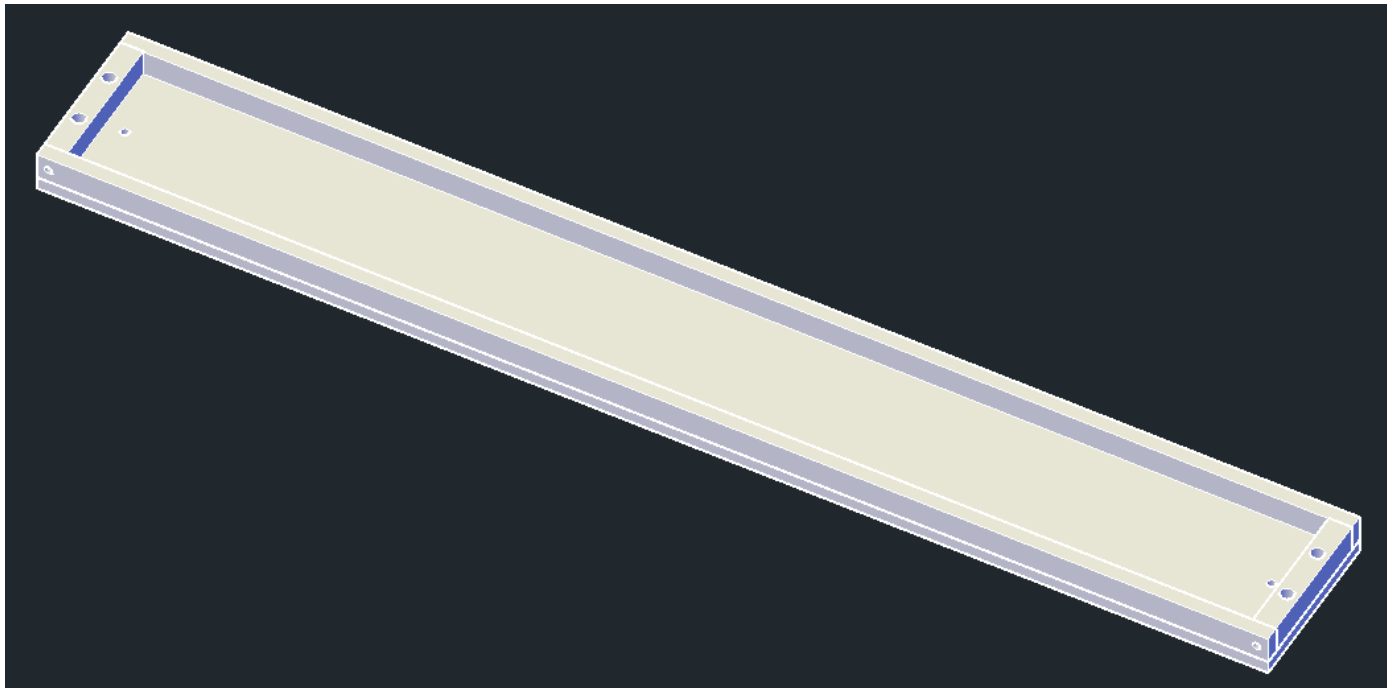




Chips are looked to be ok

Module Shipping box

Preliminary shipping box
Shipping destination : from NTU to NCU



To do list

- Test the glue applying parameters with the acrylic sensors.

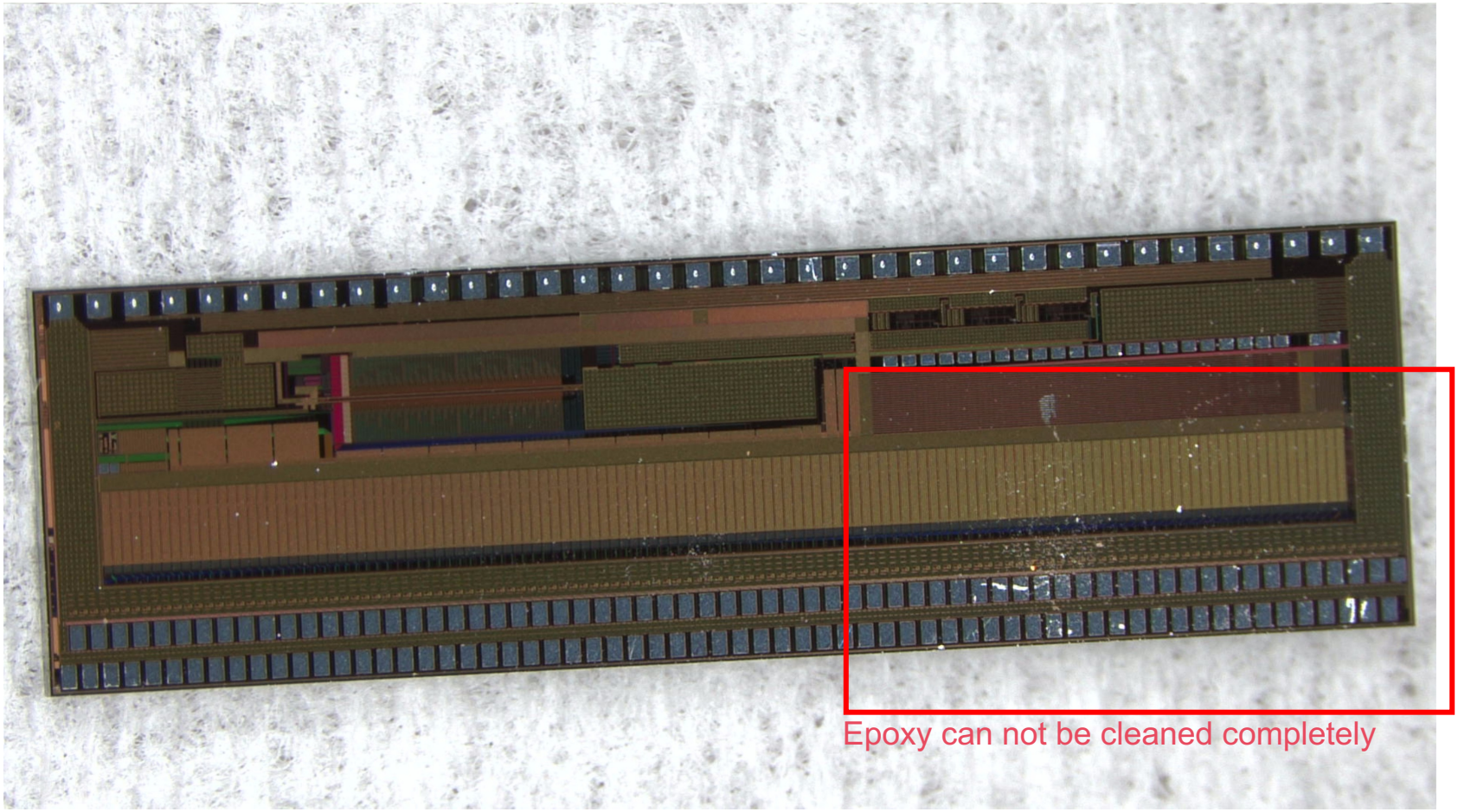
  Assemble 10 real chips again after making sure the proper glue applying parameters.

- Assemble the dummy sensor and check the position error by using OGP

- Produce two real module before 5/29

Back up

The photo of Chip after the chips assembly test



Schedule

- ~~Set up Test Bench in NCU.~~
- ~~Solve the glue dragging problem when using syringe to apply glue~~
- Test encapsulation.
- ~~Check the bonding performance with OGP~~
- Try to make a functional module in Taiwan.