

LAr R&D Progress Updates

Yichen

9/23/25



Lab Safety and Space Management

► Planned power outage 9/19-9/21

- This time the power outage indeed happened
- The highbay lab and 1-3 th floors of EDG wing were out of power around 6pm on Friday
- Power reported resumed on Sunday afternoon around 4pm
- Two more power outages planned in the coming weekends
- Checklist prepared as suggested by Milind

► EEI inspection

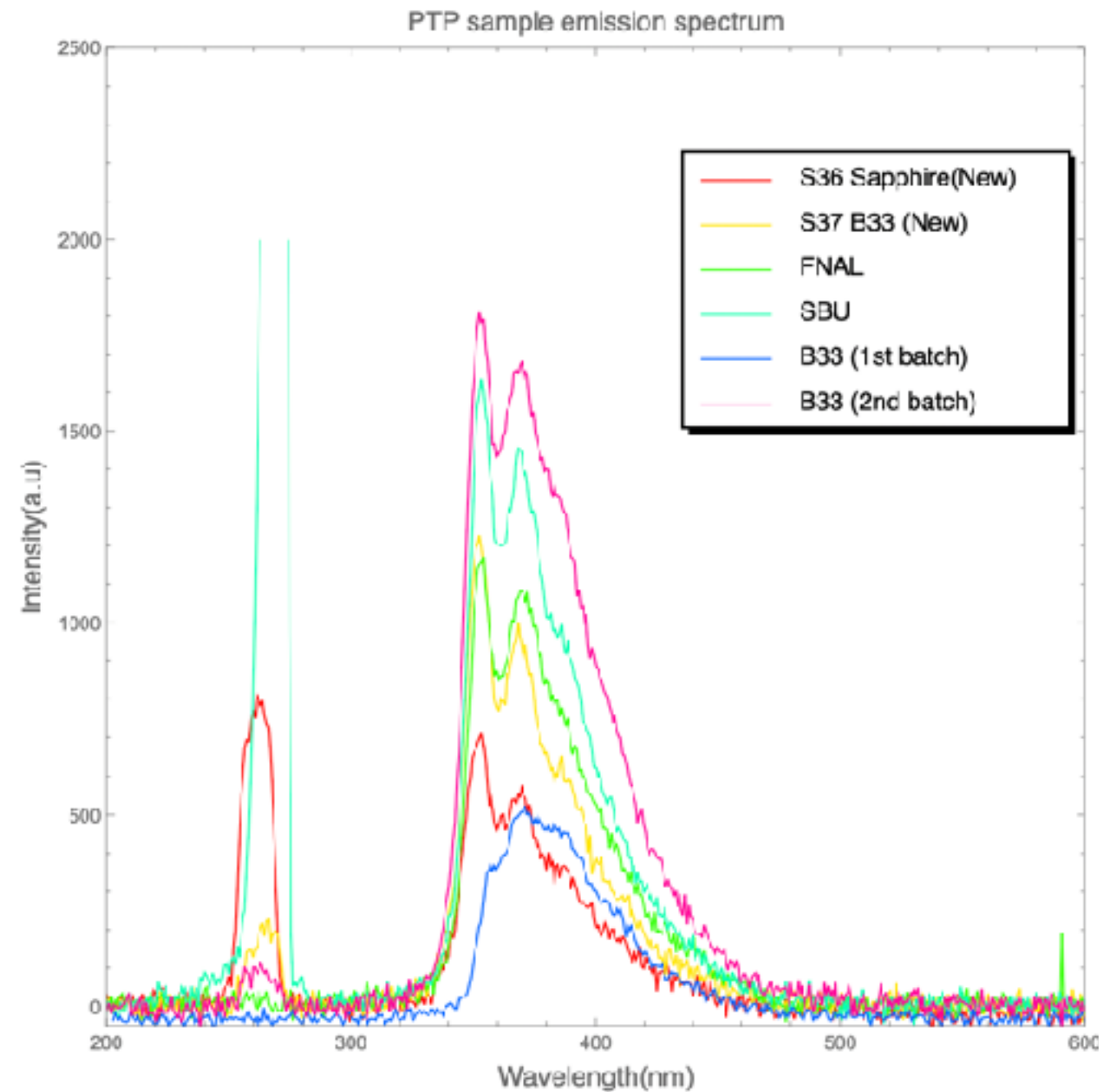
- One more inspection request from Volodya on an old vacuum pump

Status	Location	System Name	User(s)	Inspector
[x]	HighBay Lab	LAr Teststand	Yichen	Shanshan Gao
[x]	HighBay Lab	Robotic Chip Testing Station	Volodya	Yichen
[x]	RM1-86	CE Test Lab	Lingyun / Shanshan	Yichen
[x]	RM1-216	CE Test Lab	Lingyun / Shanshan	Yichen
[x]	2-233	3D Detector	Guang / Milind	Yichen
[x]	2-233	Optical Teststand	Yifan	Yichen
[x]	2-224	Dark Test Lab	Gannon / Praveen	Yichen
[x]	1-216	DUNE HV test	Volodya	Yichen

Spectrum measurement on the 2 new samples

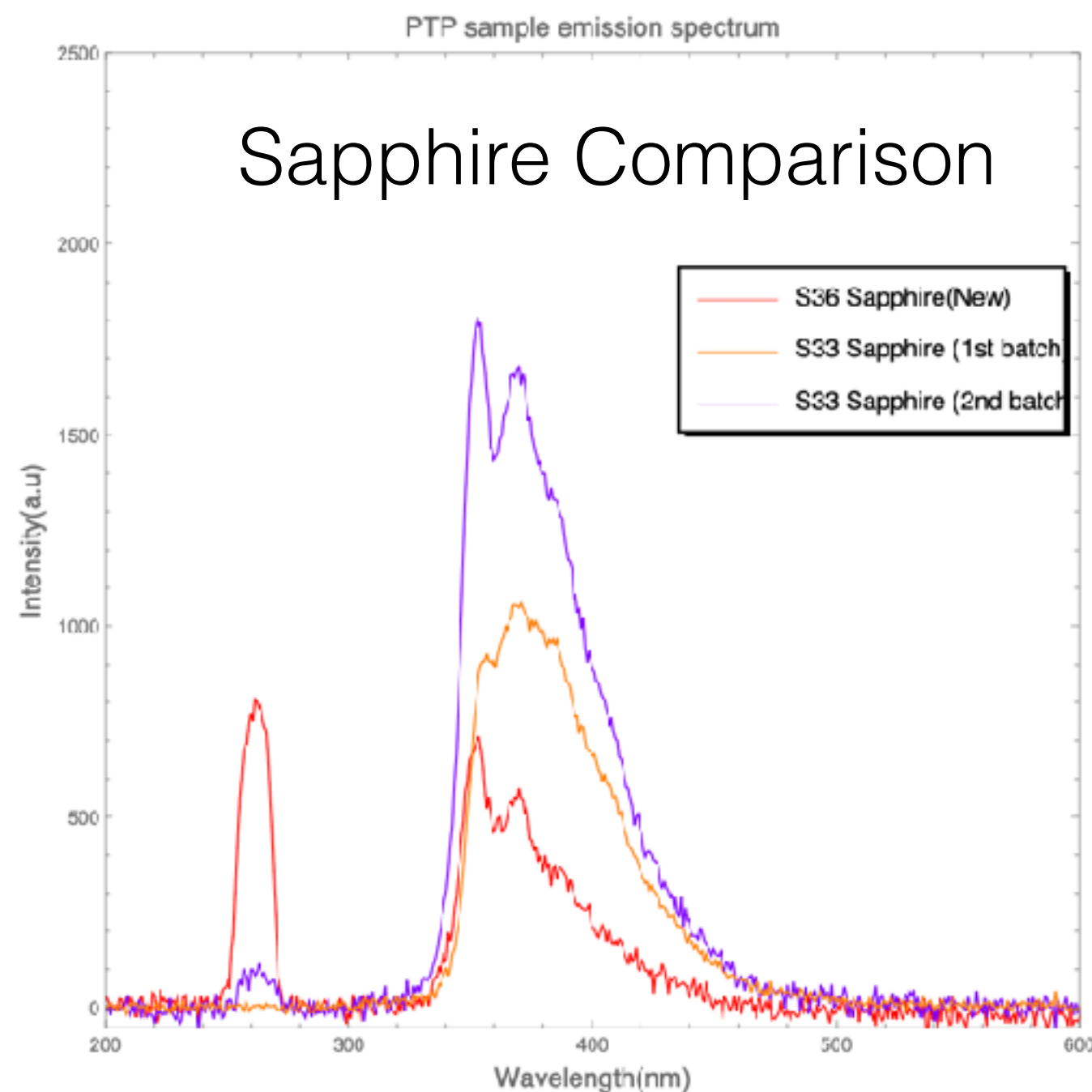
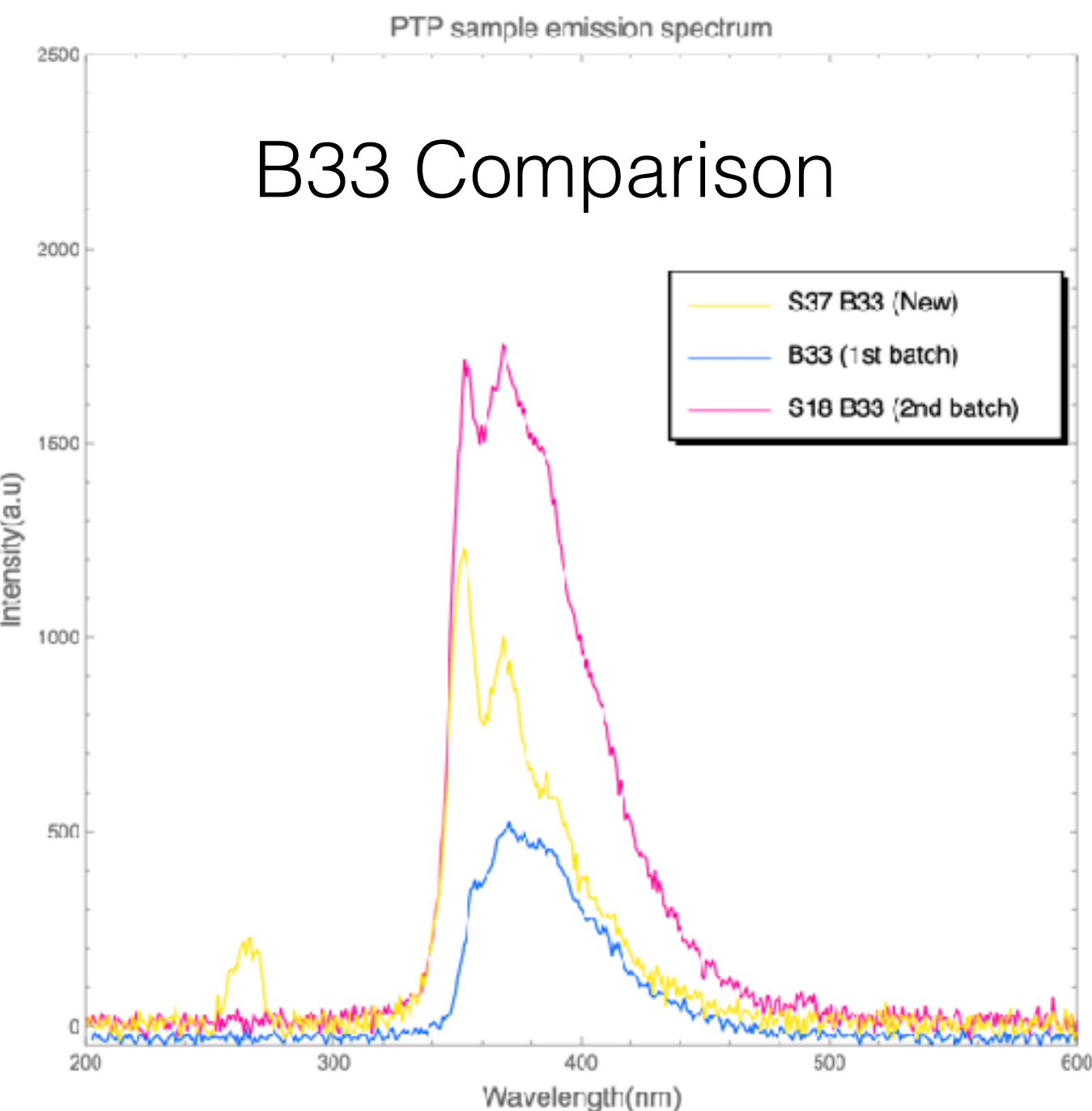
► Two new samples received from Yimin

- ID as S36 (sapphire) and S37 (B33)
- Pretty good uniformity by visual
- Thermal-Fisher pTP was used
- Previous 1st and 2nd batch are generic generic (claimed by the supplier to be identical to TF one)
- The latest batch has similar emission spectrum structure to SBU and FNAL samples, slightly different from the last batch



Spectrum measurement on the 2 new samples

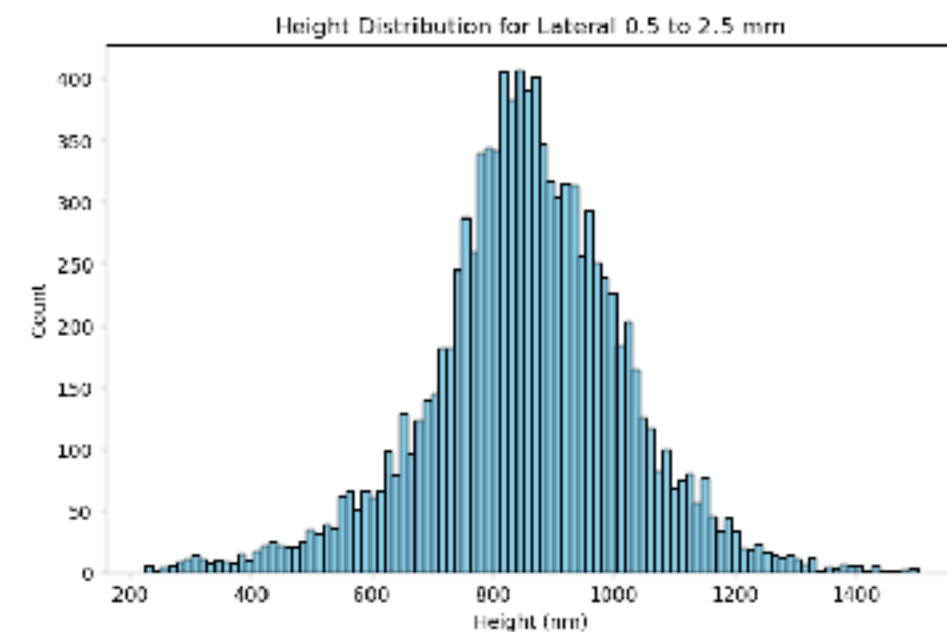
- There are still some differences between generic and TF branded pTP spectrum



Thickness measurement on the 2 new samples

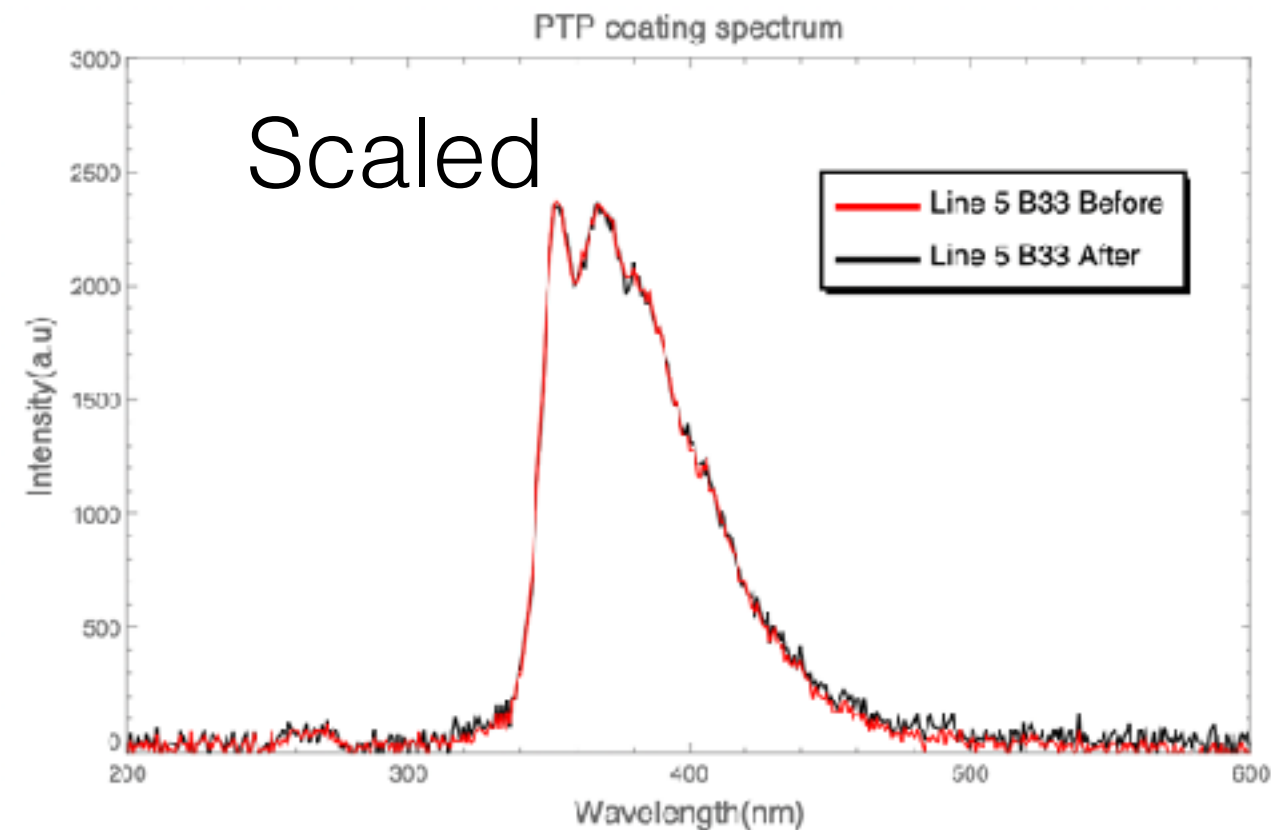
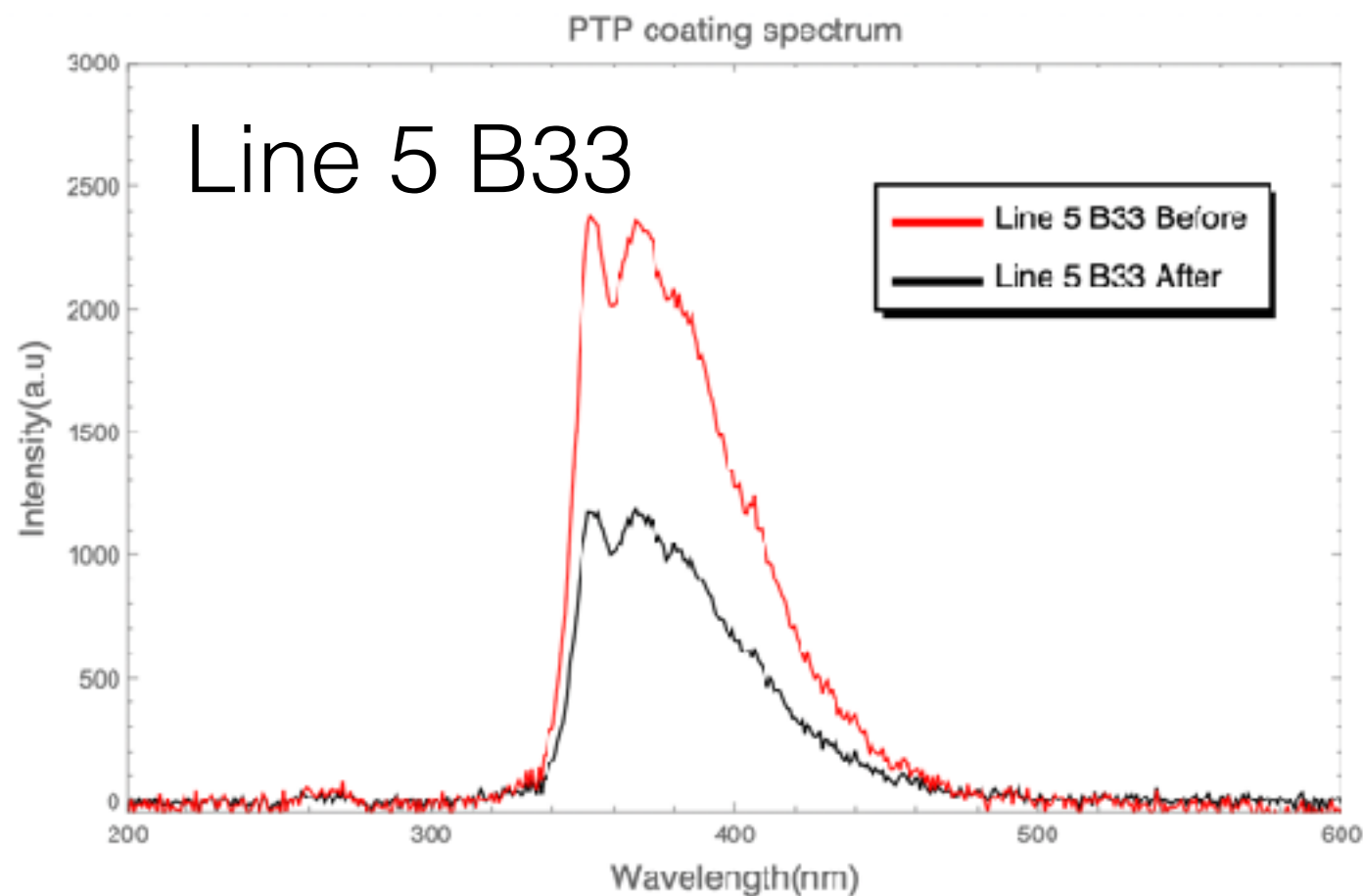
► Thickness measurement with profilometer

- The two new samples have no edges, the coating covers the full surface
- Small portion of the coating removed to measure the thickness
 - Thickness measured to be much less than the claimed 2um thickness $\sim 1\mu\text{m}$
 - May due to incomplete removal of the coating
 - Sent the feedback to Yimin, he is going to make the new samples with edges
- Still no converged results on the eclispometer



Spectrum measurement on samples after cryo test

- ▶ **Repeated spectrum measurement on the samples after cryo test**
 - 3 samples have been put in the LN2 bath have been measured
 - Only 1 sample has been measured
 - The amplitude reduced, but the spectrum shape well maintained
 - Will measure the other 2 samples once the driver problem resolved



Other updates

► **Procurement**

- New desktop received at ITD, waiting for setup and configuration
- Power meter and probes ordered from Thorlabs
 - Readout module has been shipped out
 - Thermal meter probe is still pending, will change to order one in stock in case it can't be shipped out by the end of this week (Bob has one of the probe we could borrow)
- Second batch substrate order
 - Reminding Yimin about the deadline of shipping out the rest of the samples before the procurement deadline

► **Paper status**

- I have put in some preliminary input to the overleaf draft
- Still waiting for Yimin's input
- The major missing content is the coating details that can only come from Yimin. I will try to coordinate a meeting later this week.