

# LAr R&D Progress Updates

Yichen, Milind, Aleksey, Steve

5/6/25



# Lab Safety and Space Management

## ► **National Electrical Safety Month**

- May is Electrical Safety Month
- Please read the lesson learned document from Achim.

## ► **ESH walkthrough**

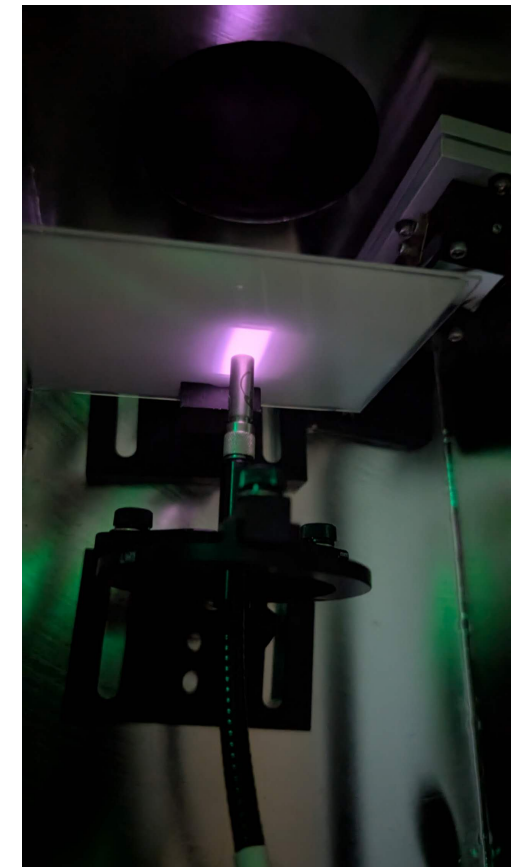
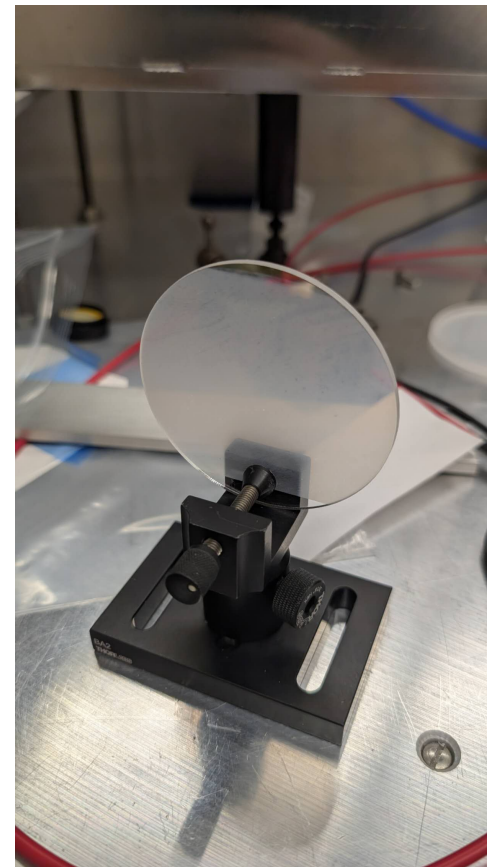
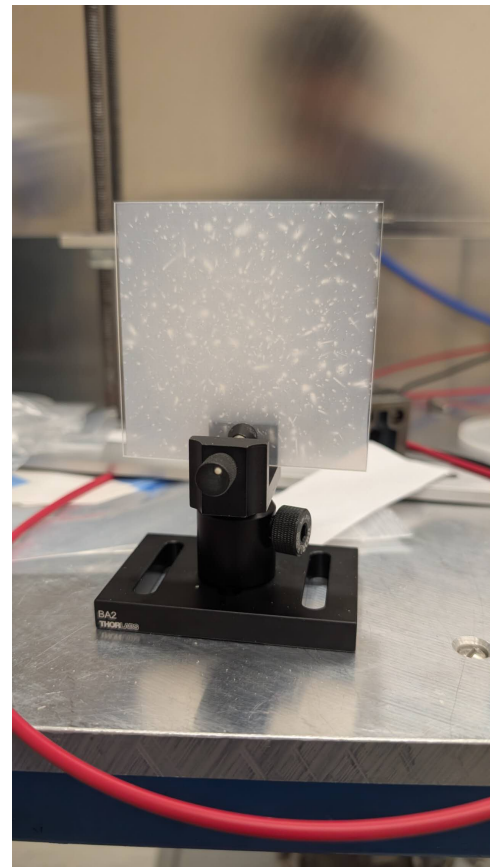
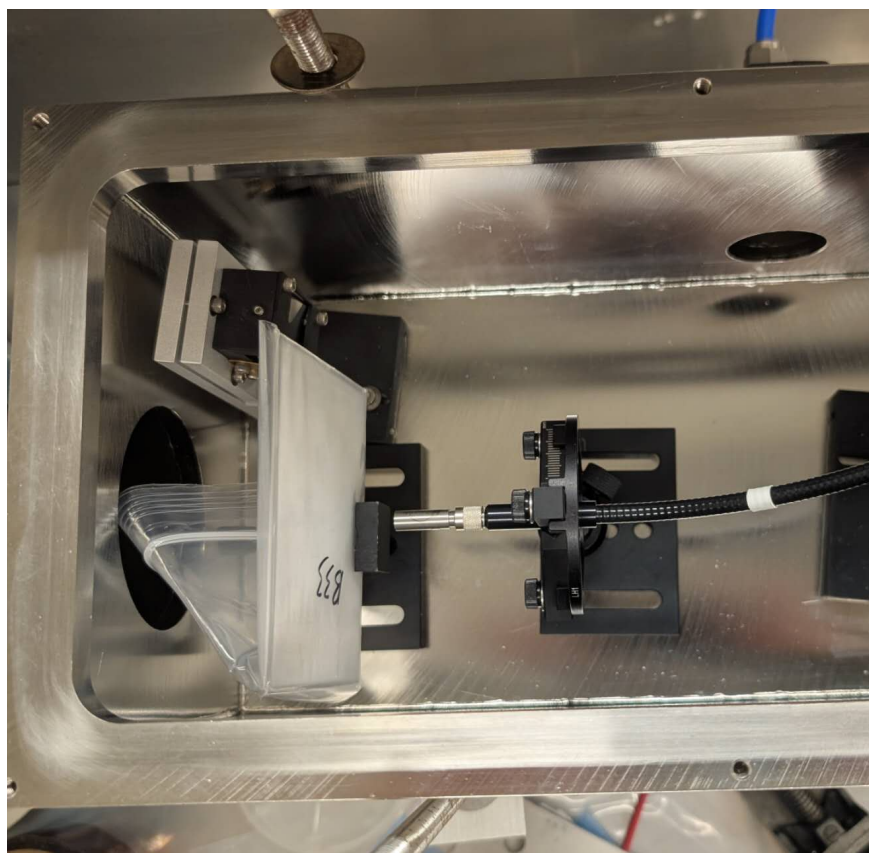
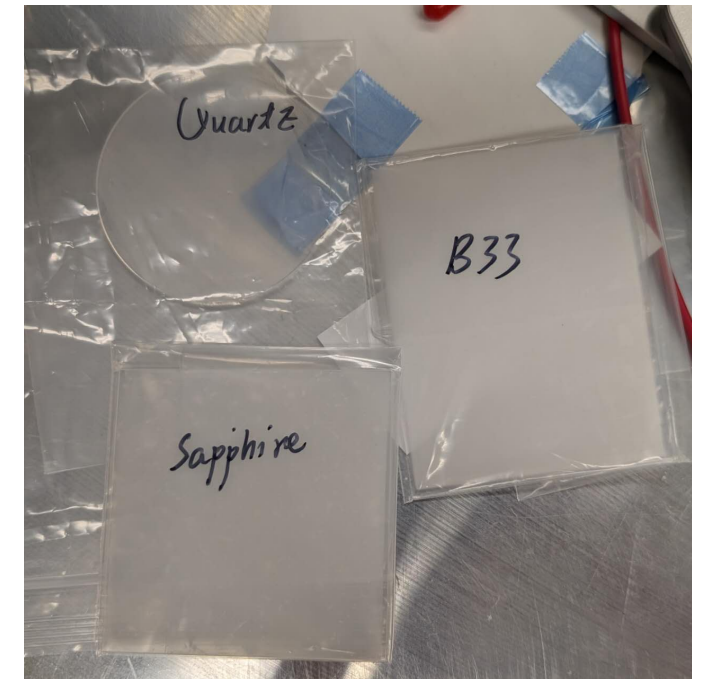
- Monthly walkthrough was conducted last Wednesday
- No complains to our lab space



# PTP filter emission spectrum measurement

## ► Setup

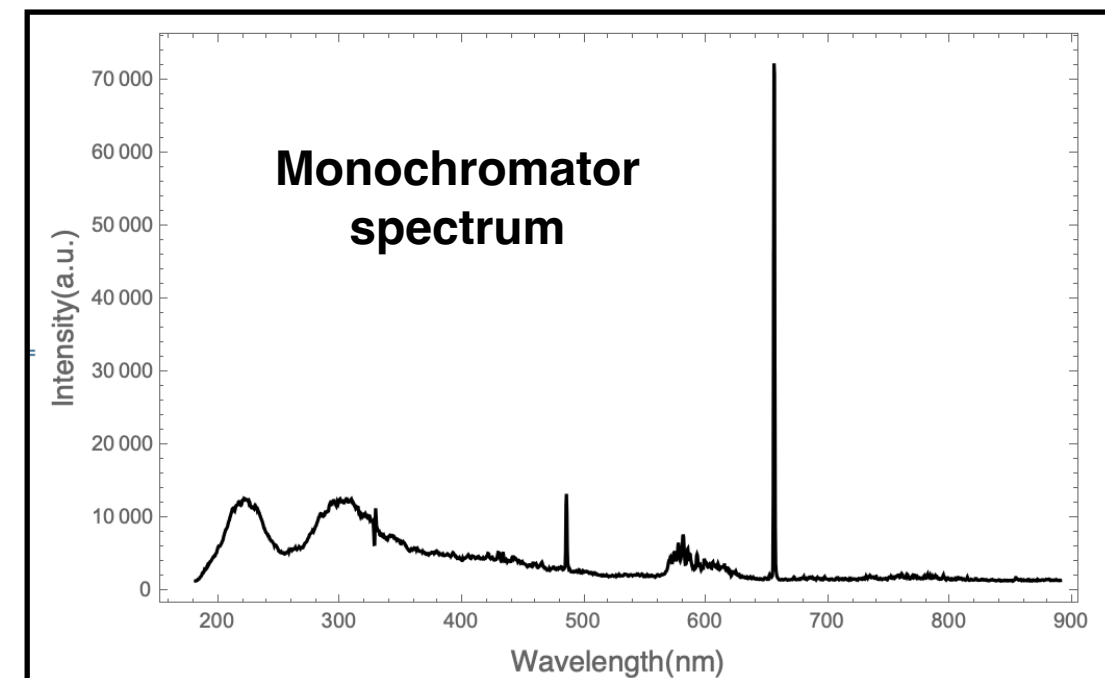
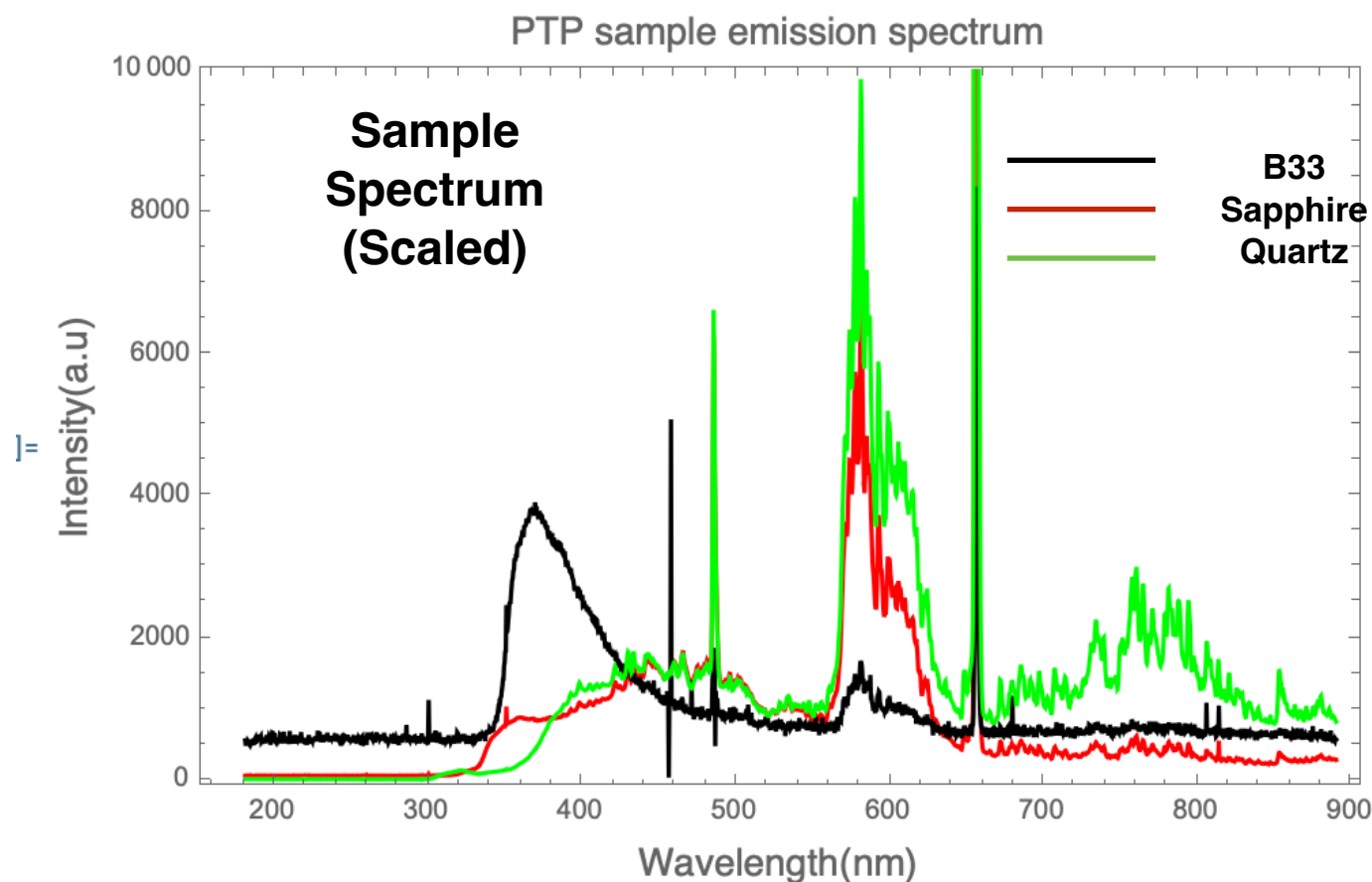
- The same as the previous measurement on diamond
- Light collection with 0.125 UV collimator+fiber
- UV spectrometer with 185nm LDL, borrowed from ePIC
- The coating thickness seems to be different on each substrate by visual



# PTP coating emission measurement

## ► Full-spectrum emission

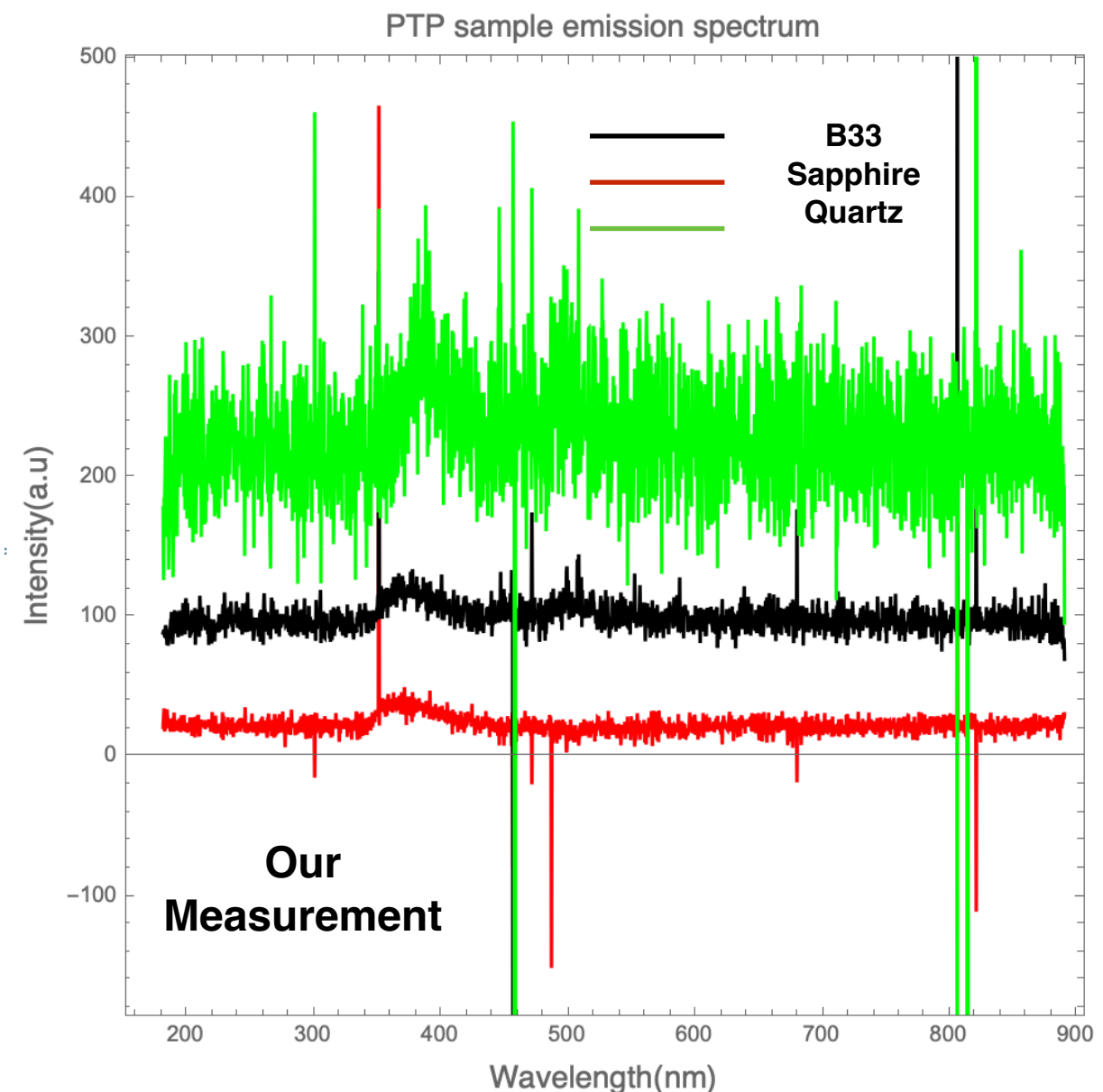
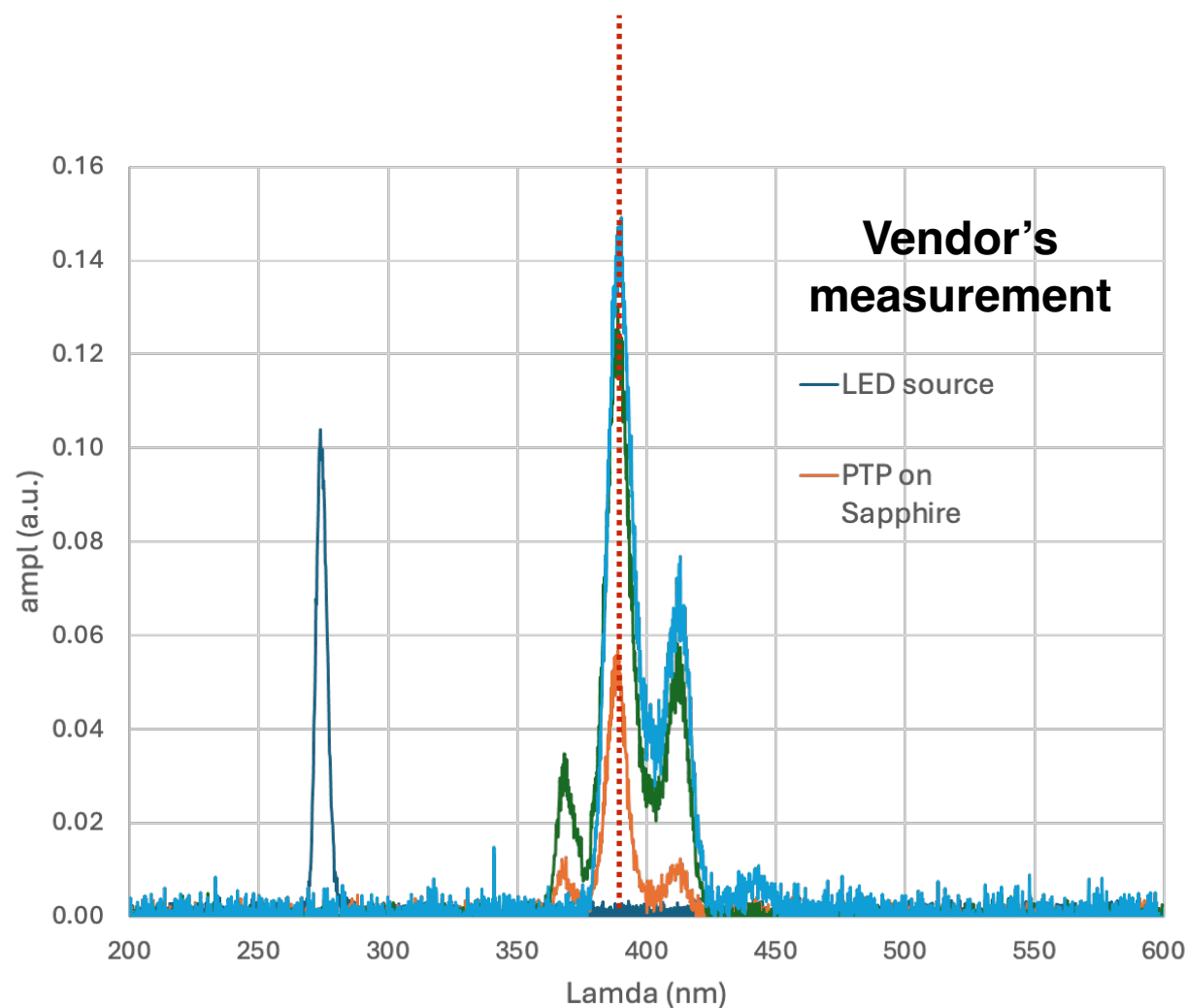
- Take the full spectrum before wavelength selection to optimize the alignment
- Spectra scaled for illustration
- The cut-off at low wavelength illustrates the transmission



# PTP coating emission measurement

## ▸ 266nm single wavelength emission

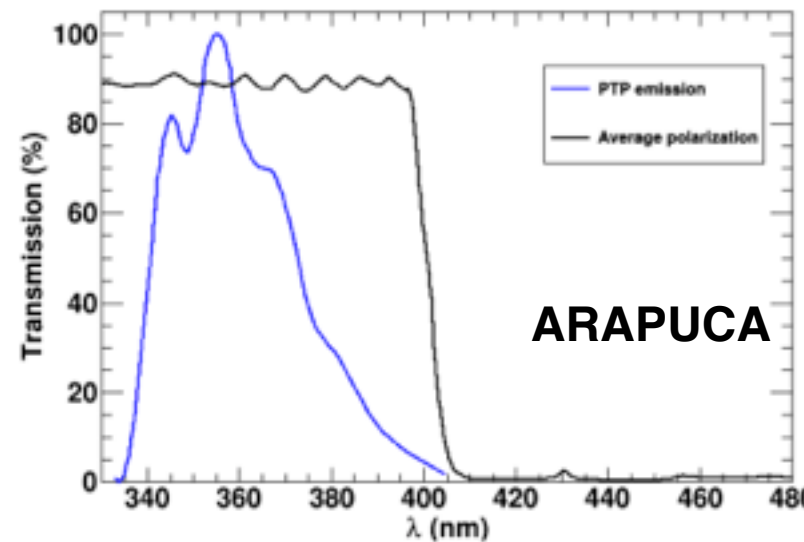
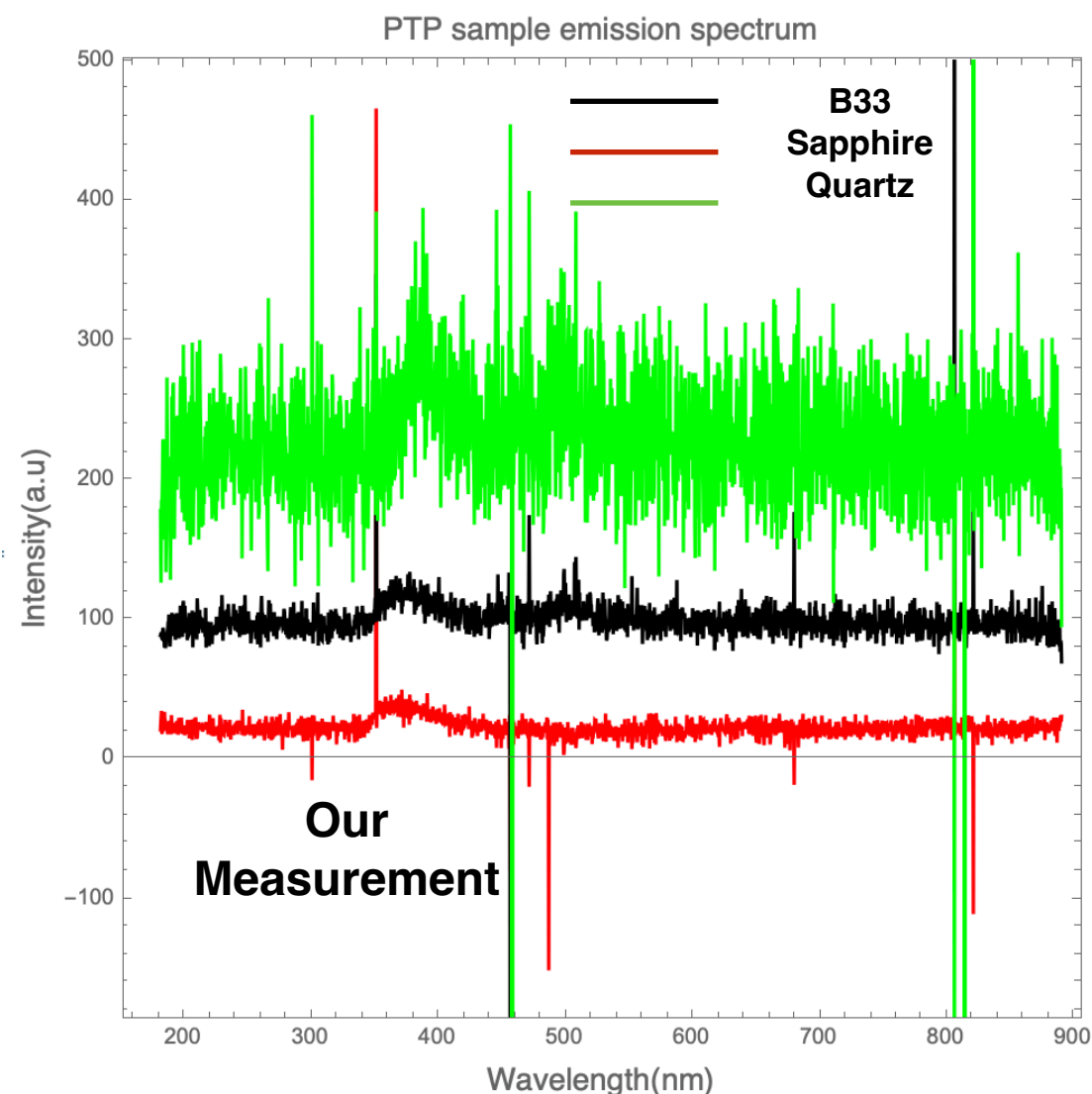
- The emission is pretty low, low integration time used, 10 mins each spectrum
- Quartz emissions very low, may due to the coating thickness, will conduct thickness measurement at IO
- Our results shows different peak from the vendor, better agreement with the reference



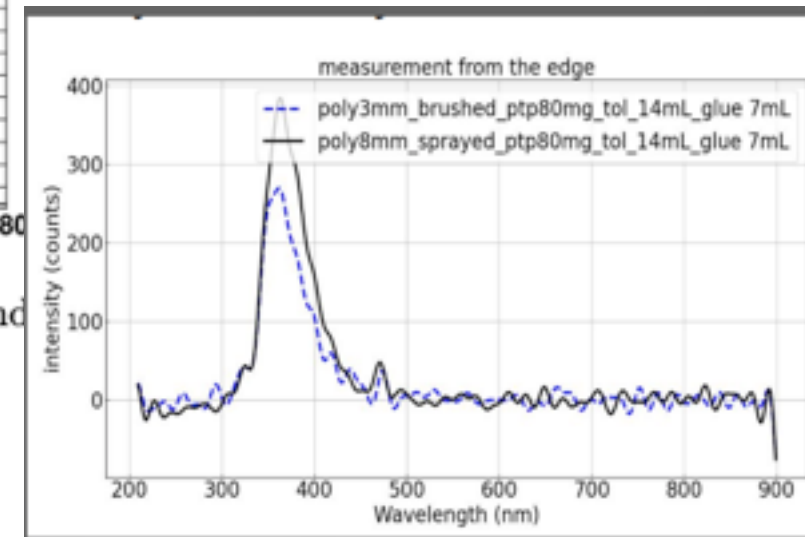
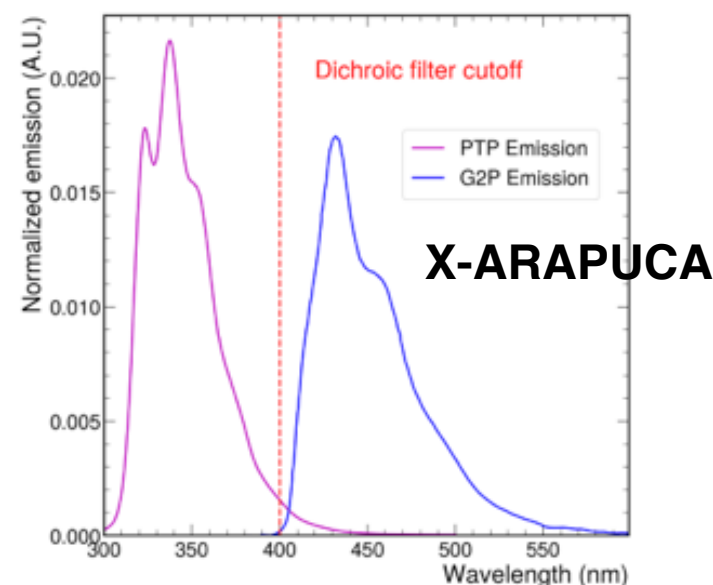


# Comparison to the reference

- Thanks to Jay's reference study and inquiry for measurement by SBU
- Our results are slight higher than in the reference while the reference results also have differences



(a) Dichroic filter transmission and p-terphenyl emission spectra



SBU measurement