LAr R&D Progress Updates

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BROOKHAVEN
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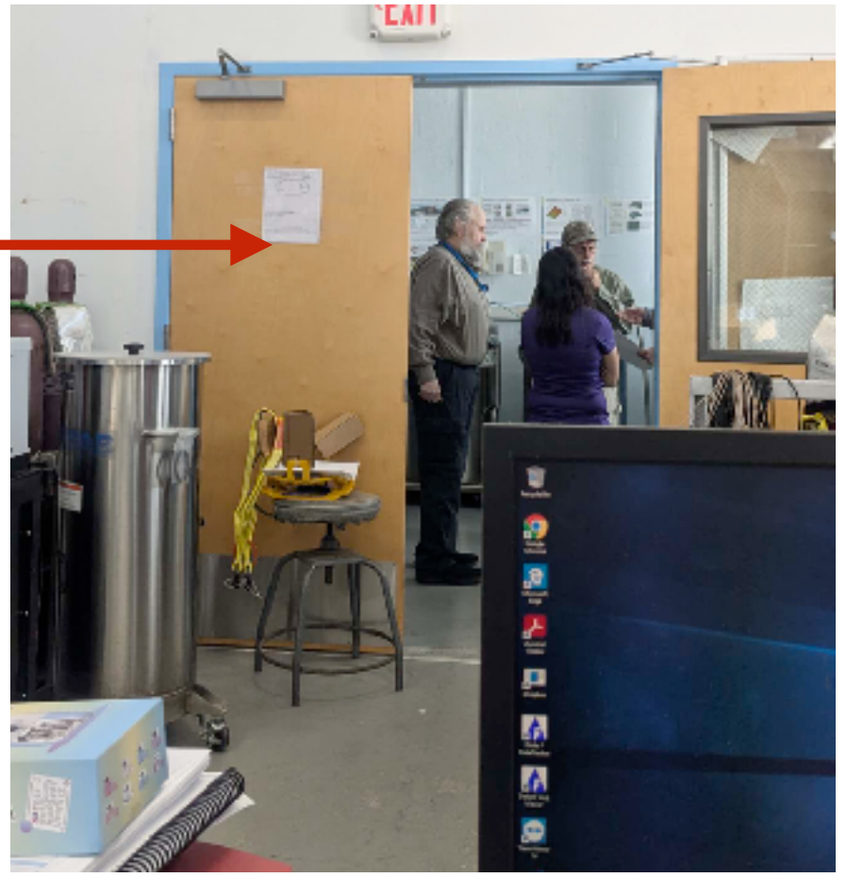
Lab Safety and Space Management

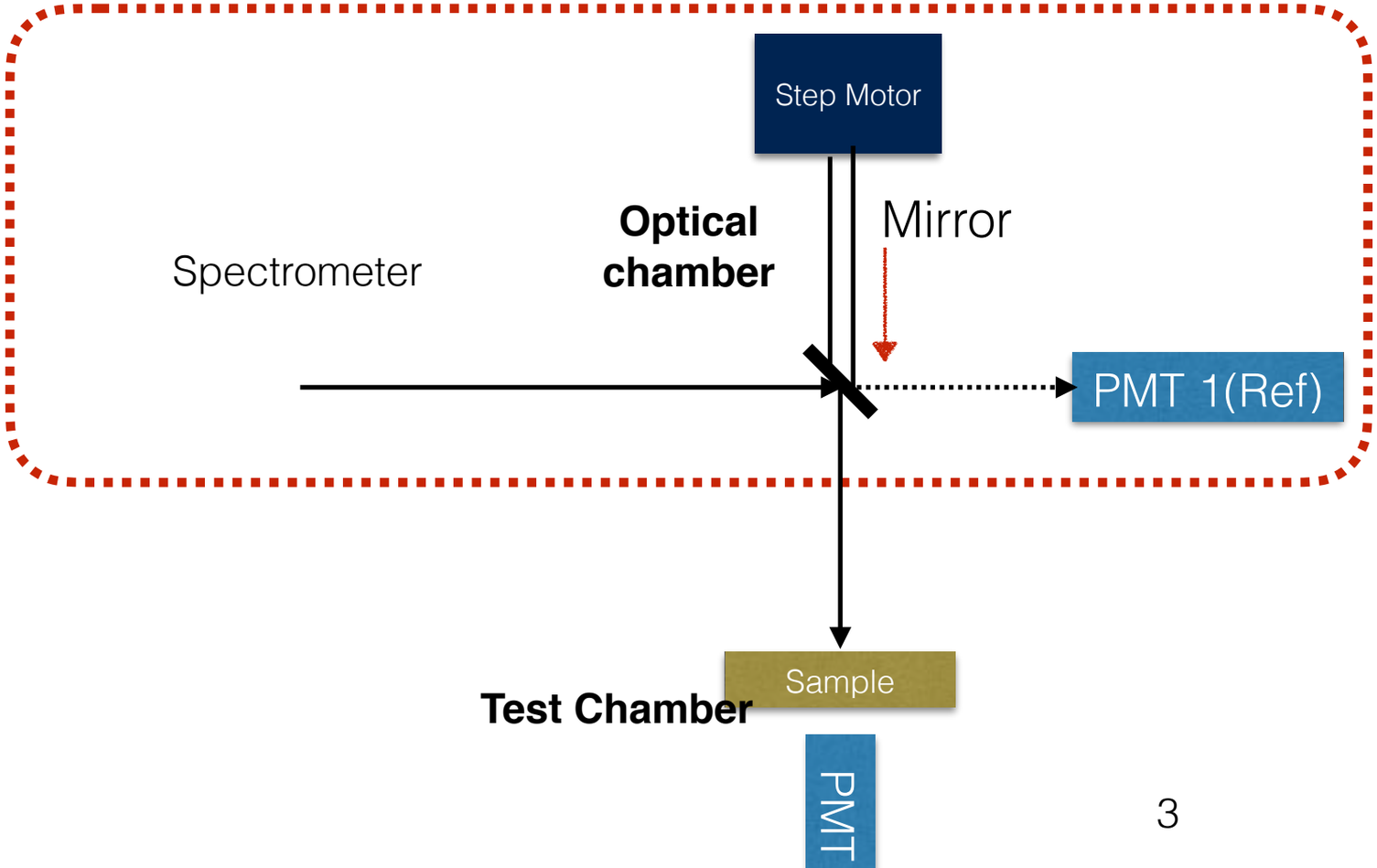
- **Safety inspection on the corner room**
  - Lab safety came over today for an inspection on the cold test robotic testing stand
  - The test is expected to run with portable dewars at the beginning given the LN2 plumbing project is still pending
  - Due to ODH concern, the tes run with the door fully open with a fan venting into highbay

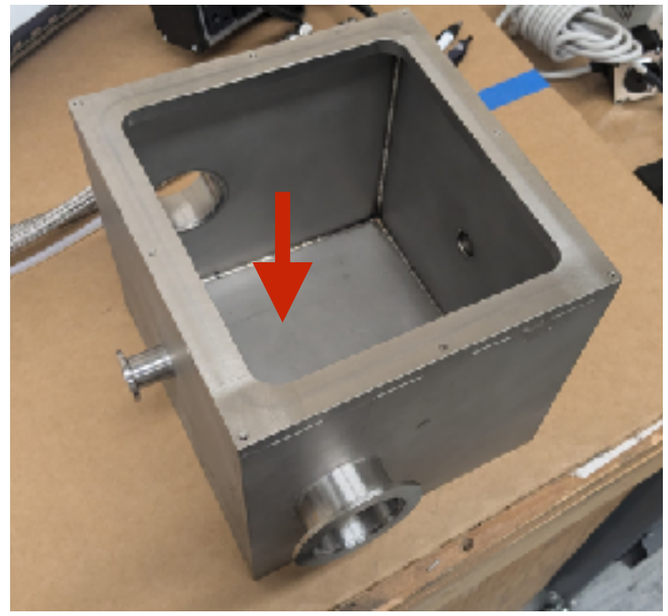
This side is also required to keep open



Spectrometer Project Discussion

- We had a discussion with Bob, Bill, and Craig Woody last week
- Two steps for spectrometer
  - 1. Phase 1: Refurbish the spectrometer with the *optical chamber*, run the sample in both Vac. And GAr conditions (in the red dashed frame)
    - First turning on the lamp to check the light spot profile to determine the distance of optical chamber
    - Modify the optical chamber adding the ports for connection to test chamber
  - 2. Phase 2: Add the *test chamber* for the cryogenic test, the sample can be tested in Vac. GAr and LAr
    - Maximum the size of the test chamber to 16.5” conflat with 14” inner diameter to accommodate the detector

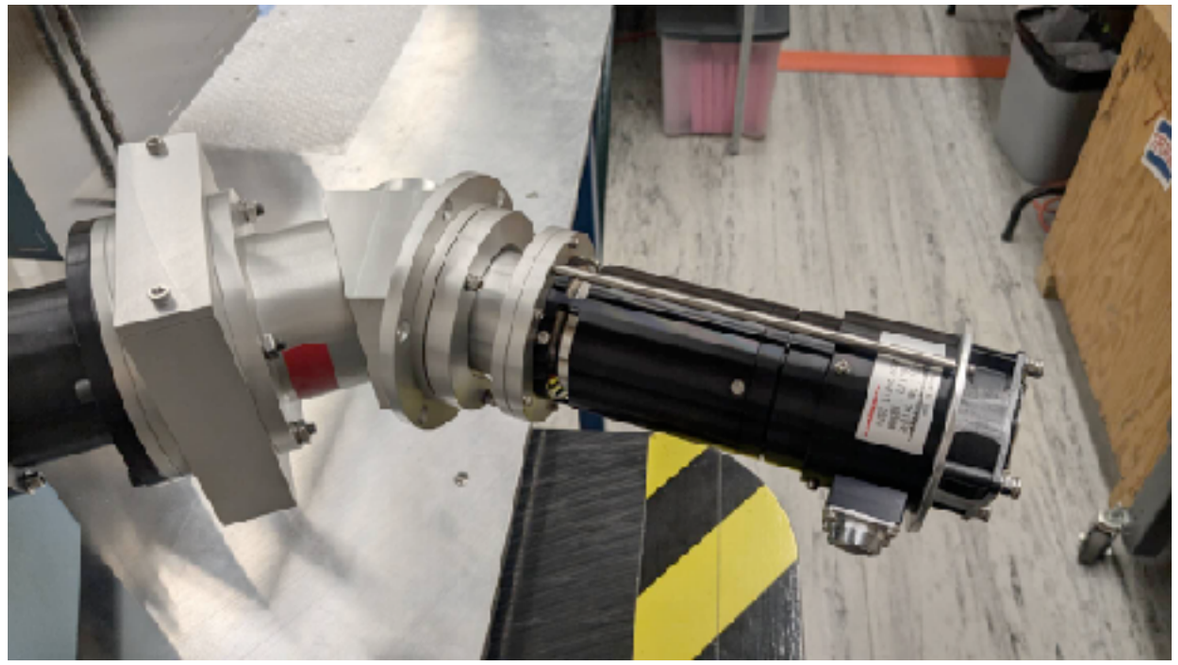




Optical chamber

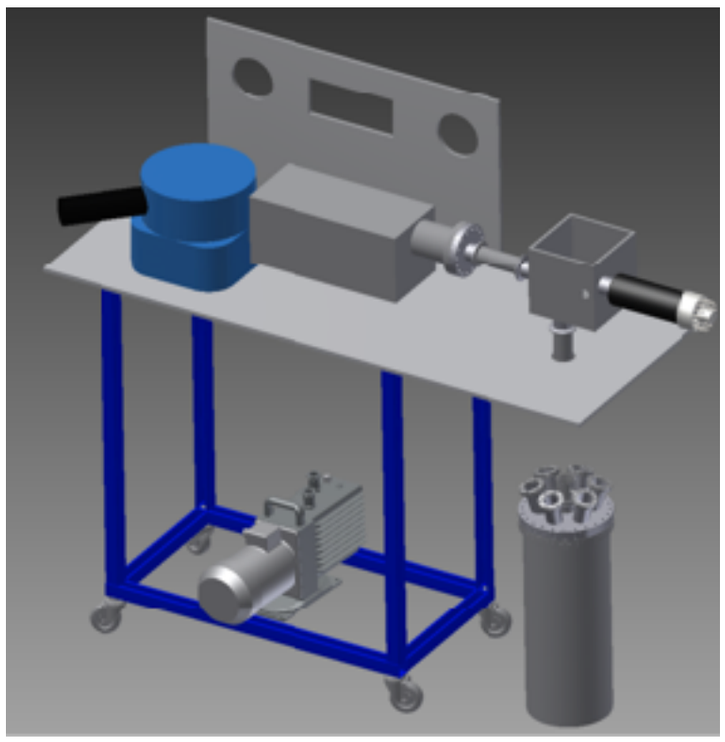
Spectrometer refurbishment(Phase 1)

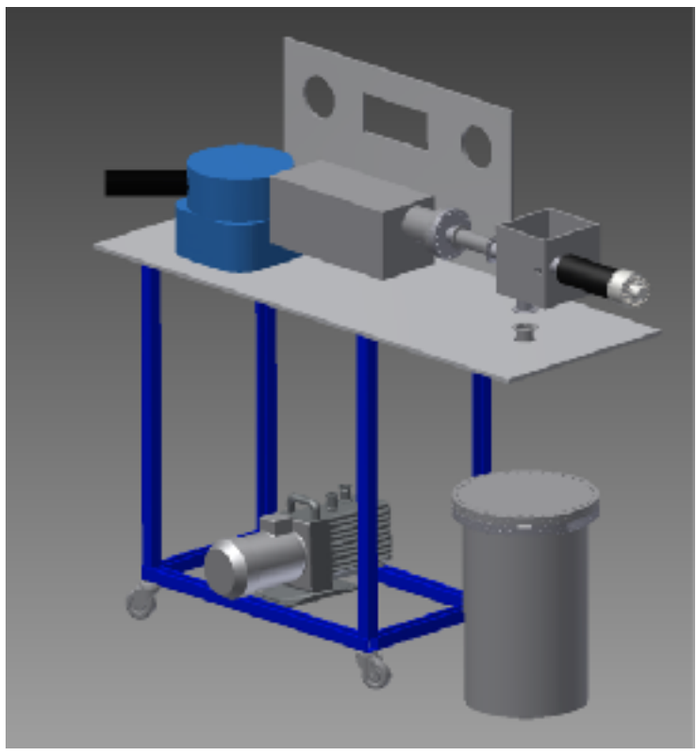
- **Bringing the spectrometer back online**
  - All parts have been received for the spectrometer refurbishment
  - The lamp has been replaced
  - Mirrors was delivered on Monday
  - Will turn on the lamp with Bob and bill to check the light profile to confirm the distance for optical chamber

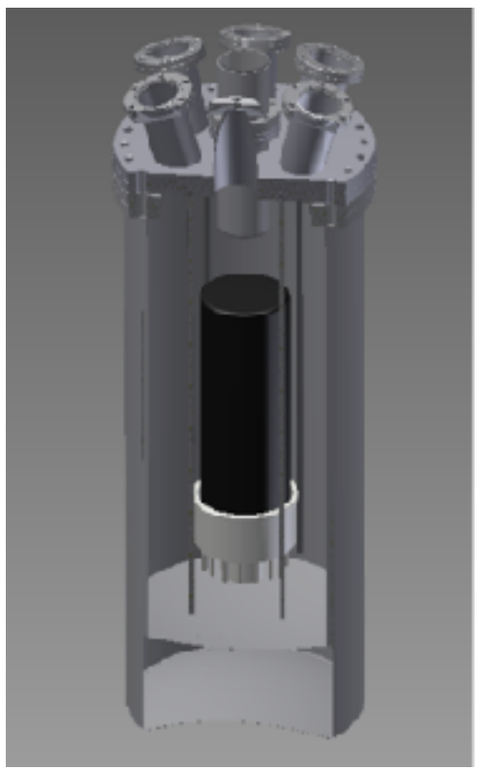


Spectrometer refurbishment(Phase 2)

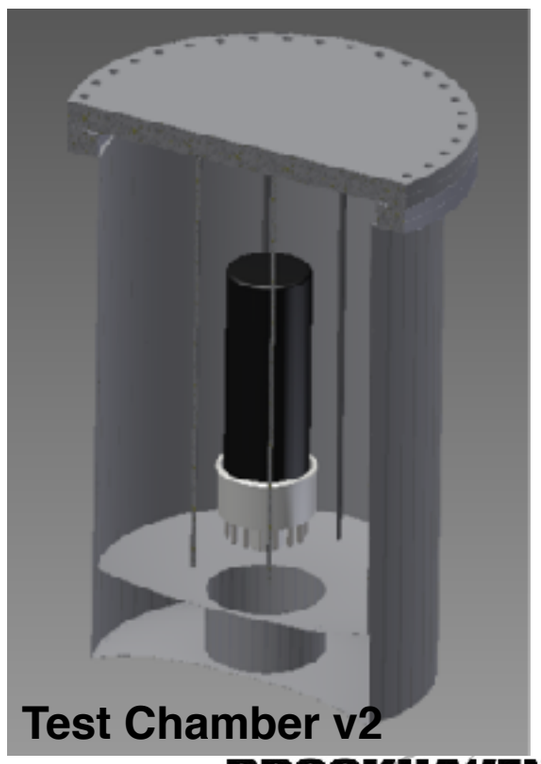
- **Test chamber design**
  - The test chamber was design with the 10” Conflat flange with multi-port catalog product, chamber ID with the top flange is only, 8.5”
  - Increased the top flange size to 16.5” Conflat flange, the largest size available for Conlat, chamber ID increased to ~14.0”, (No existing multi-port flange design for 16.5, using a blank for demo)
  - Significant increase the volume of the system
  - Confirmed with Key High Vacuum, there is no technical difficulty on fabrication of the 16.5” Conflat top flange
  - Similar safety procedure as the production of 260-L dewar and top flange







Test Chamber v1



Test Chamber v2

Miscellaneous Updates

- Russ has returned to the lab
- We are working on the heater with wiring the resistor changes
- Dichroic filter work abstract was accepted by CPAD 2024 at the photon detector session for oral presentation