

Temple University MPGD Lab Facility and Plans

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☐ Experience

- Collaboration with Tech-Etch to develop large commercial GEM foils
- Detector construction: STAR FTG, sPHENIX TPC
- Active in EIC R&D program

☐ Facilities

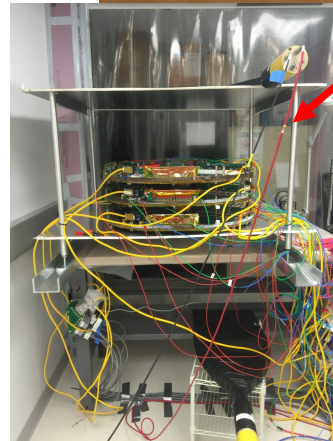
- Several lab and cleanroom spaces dedicated and equipped for MPGD construction and testing
- Access to Temple University Machine shop services

☐ We would like to participate in the

- The construction of the μ RWELL-ECTs
- Production testing and QA

❑ Assembled detector testing

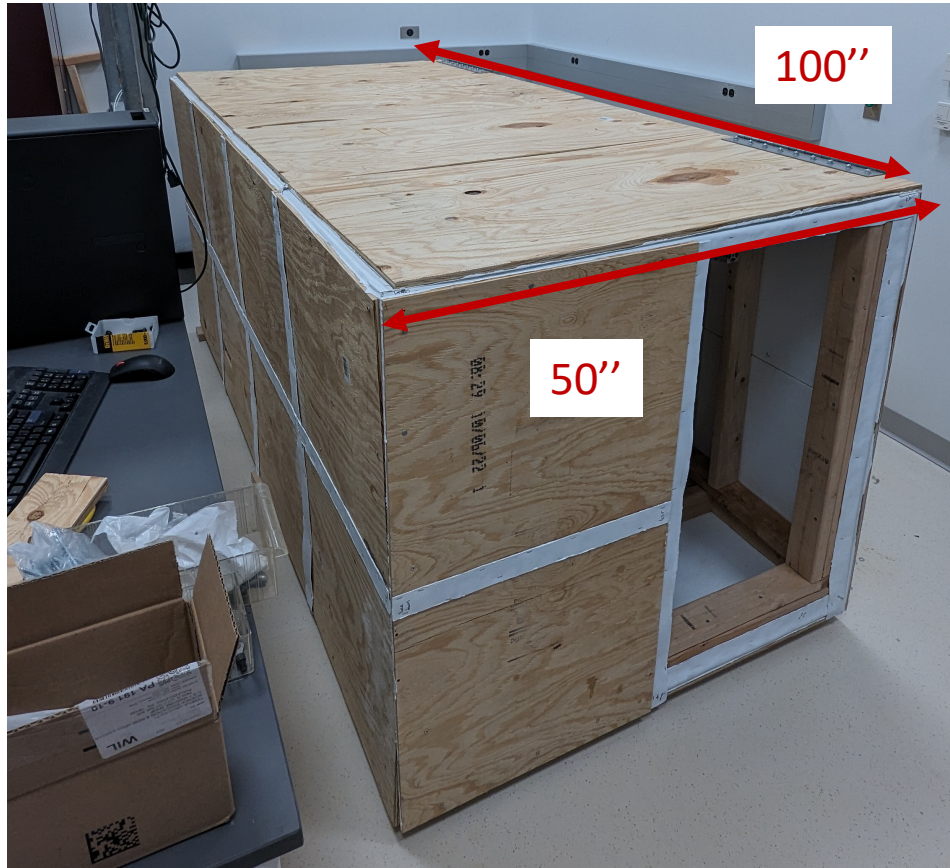
- Portable class 1000 cleanroom (800 sq. ft)
- Cosmic ray test bench
- 4'x6' optical table (in cleanroom)
- Detector gas flow system
- SRS DAQ system (w/FECv6 + ADC + rcdaq)
- CAEN HV system
- Ultra sonic bath (27.5 in x 26 in x 20 in)
- DI water supply
- Wiener HV crate/boards



Cosmic ray bench

Detector Lab (2)

- High-rate x-ray test station for large detectors
(in progress)



- Lab space (540 sq. ft)
- Table (5' x 11') → build new cosmic test stand



Machine Shop

- ❑ Assess to Temple University machine shop services
 - Custom machining jobs
 - Full time machinist
 - Components machined for EIC R&D, sPHENIX, and ePIC Aerogel projects

- ❑ Possible use of large oven (30 in x 30 in x 35 in)
 - Need to verify its operation
 - If works, would be free to use



Detector Assembly Cleanroom: Class 1000

❑ Permanent class 1000 cleanroom (1,800 sq. ft.)

- Two Gas distribution panels
- Leakage current boxes
- Two humidity controlled N2 dry boxes (48 in x 35 in x 24 in)
- 60 in x 100 in optical scanning system
- HV distribution box



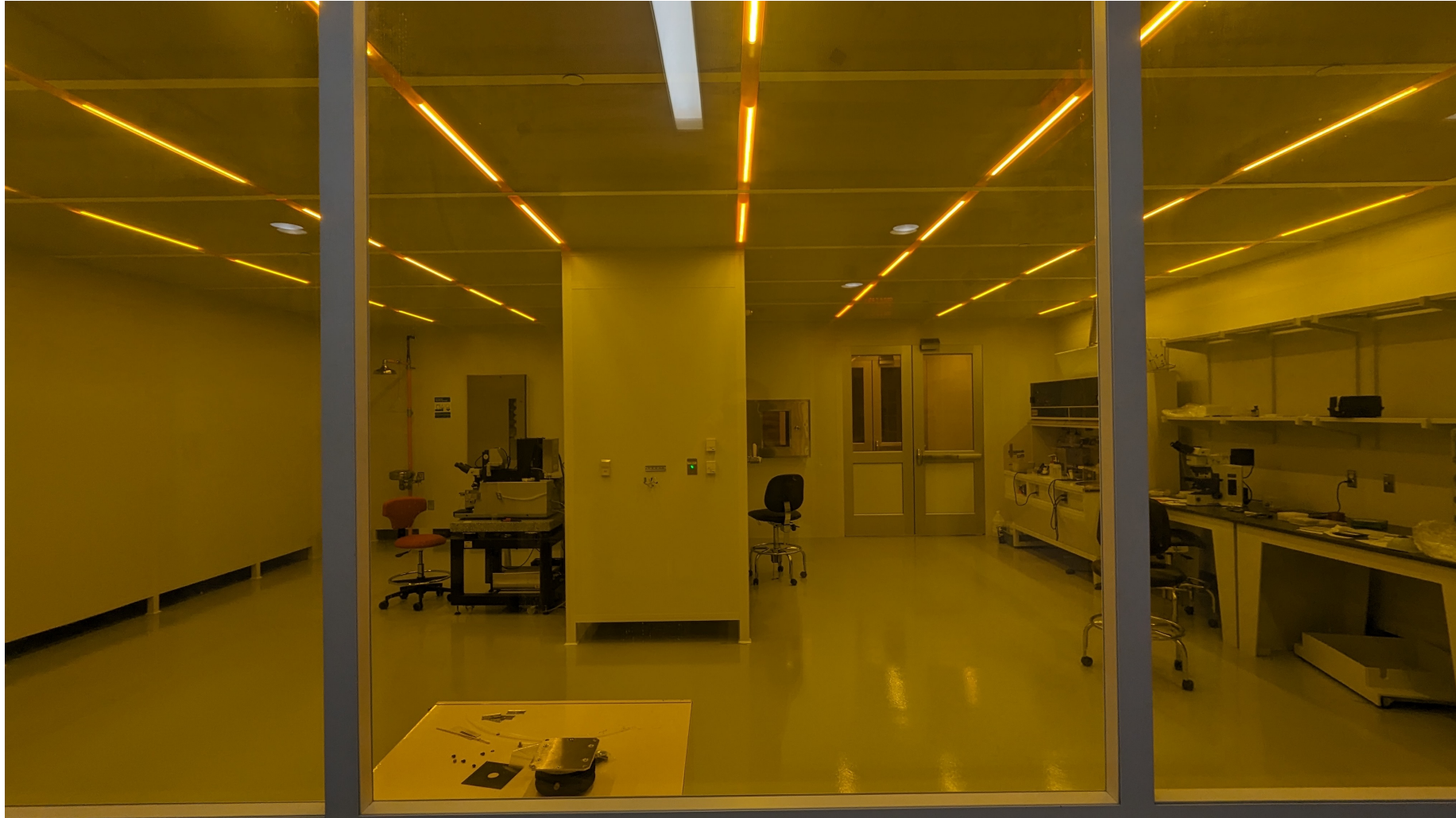
Detector Assembly Cleanroom: Class 1000

- ❑ Permanent class 1000 cleanroom (1,800 sq. ft.)
 - MPGD cleaning, stretching, gluing and testing stations

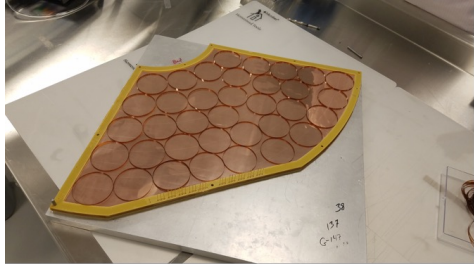


Detector Assembly Cleanroom: Class 100

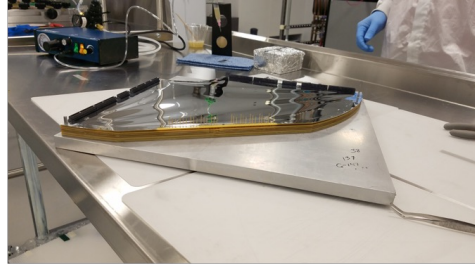
- ❑ Permanent class 100 cleanroom



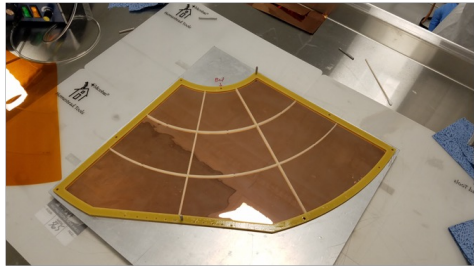
MPGD Facility



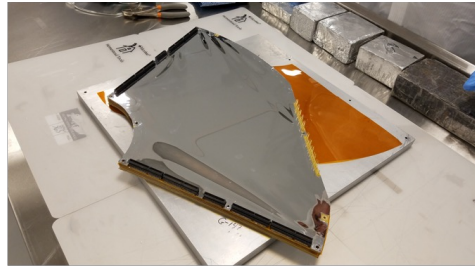
(a)



(b)

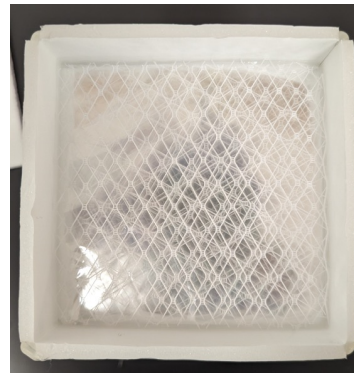
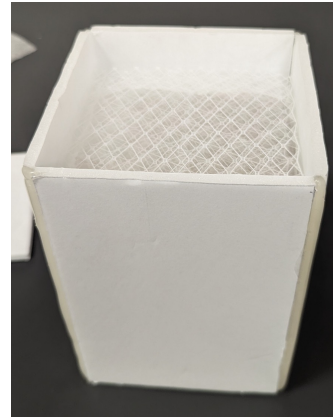


(c)

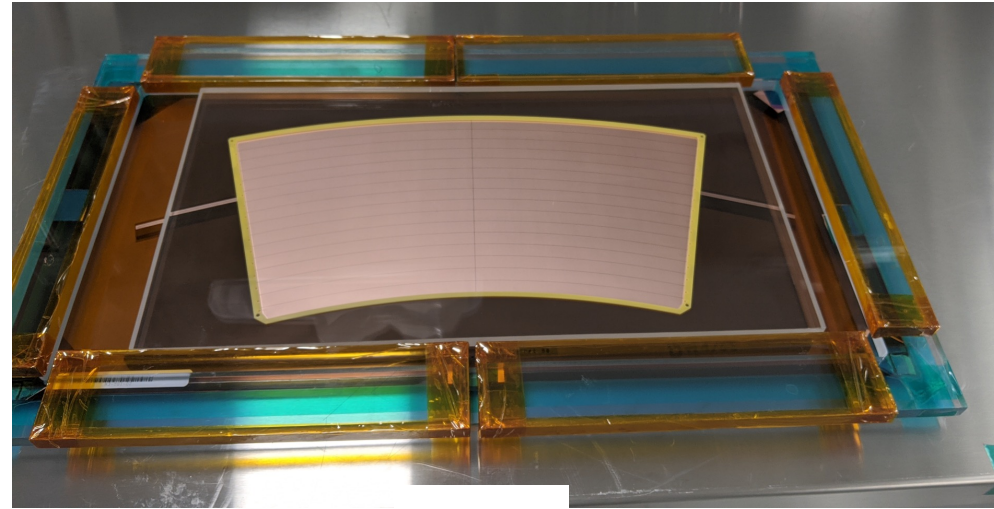


(d)

EIC R&D



EIC R&D
MPGD-TRD radiator layers



sPENIX

