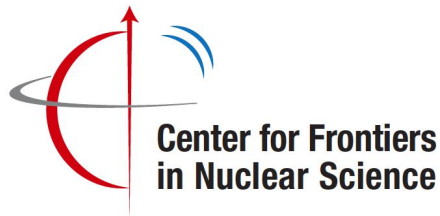


Mirror Reflectivity at Far UV Region - A Mirror Evaporation Facility at CFNS SBU

Wenliang Li
on behalf of the CFNS SBU

@ 1st International Workshop on A 2nd Detector for the EIC

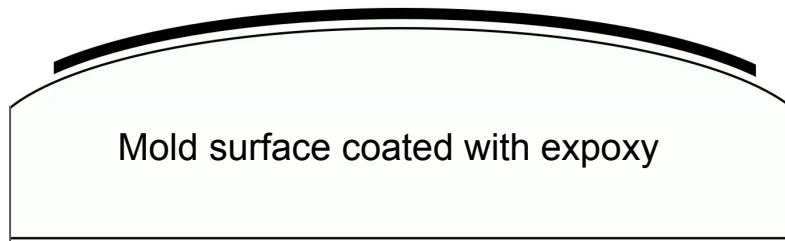
May 17, 2023



Problem with the Mirror Molding and Reflectivity

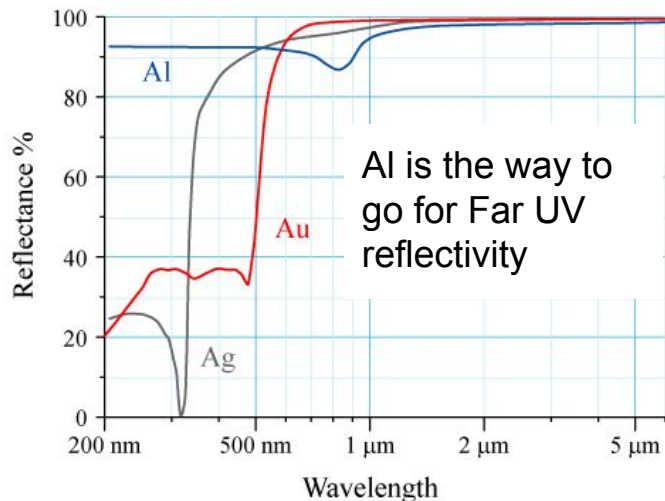
Problem #1: Molding the mirror to shape

- Mirror vendor: CMA
 - Polishing, Slumping, 3D printing, Epoxy, etc...
- Do it ourselves?



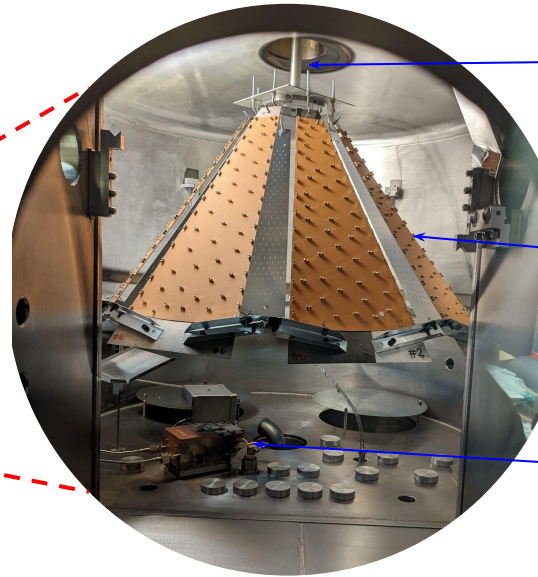
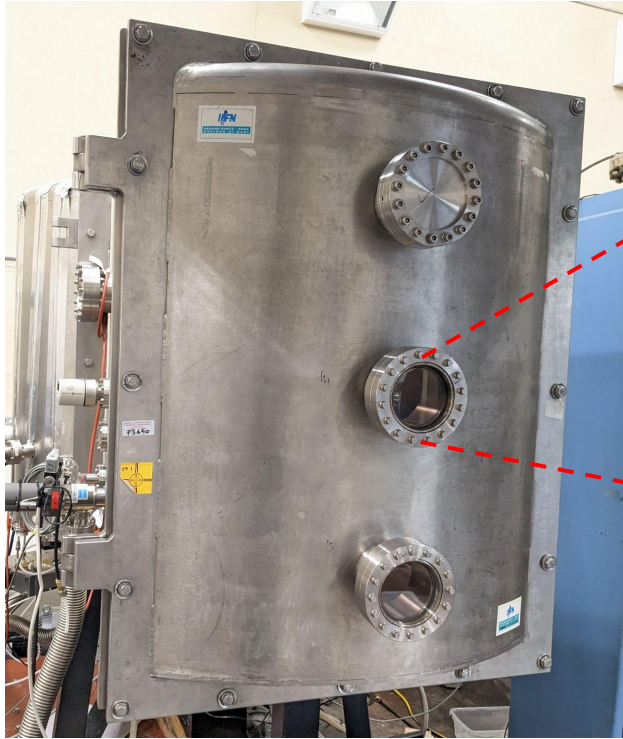
Problem #2 Reflectivity

- Coating vendor: ECI, First Surface, etc ...
- CERN
- They don't coat for our applications



Community-wide problem requires solution from the community.

A Mirror Evaporation Facility at Stony Brook



e/ion gun inlet

Mirror mounting
fixture

Metal crucible

Mirror size constraint: 80cm

SBU CFNS Plan

- **Immediate future:**
 - SoLID Light Gas Cherenkov Coating (required Far UV reflectivity)
 - SoLID Heavy Gas Cherenkov Coating
- **Potential future contribution:**
 - ePIC dRICH
 - ePIC pfRICH (not requiring FUV capability)
 - DIRC reflector
 - Detector 2 dRICH ?
- **Goal: challenge the EIC relectivity (on Al coated Lexan) at FUV (~150 nm) region.**

