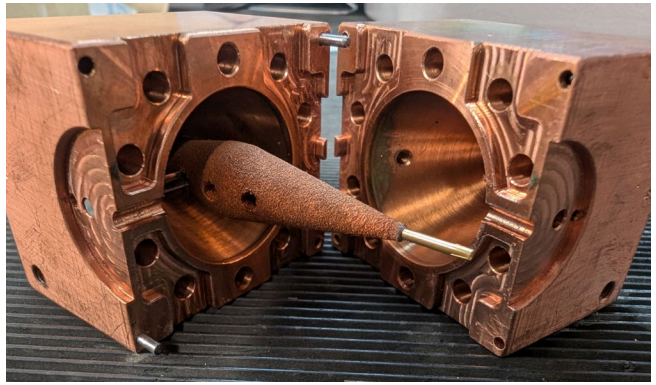
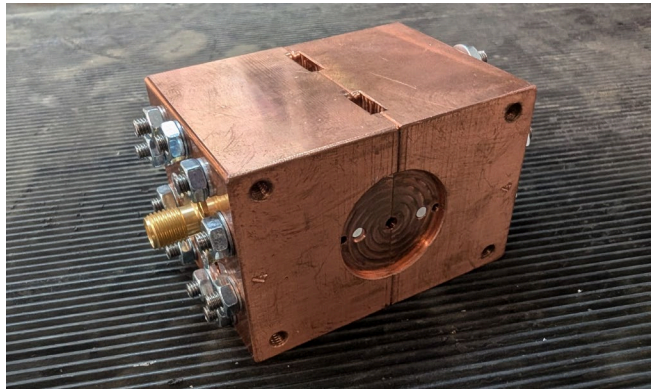
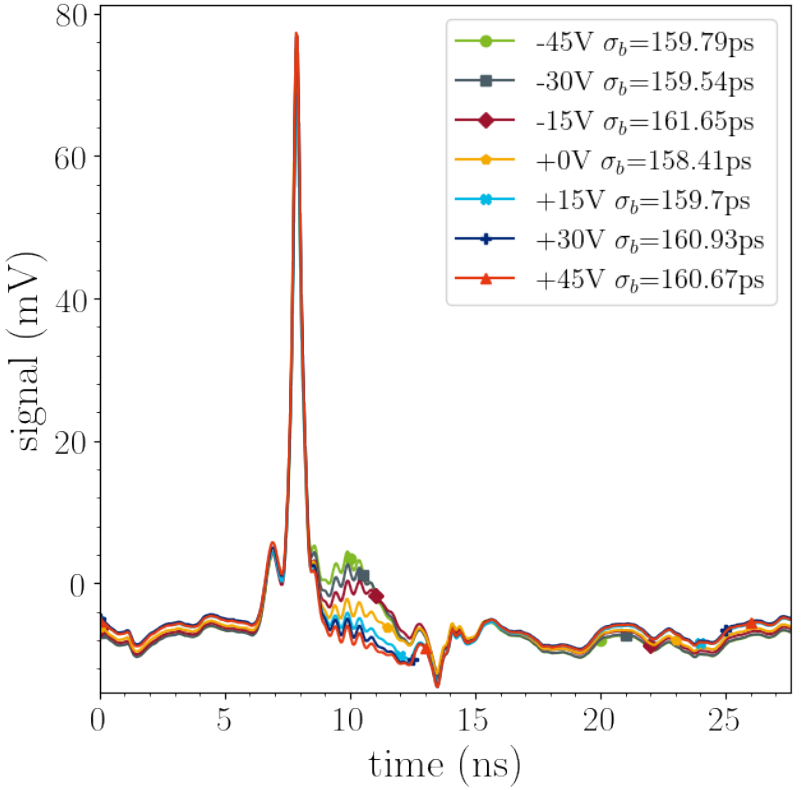
Temporal Resolution Analysis of the β-Dependency of Radially Coupled FFC Designs

- Different designs of radially coupled FFCs performed well at GSI
- Designed for heavy ions with velocities of $\beta < 20\%$
- Uses geometrical secondary electron suppression and bias to reduce impact of the secondary electrons on the signal





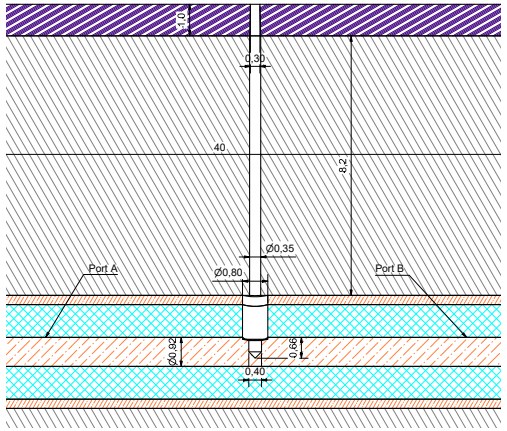
Tapered radially coupled FFC (TRCFFC) build at GSI workshop. Inner collector 3D-printed at Fraunhofer IWS Dresden.



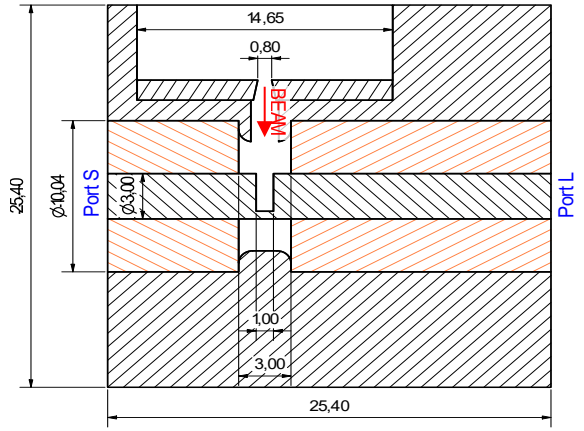
Ar^{10+} @ 11.4 MeV/u in the experimental cave X2 of GSI with different bias settings

Temporal Resolution Analysis of the β-Dependency of Radially Coupled FFC Designs

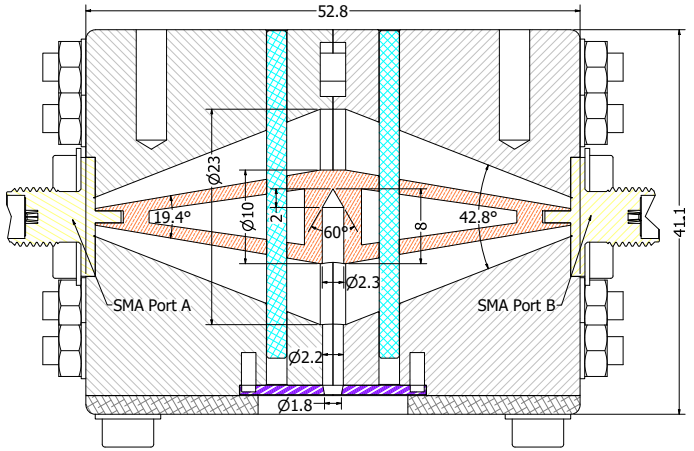
- How would these work in an electron facility based on CST simulations?
  - Bandwidth
  - Temporal resolution
- What are limitations? What would be necessary to make it work?



High Bandwidth Coaxial FFC (HBFFC)



Radially Coupled Coaxial FFC (RCFFC)



Tapered Radially Coupled Coaxial FFC (TRCFFC)

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