



June 13th, 2017



STUDY ON ALLUMINUM THIN WALLS





- Working pressure up to 400 Mpa
- Water jet velocity up to 800 m/s

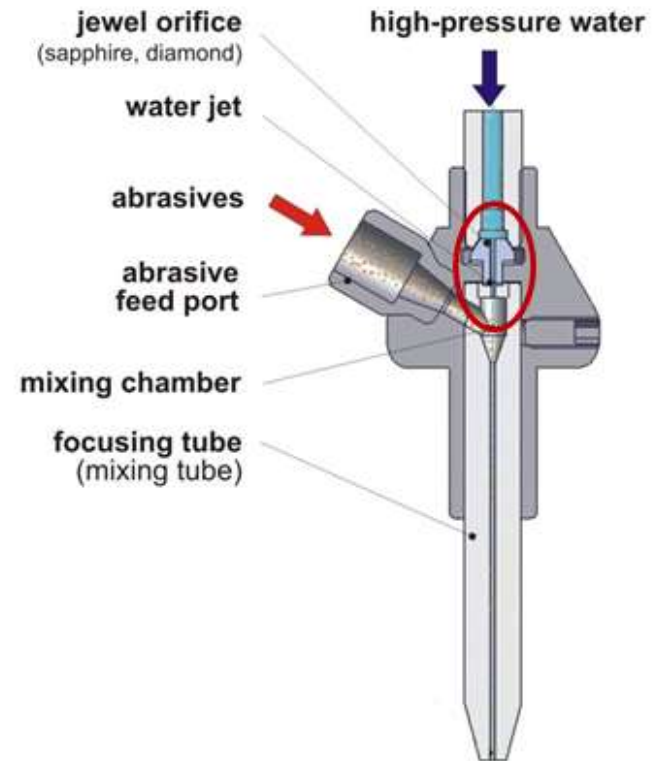
Conventional Abrasive Waterjet

- Primary orifice ID: 0.2 - 0.33 mm
- Focusing tube ID: 1.01 mm

Micro Abrasive Waterjet

- Primary orifice ID: down to 0.08 mm
- Focusing tube ID: down to 0.20 mm

Abrasive Water Jet





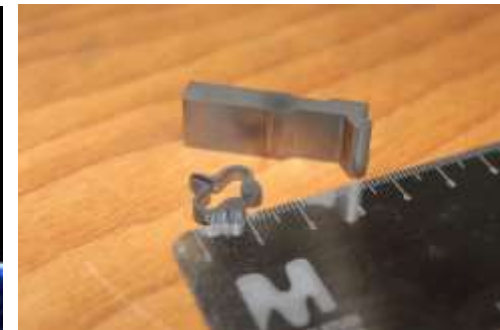
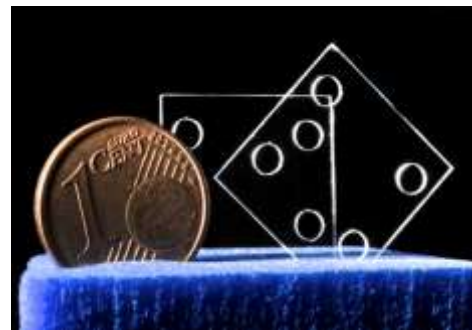
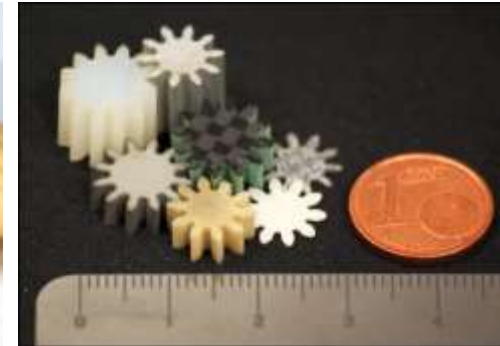
OUR MICRO ABRASIVE WATERJET SYSTEM





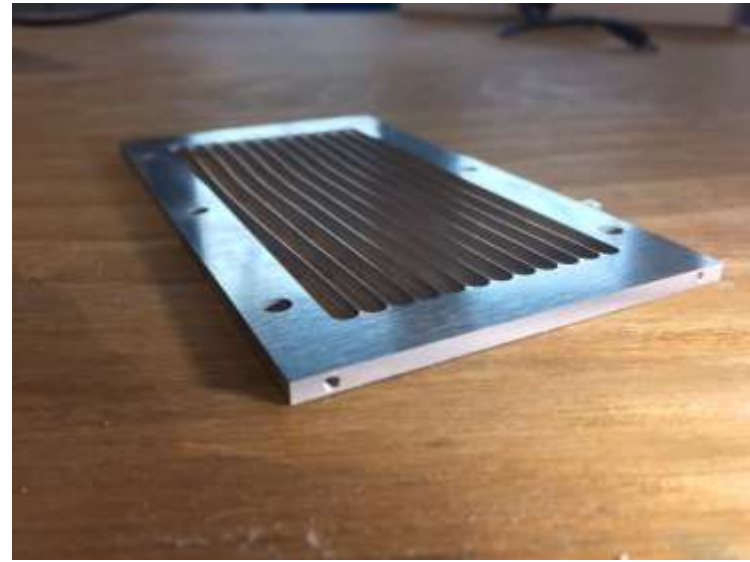
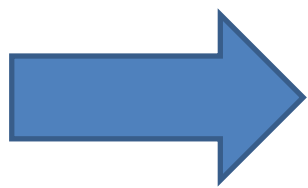
MAIN PROPERTIES OF MICRO ABRASIVE WATERJET

- high accuracy: **down to 10 μm**
- excellent **surface finish**
- small and complex features < **1mm**
- completely **material independent**
- **High thickness** machining
- **no HAZ** nor thermal distortions
- low mechanical residual stresses
- high **flexibility**
- easy **setup**
- **fast** delivery times





ALUMINUM THIN WALLS PRODUCTION



0.2 mm width thin walls in Aluminum 3 mm thickness.

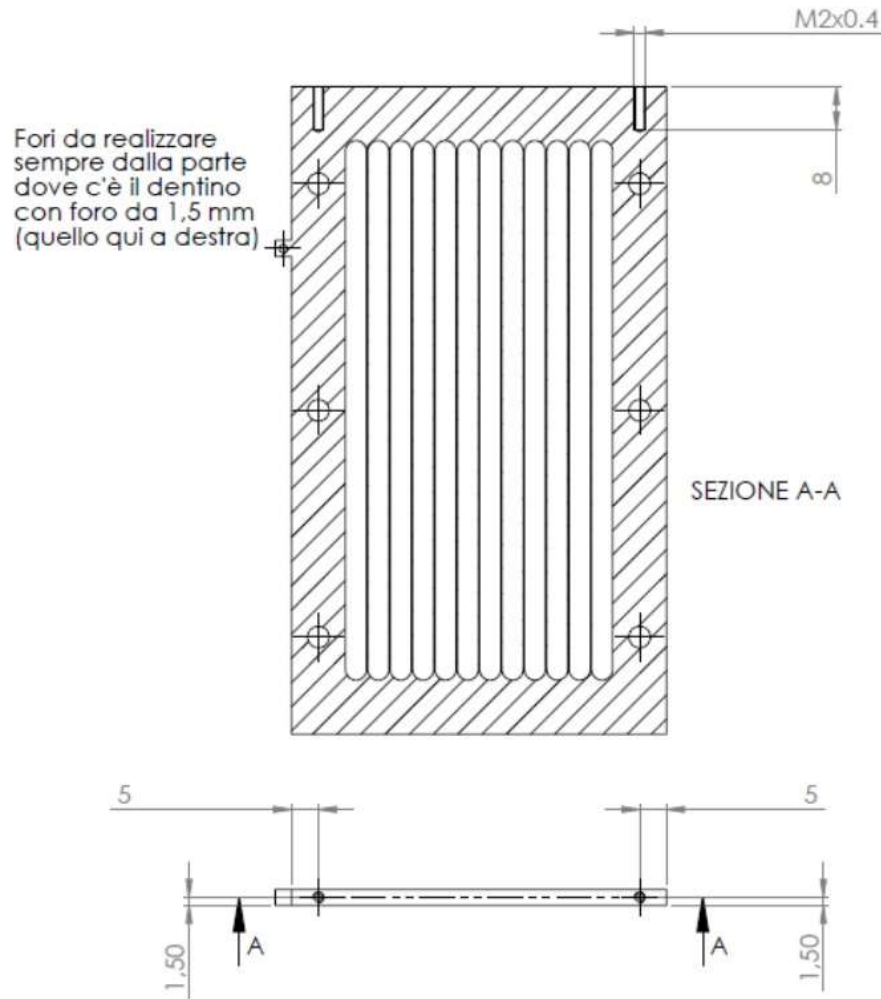
The very low forces of Micro Waterjet are enough to slightly warp the material

Realization of 2 very precise M2 holes in the 3 mm
Now it is possible to use 2 M2 screws to stretch the thin walls





M2 HOLES FOR STRETCHING SYSTEM

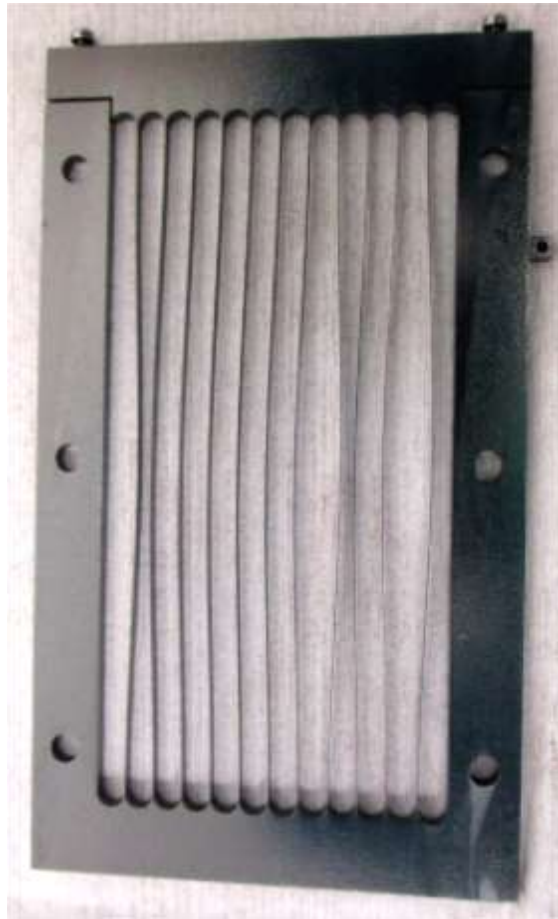


Technical drawing for the drilling execution

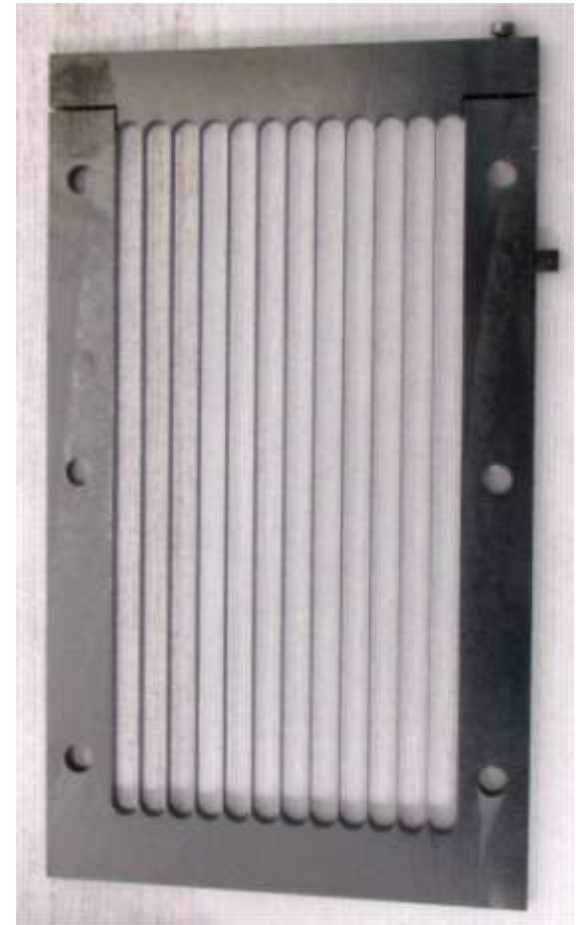




HEAT EFFECT ON ALUMINUM



Heat effect during the boron deposition



Importance of the stretching system for linearity





MASS PRODUCTION OF THIN WALLS SYSTEMS

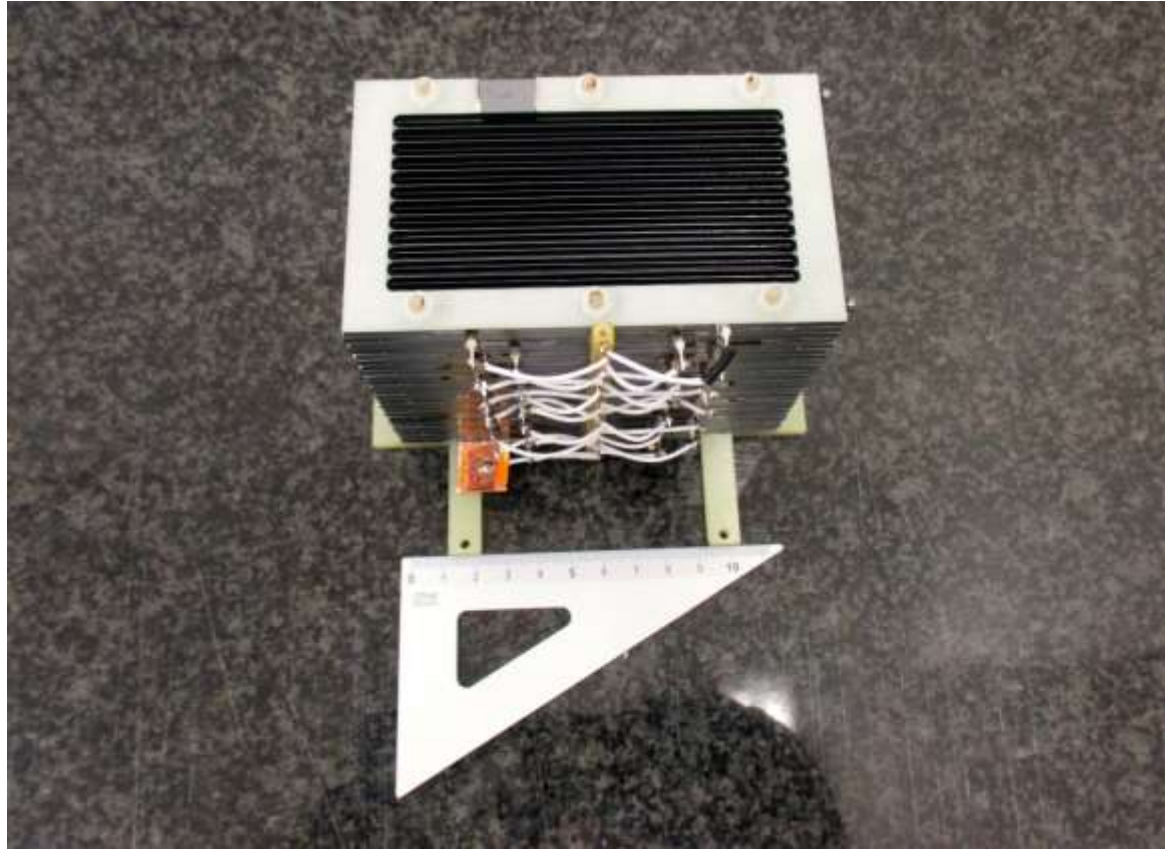


24 frames of thin walls for the mounting of a detector



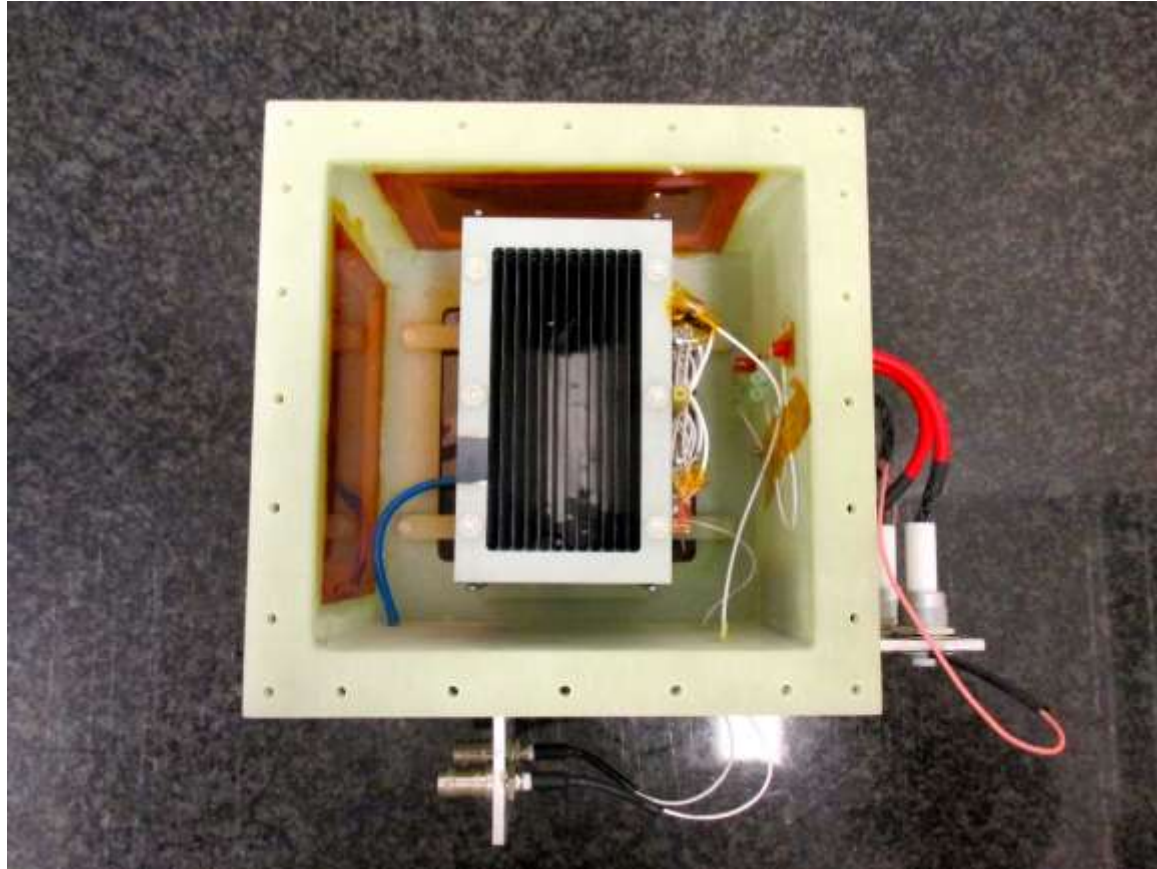


DETECTOR MOUNTING - 1



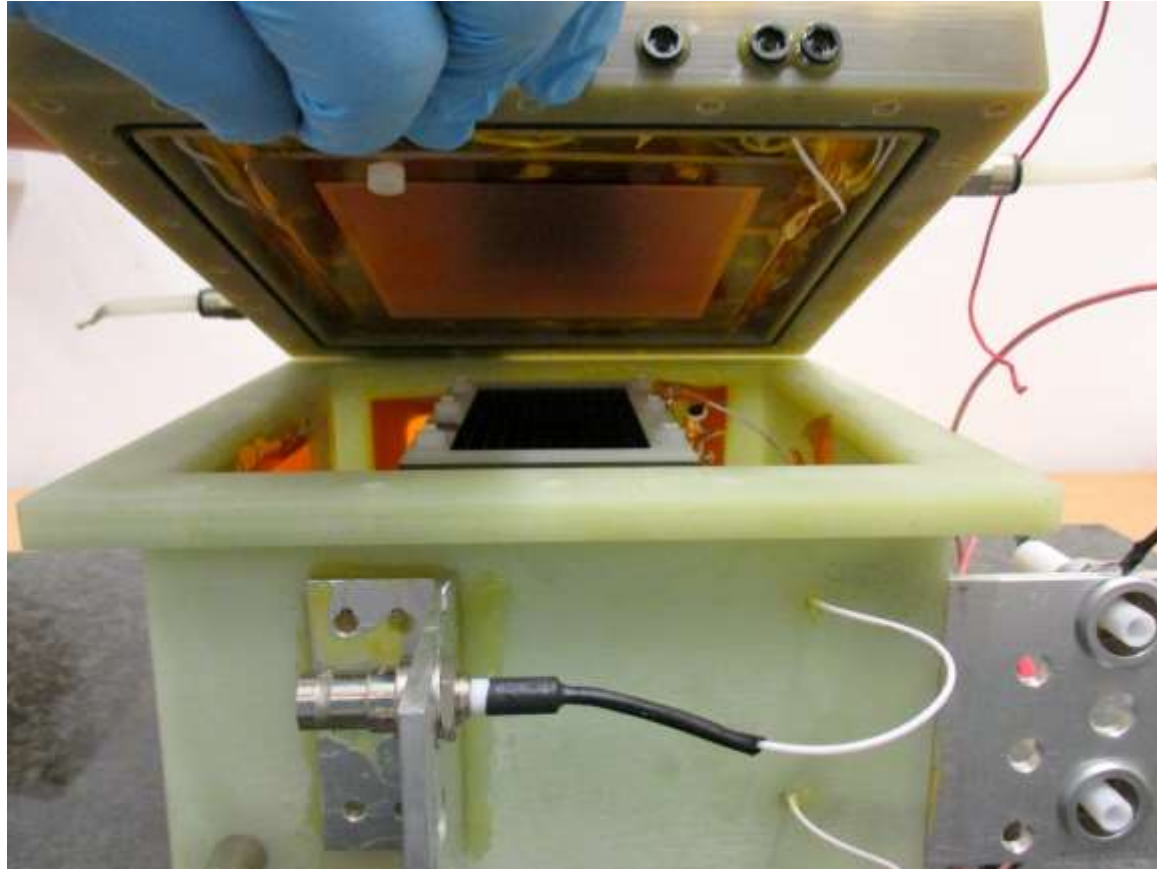


DETECTOR MOUNTING - 2



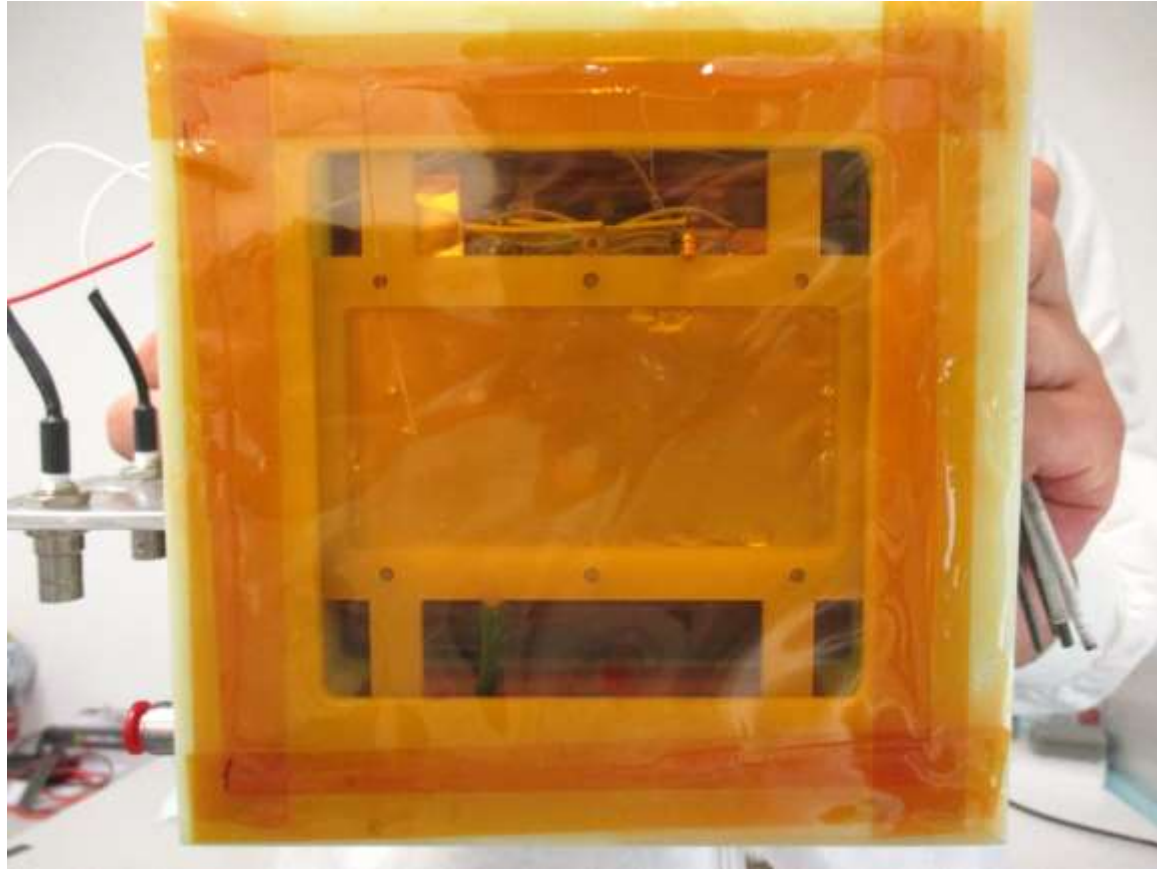


DETECTOR MOUNTING - 3





DETECTOR MOUNTING - 4





WORK IN PROGRESS - 1





WORK IN PROGRESS - 2

