



Status of CERN EP station

Content

- **Status of CERN EP plant;**
- **Simulation and validation of beta 0.5 cavity cathode shape;**

Status of CERN EP plant

- ready...

- Top and bottom interface;
- Cathode (**beta 0.5**);
- Electrical contacts;
- Power supply (30V, 1000 A);
- Cooling;
- Demineralised water;
- Nitrogen;
- Air and water treatment;
- **Safety file**;
- **Commissioning of the plant** (Run with demineralised water, cleaning and drying);

December 2011

January 2012



Status of CERN EP plant

- Assembled 700MHz beta 0.5 Niobium cavity

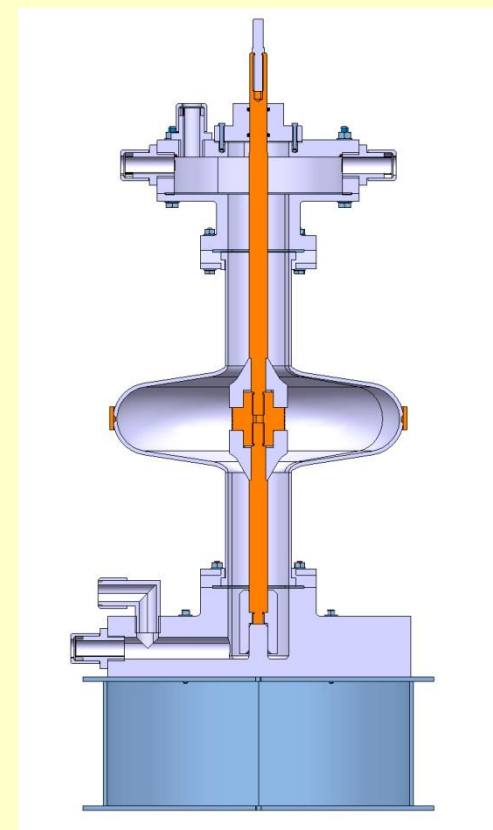
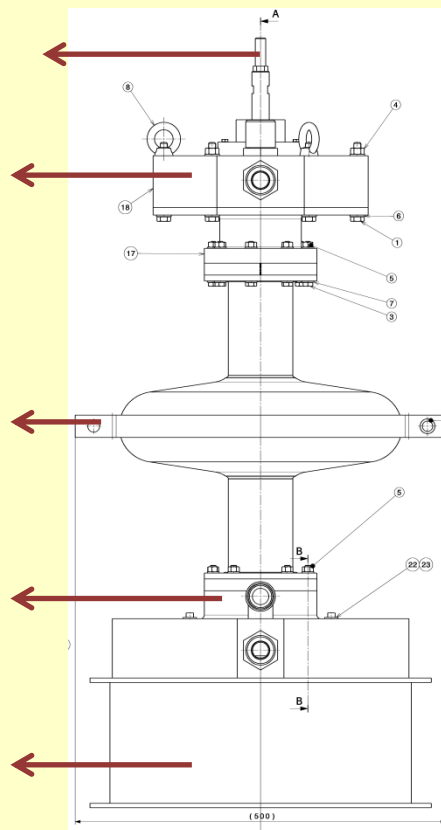
Cathode contact
(Copper)

Top interface
(PVDF)

Anode contact
(Copper)

Bottom interface
(PVDF)

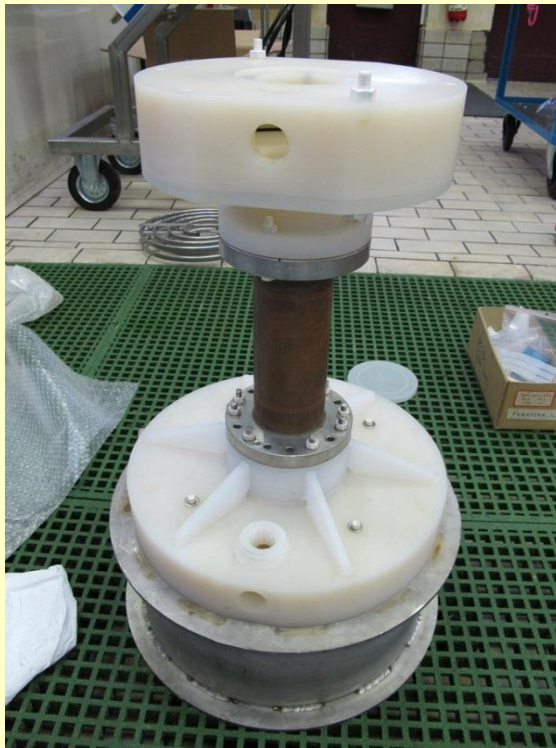
Support structure
(SS 304L)



Status of CERN EP plant

Photos

Top and bottom interface



EP plant

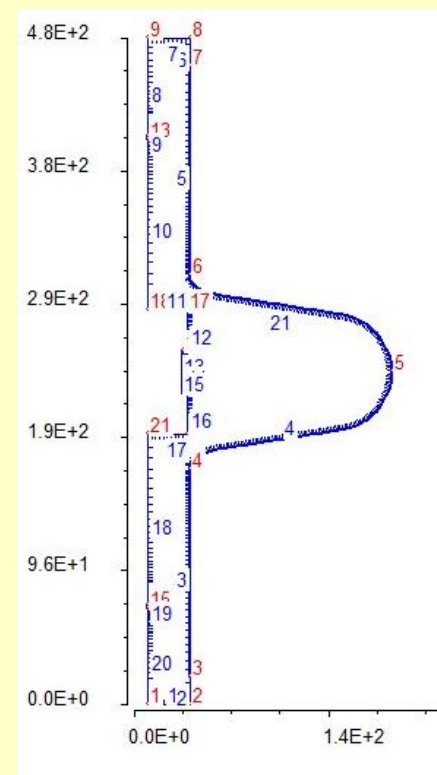
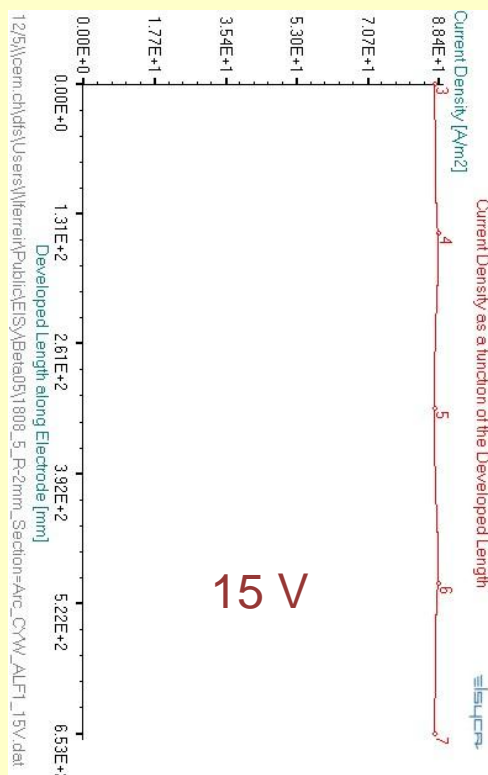
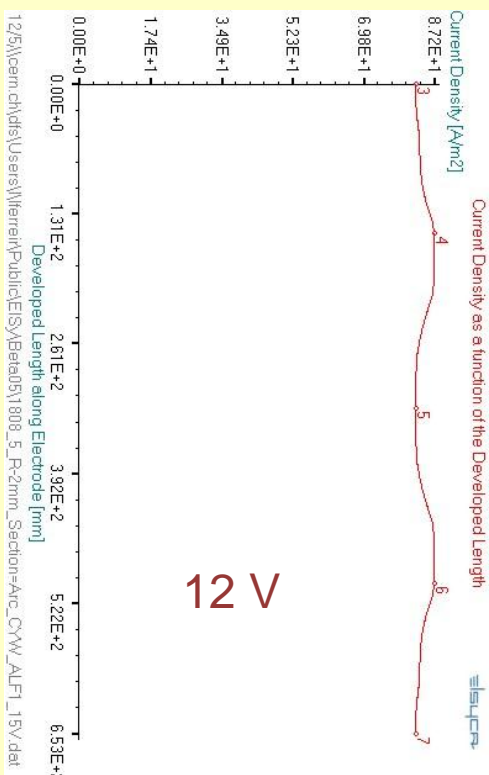


Simulation and validation of beta 0.5 cavity cathode shape;



Simulation and validation of beta 0.5 cavity cathode shape

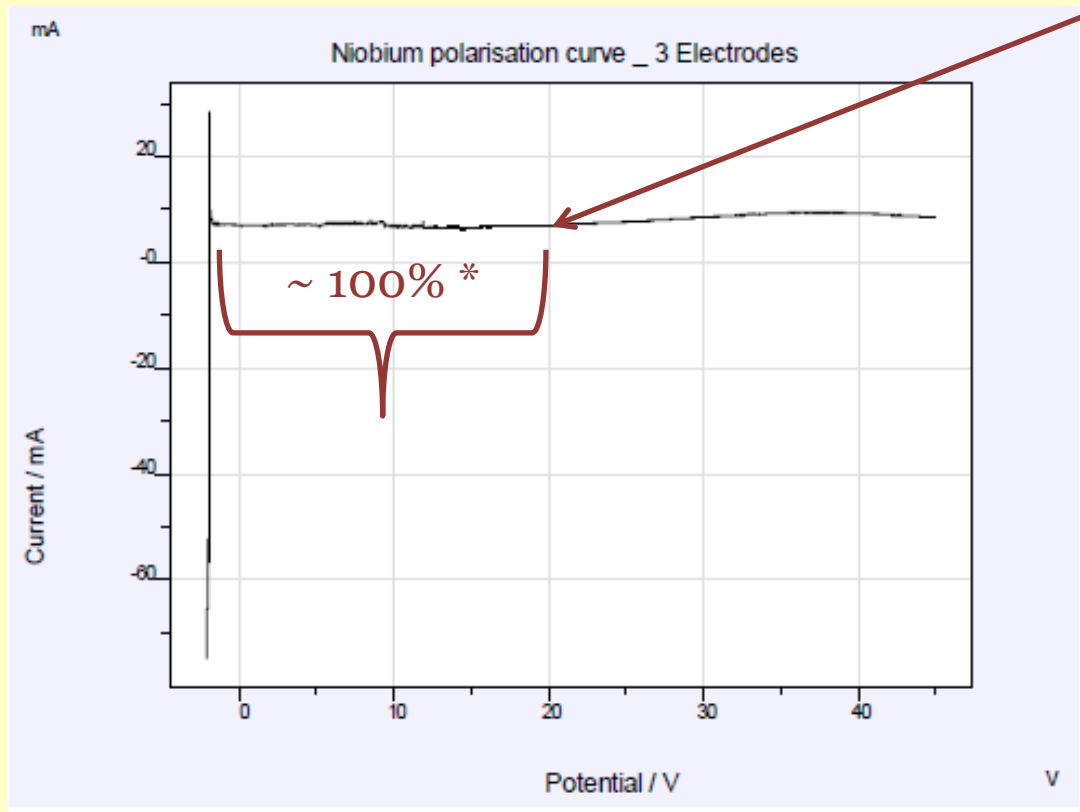
- Geometry and potential (15 V) for beta 0.5 were defined;





Simulation and validation of beta 0.5 cavity cathode shape

- Polarisation curve up to 45 V;
- Same current efficiency within the plateau until at least 20V;

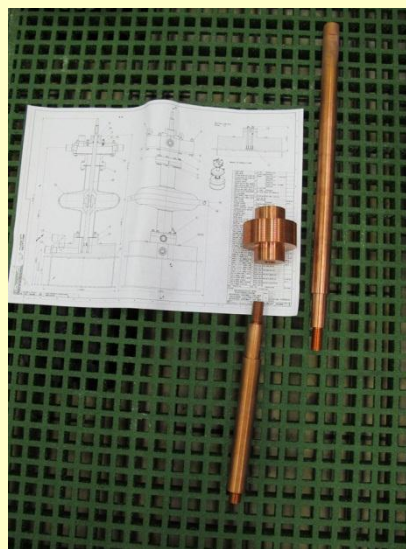


$H_2SO_4 + HF$: 9/1 v/v
 RDE – 100 rpm
 $t \sim 10\text{ }^\circ C$
 3 Electrodes

* Nb (V)

Simulation and validation of beta 0.5 cavity cathode shape

- Geometry and potential (15 V) for beta 0.5 were defined;



PVDF
Copper

