SINEMP meeting

7-8 April 2014

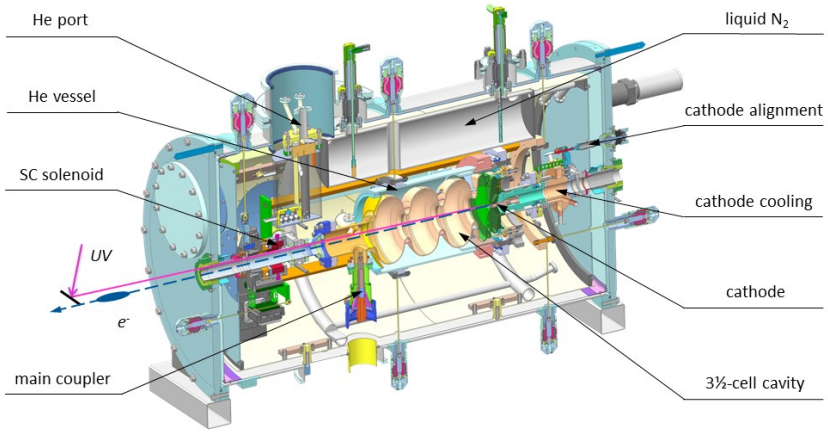
Rostock

Talks

- Bericht aus Rostock :
  - Eden Tafa Tulu. Multipacting simulations for Helmholtz-Zentrum Dresden-Rossendorf SRF gun.
- Bericht aus Siegen :
  - Michael Vogel. HOPE SINEMP.
- Bericht aus Dresden:
  - André Arnold. Rossendorf SRF gun II status.
- Bericht aus Berlin:
  - Axel Neumann. Status of the SRF gun for Berlin PRO.

Eden Tafa Tulu. Multipacting simulations for Helmholtz-Zentrum Dresden-Rossendorf SRF gun II.

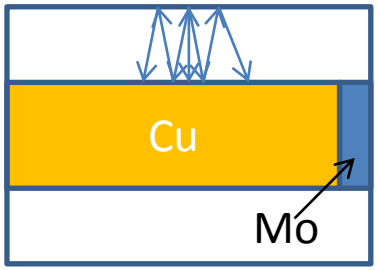
Rossendorf SRF gun II:



- 3.5 cells
- RF frequency
  - 1.3 GHz (CW)
- beam energy
  - 9.5 MeV
- drive laser
  - 262 nm
- photocathode (quantum efficiency)
  - Cs2Te (≥1%)

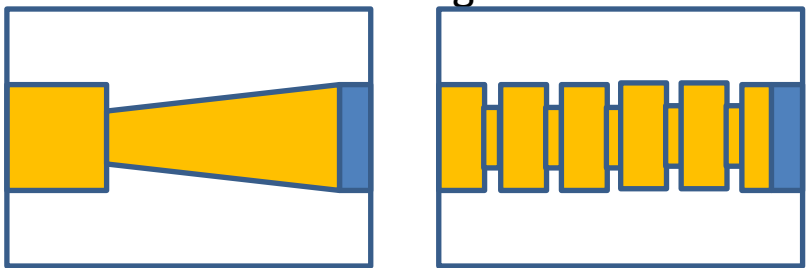
Multipacting simulations:

- Pretty strong multipacting discharge between Cu part of the cathode and cathode vicinity



Ways to avoid the MP discharge

- Bias voltage: help but not so much
- Cone shaped cathode plug: do not help
- Transverse recesses: help a lot, MP depends on the recess shape.
- Surface coating: simulations will be done when data about coating will be received



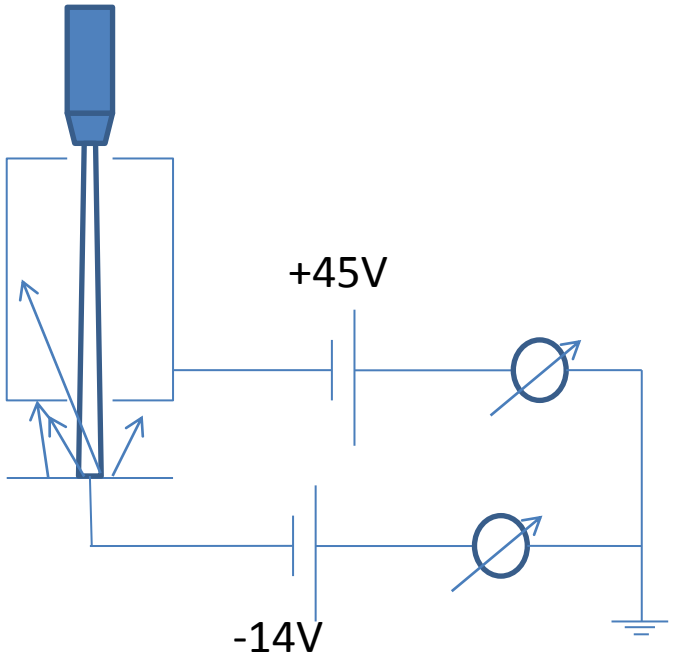
Michael Vogel. HOPE SINEMP.

TiN coating and coating tests in UNI SIEGEN

- The setup for the coating is under preparation, part are there but should be assembled and adjusted.
- Work will be done in collaborations with CERN

SEY tests

- After coating samples will be tested for SEY parameter.
- 0-3KeV gun



Axel Neumann. Status of the SRF gun for Berlin PRO.

The tests of BERLIN PRO prototype Gun (1.4 cell cavity)

- The cavity produced in JLab
- The dimensions differ a lot from the model (the gun length is smaller on few millimeters (!))
- Tuning was performed but all parameters are far from desirable
- Coupler kick is found. It is due to wrong geometry.
- Simulations show that there is MP discharge not only in cathode area but also in equator part of the cells.
- MP discharge was observed during power tests.
- Gun power tests are ongoing, different surface cleaning methods are applied.

André Arnold. Rossendorf SFR gun II status.

- Cavity producing, tuning and field profile measurements are done in Jlab.
- Cavity delivered to Rossendorf
- The cavity is assembled with cryomodule and solenoid in Rossendorf
- All magnetizable flanges and parts degaussed.
- Gun is ready for installation.