



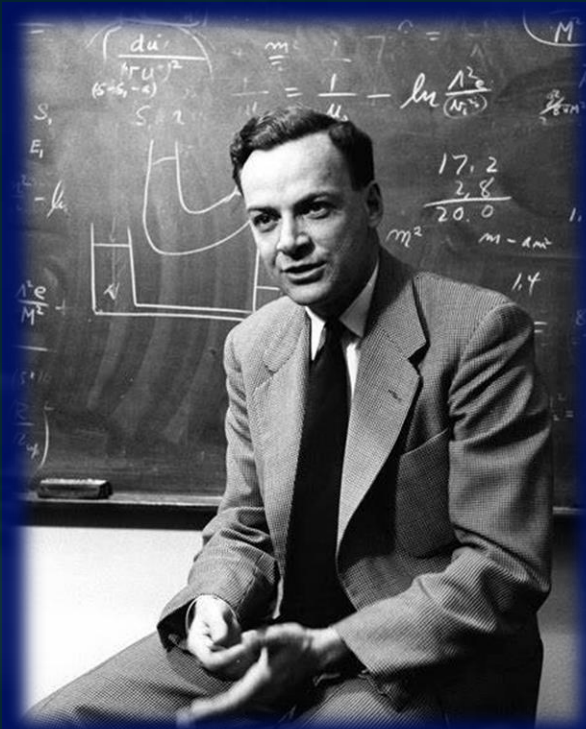
Abbas JHEIR
Lebanese University, Faculty of Sciences
(Abbas.ahmad.jheir@cern.ch)

GEM Technology in CMS Experiment @ 904 Lab / Preveessin, CERN

Supervisors:
Prof. Ashok KUMAR
Ghaneemah Ali Al Asfour

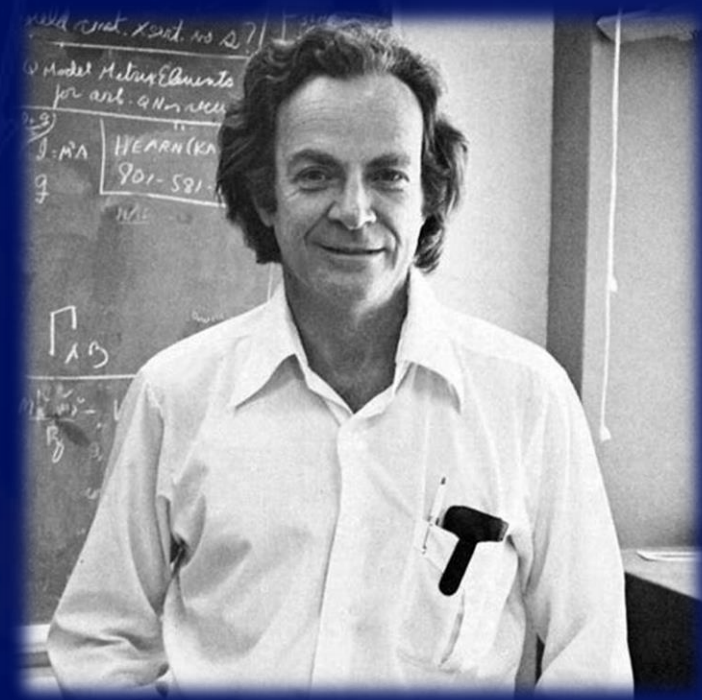


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What I cannot create, I cannot understand

Richard Feynman





CMS Experiment





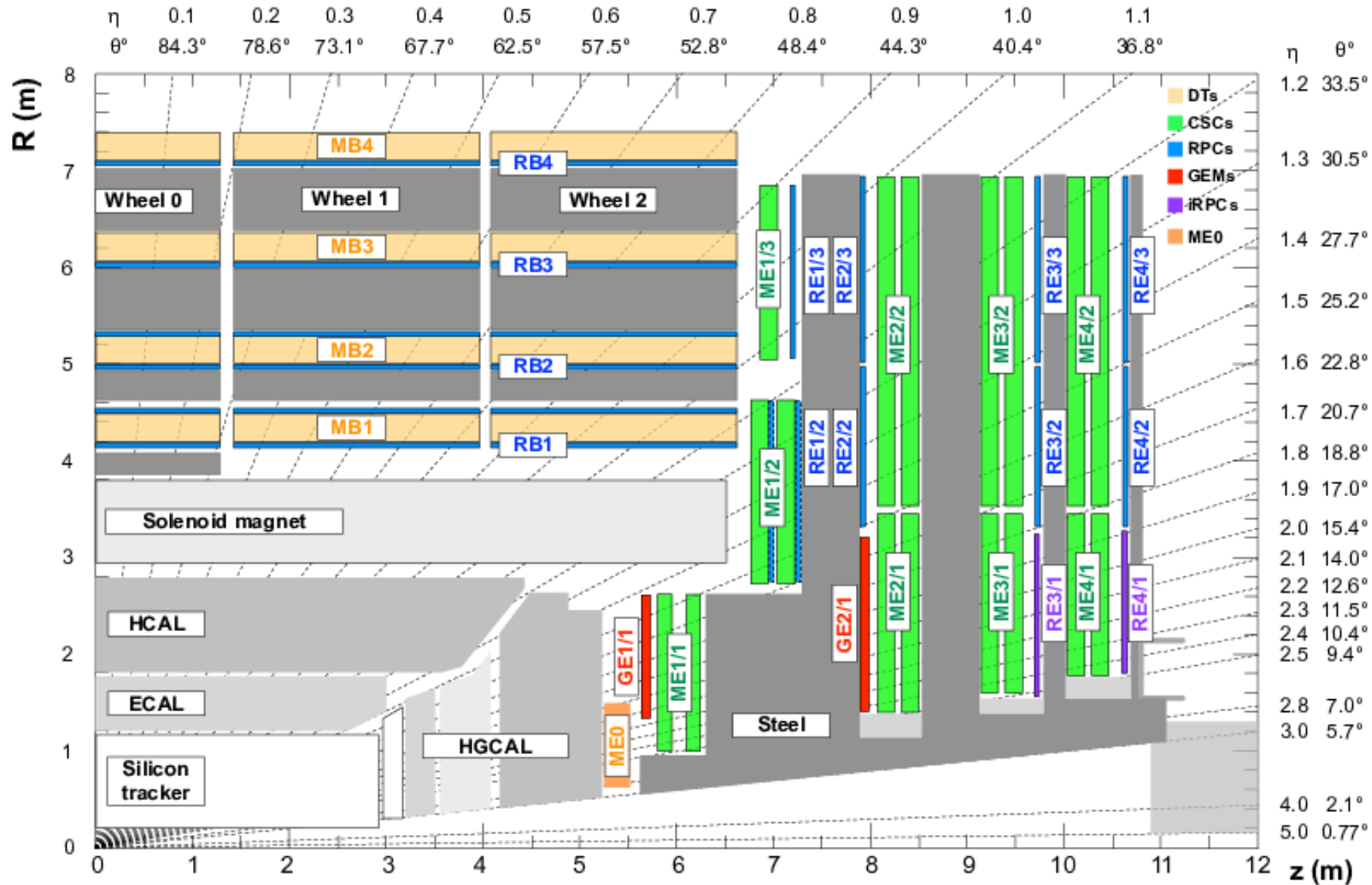
GEM Technology in CMS Experiment, CERN

Abbas Ahmad JHEIR

Abbas.ahmad.jheir@cern.ch



LEBANESE UNIVERSITY



Abbas JHEIR,

jheirabbas@gmail.com

Tel: +961 81 726 946,

Jheirabbas7@gmail.com



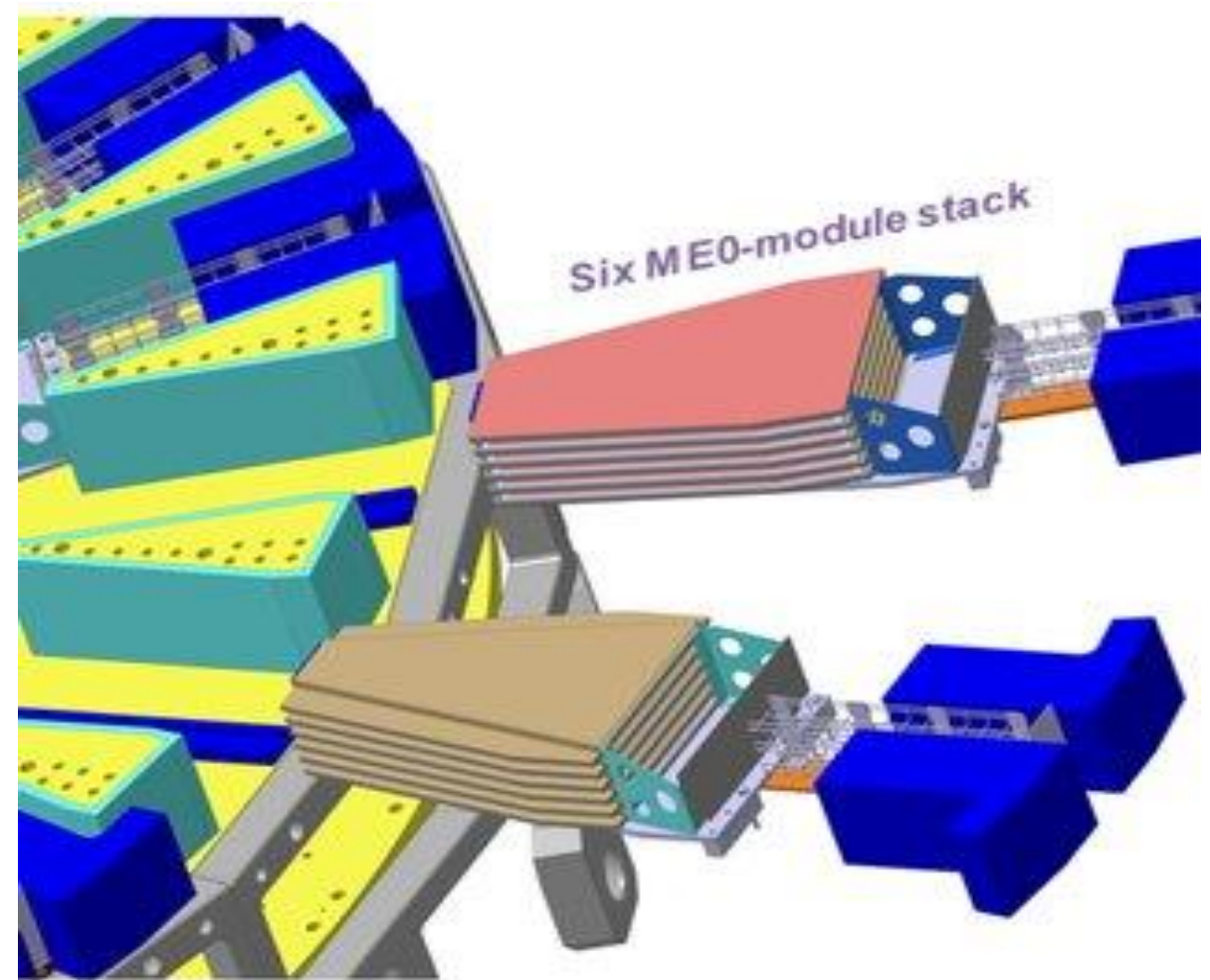
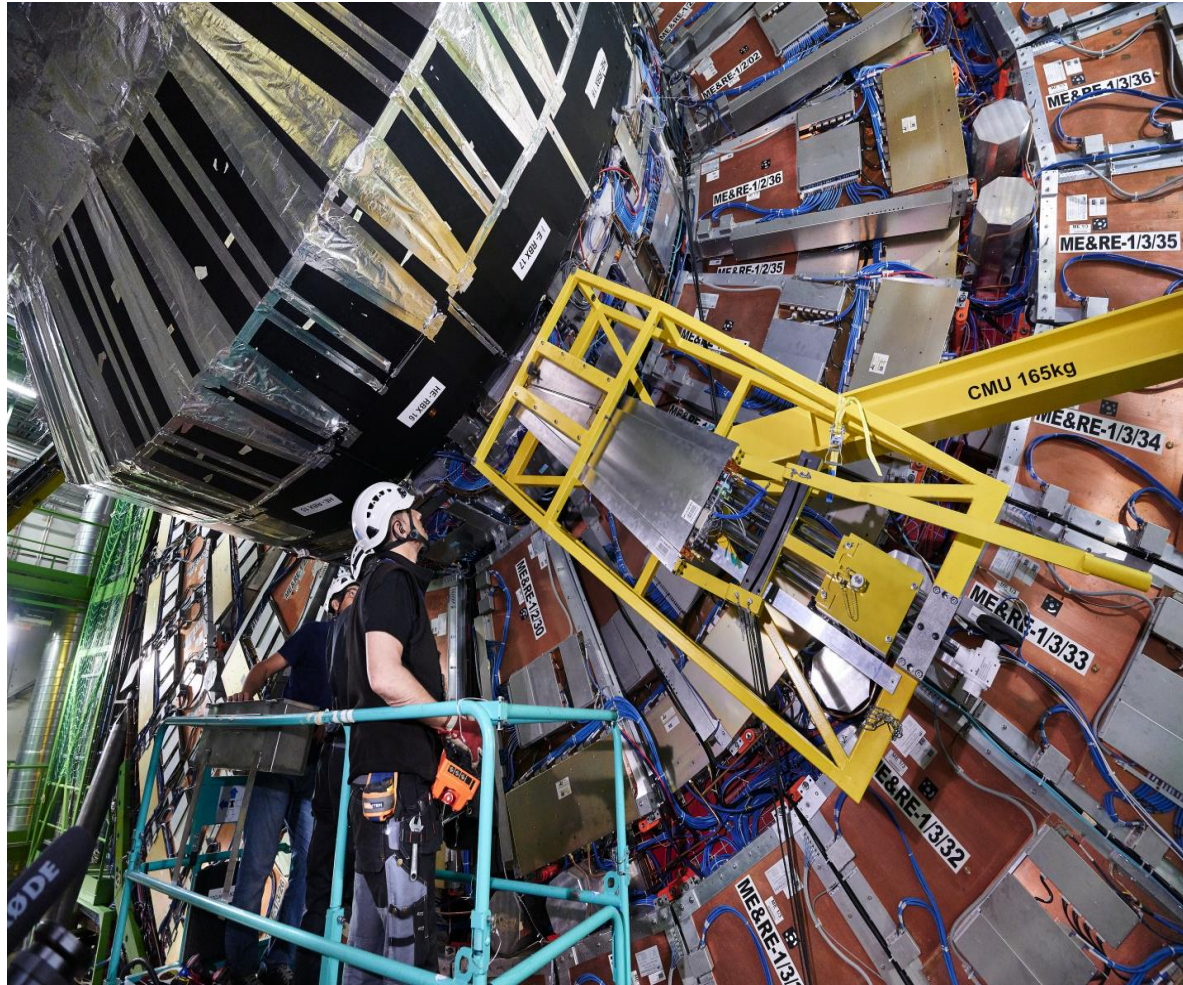


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Abbas Ahmad JHEIR
Abbas.ahmad.jheir@cern.ch



LEBANESE
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Abbas JHEIR,

jheirabbas@gmail.com

Tel: +961 81 726 946,

Jheirabbas7@gmail.com



GEM Technology

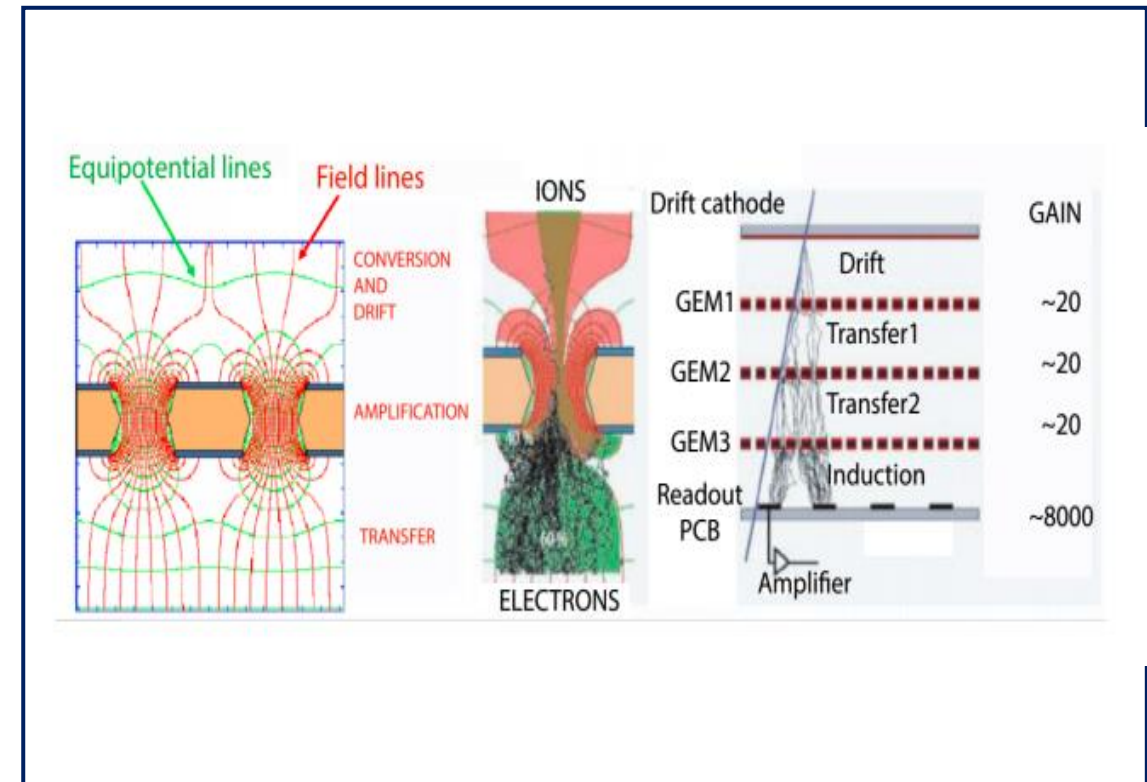
CERN Accelerating science Sign in Directory

EP Newsletter of the EP department

NEWSLETTER NEWS ARCHIVE SEMINARS & COLLOQUIA NEW ARRIVALS

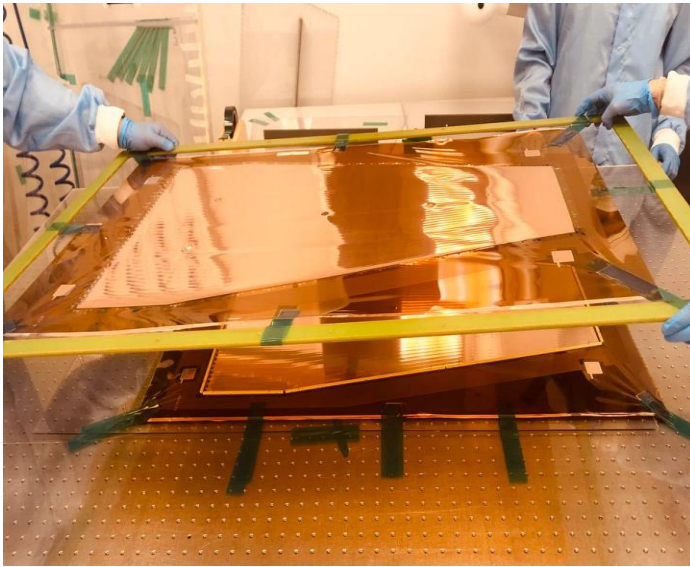
CMS GEMs are changing gear

Archana Sharma (CERN) 9th Dec 2020

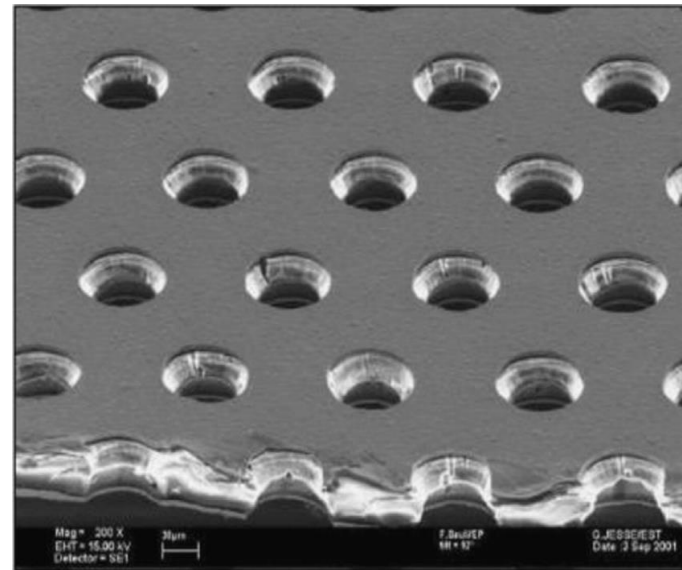


GEM Technology – Physical Explanation

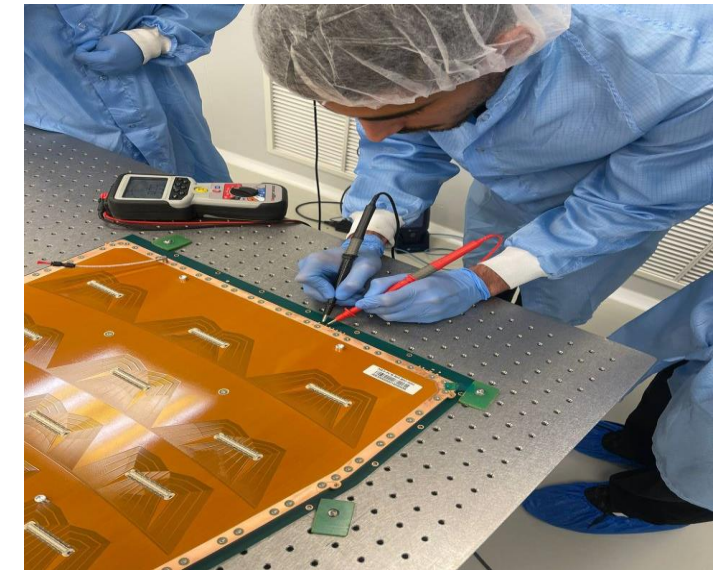
GEM Technology



GEM Foil during assembly



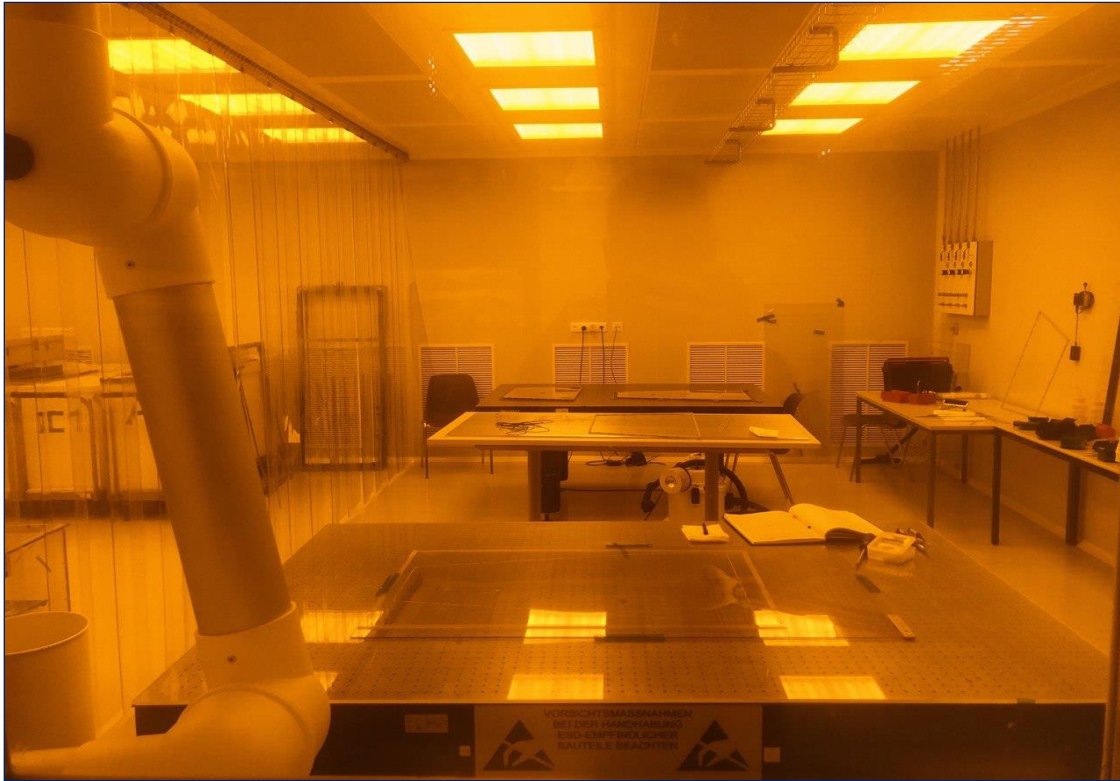
GEM Foil Under Microscope



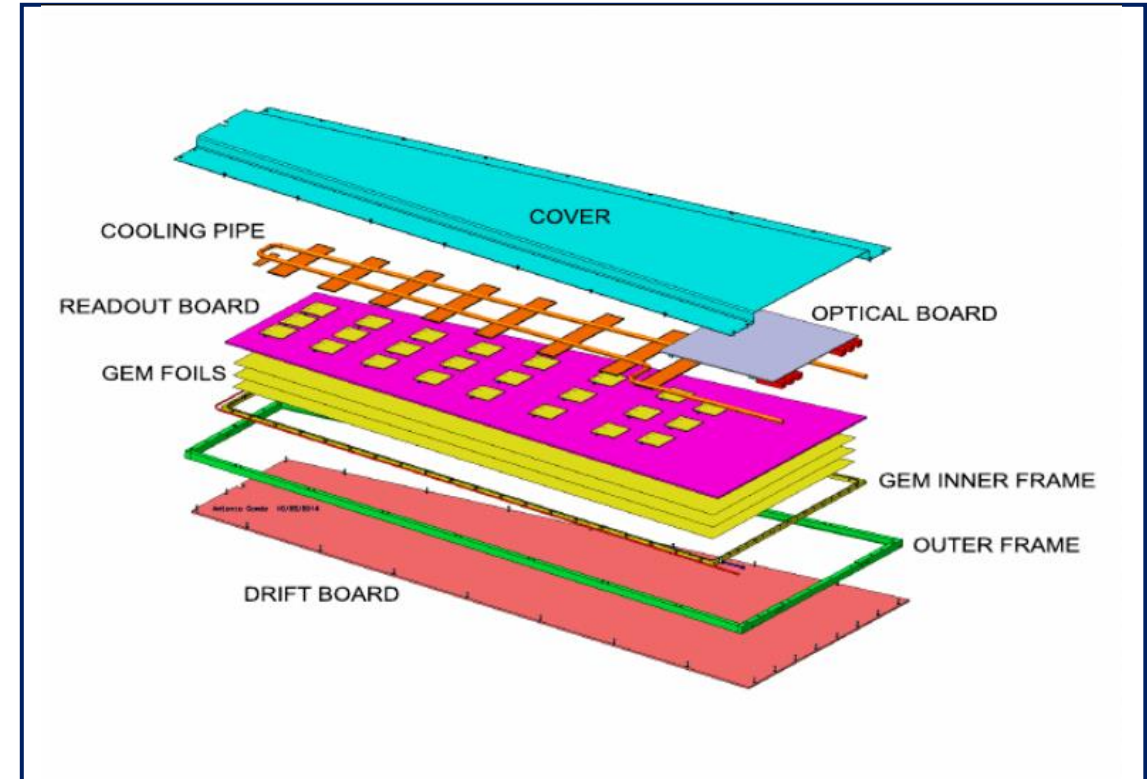
Measuring impedance

- Deformation In the foil itself
- Any sharp edge
- Dust in the hole.

GEM Technology – Assembly

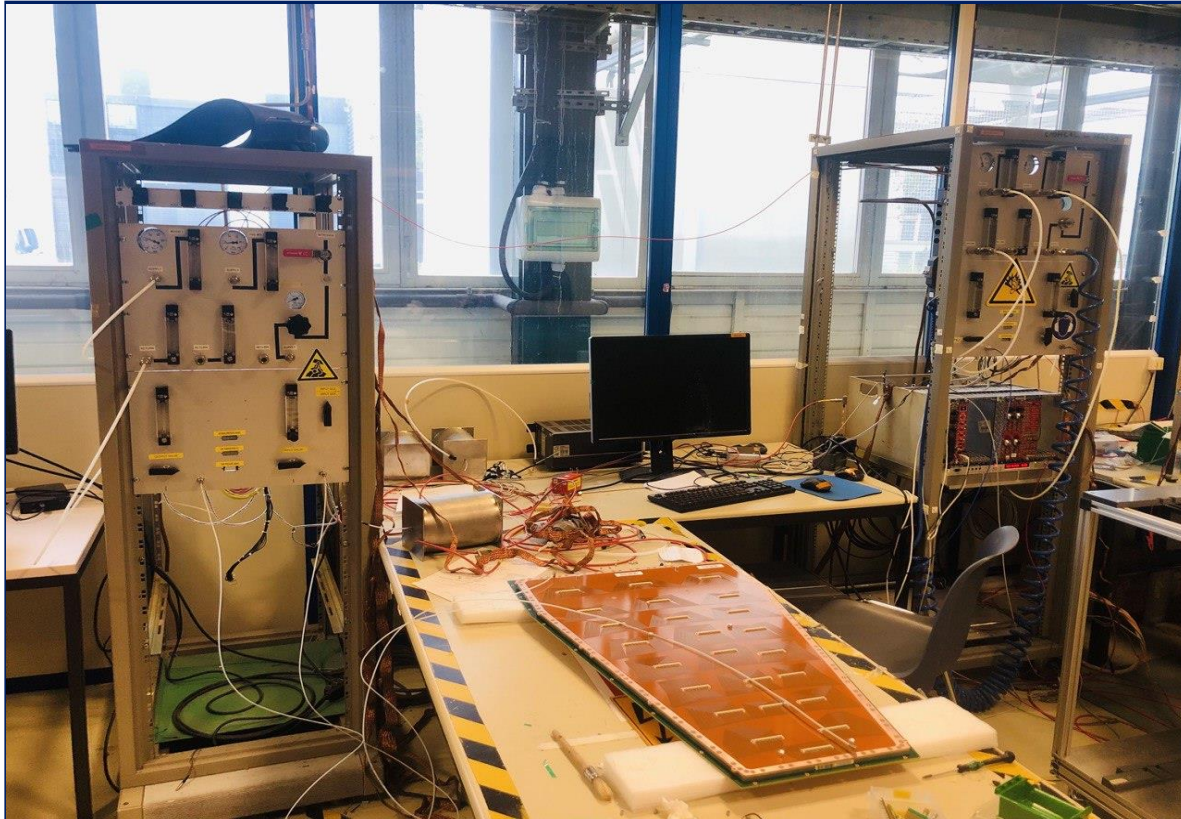


Clean Room



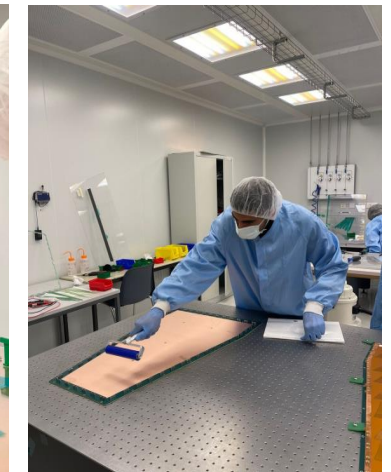
GEM Assembly

GEM Technology – Quality Control Tests



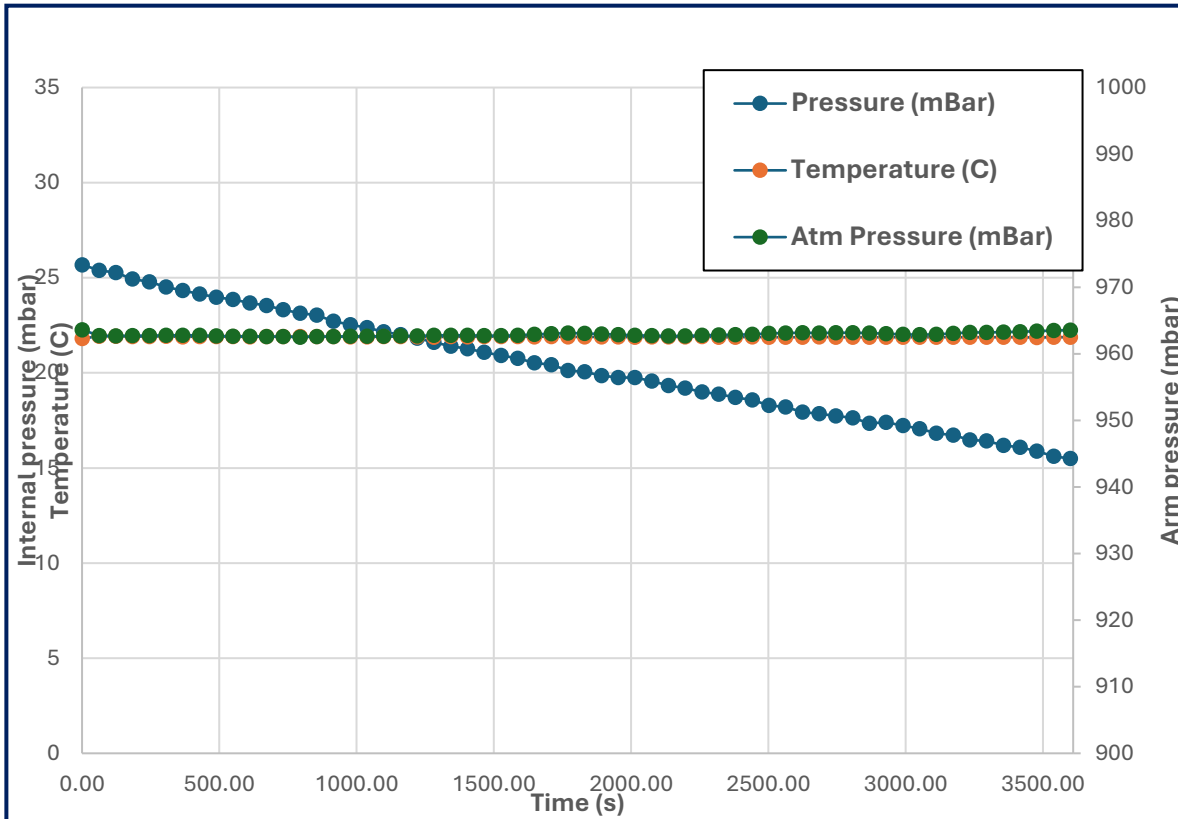
QC3 & QC4 Area / Preveessin B904

- QC1: Inspecting the material.
- QC2: HV Test (To check current leak)
- QC3: Gas Leakage test.
- QC4: Intrinsic noise & Voltage/Current Linearity test.
- QC5: Gain and Uniformity test.
- QC6: HV stability test for all chambers.
- QC7: Electronics connectivity test.
- QC8: Cosmic Test of the chambers

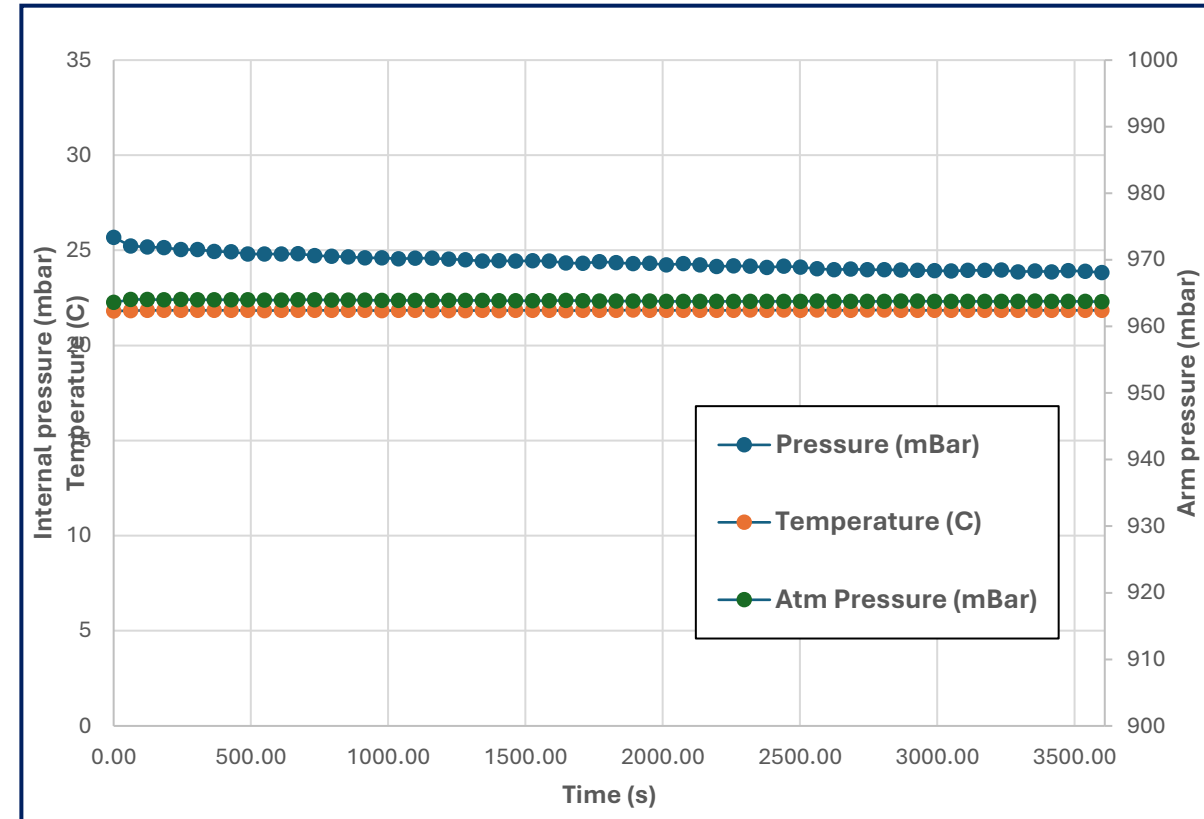




GEM Technology – Data analysis QC3



QC3 – test Failed

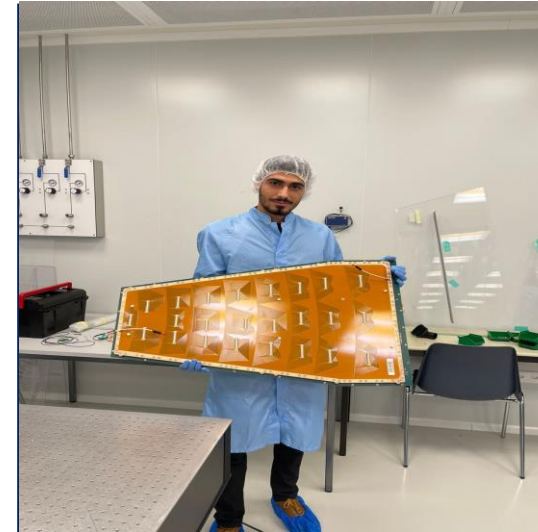


QC3 – test Passed





My Contribution to CMS phase-II upgrade with GEM detector



I have a great fun being here at CERN, the European organization for nuclear research. And it's been fascinating to contribute and being part of the summer program this year. And looking forward to coming back here in the near future.

