

Resistive Bulk prototyping at Cirea

15 June 2012 @ CERN

Michel Billant

- Status of bulk production

- **Coverlay Lamination**
- **Development**
- **Curing**
- **Aspect**
- **Gap PCB & Mesh**



Last delivery @ CEA in May 2012
Tested under 740V → ok

In process for CERN :

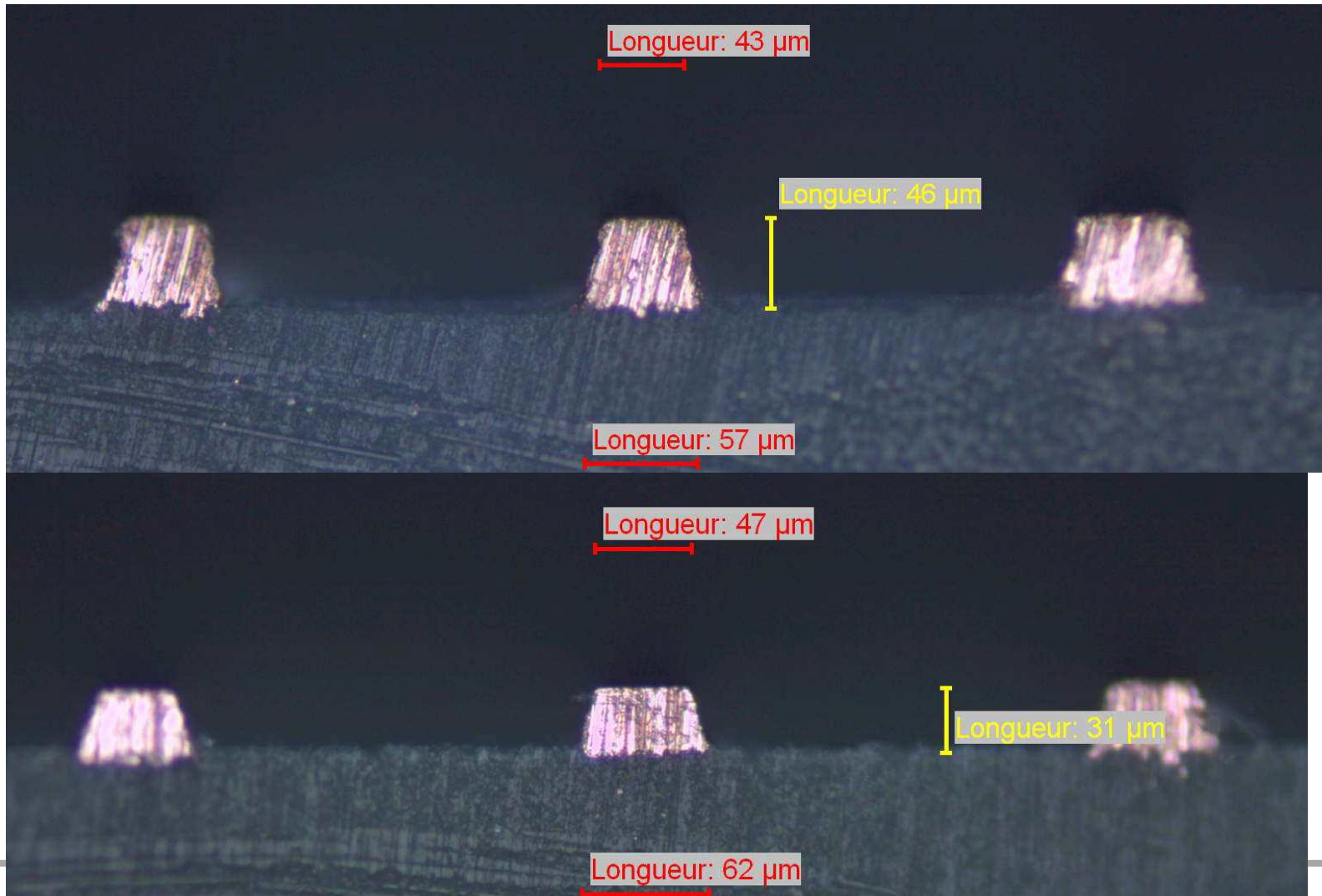
- **BXY with resistive layer**
 - Training done by Rui end of March 2012
 - Production of 5 units 100 x 100 delivery in June
 - Production of 5 units 600 x 400 delivery in September
 - Production of 5 units 600 x 1500 delivery beginning of 2013

Resistive process :

- Etching the grooves on the external Pcb layer
- Carbon printing
- Surface leveling
- Etching the copper
- Measurement

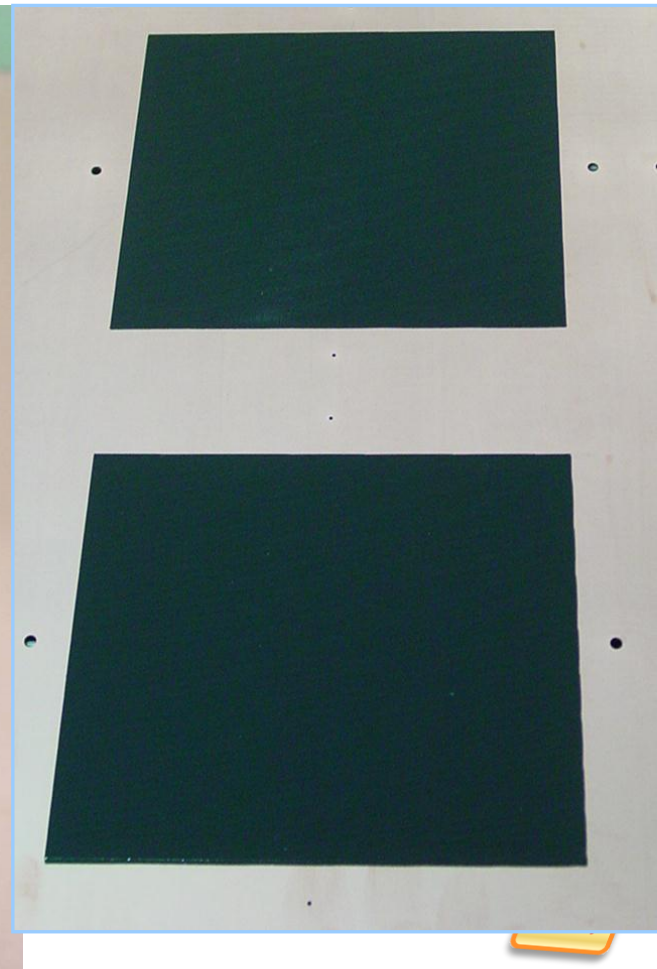
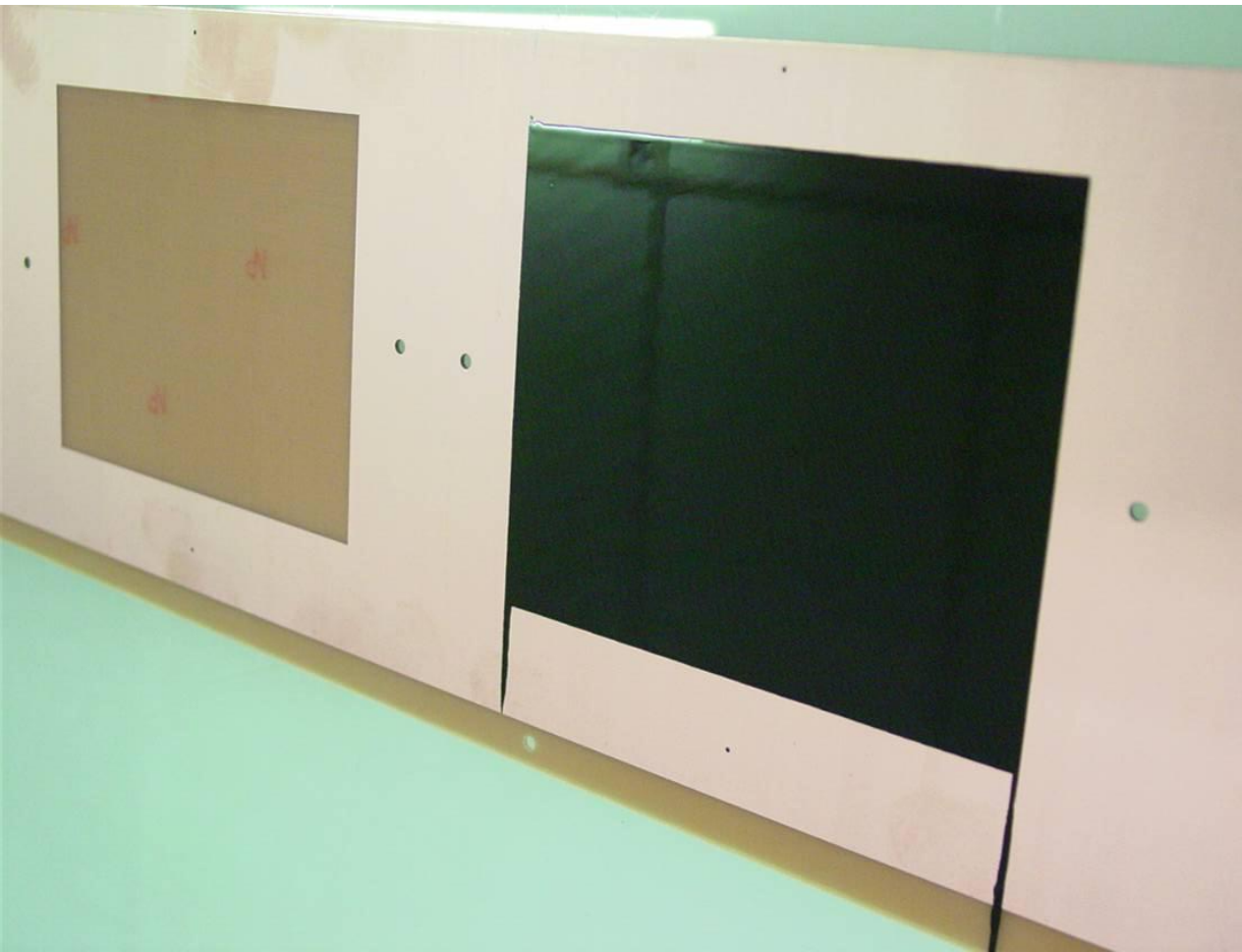
Grooves Etching

- Wall profile, artwork width adjustment

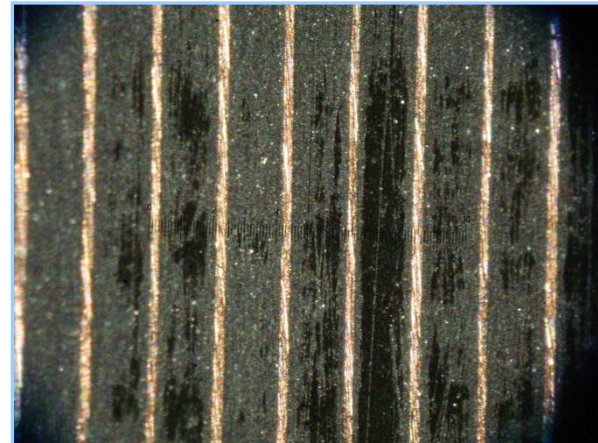


- Grooves

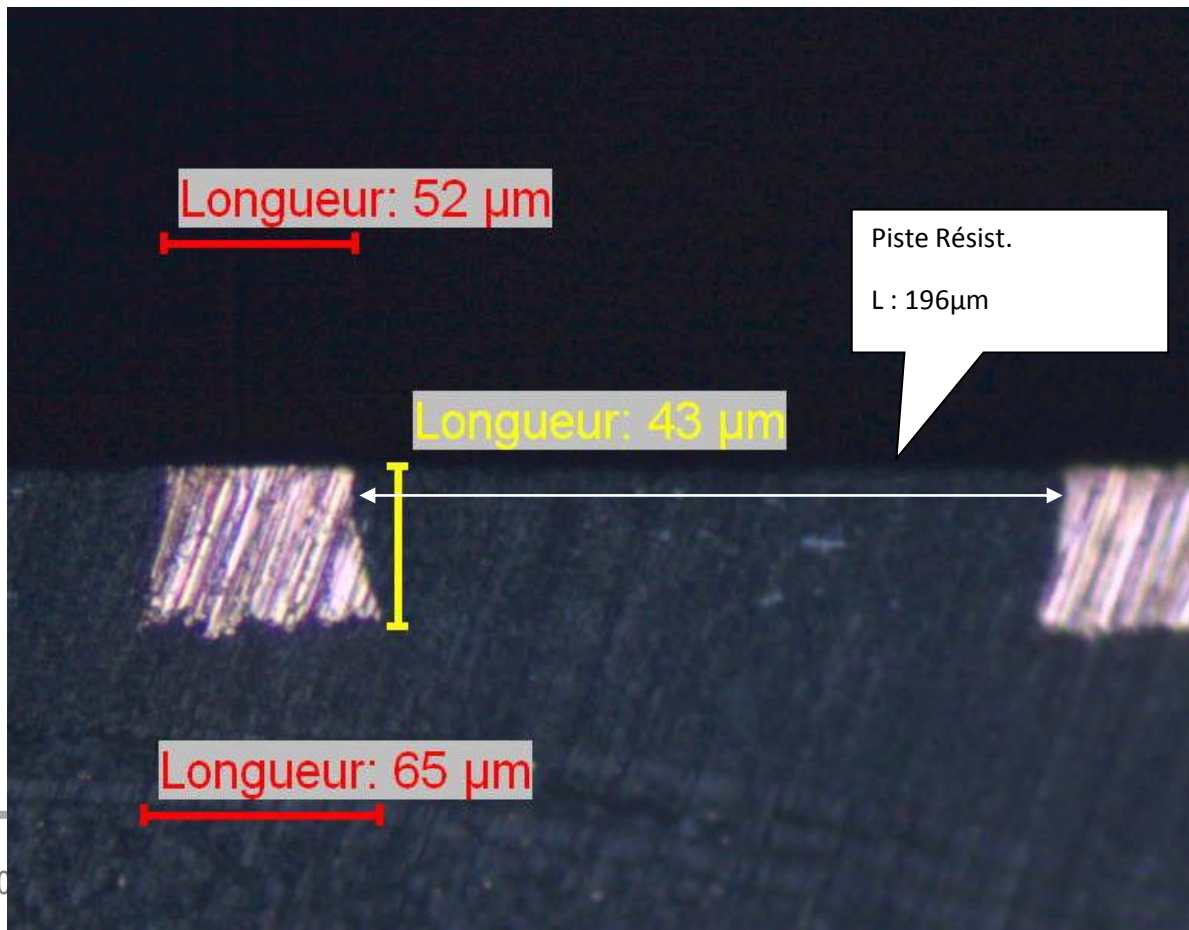
Printed



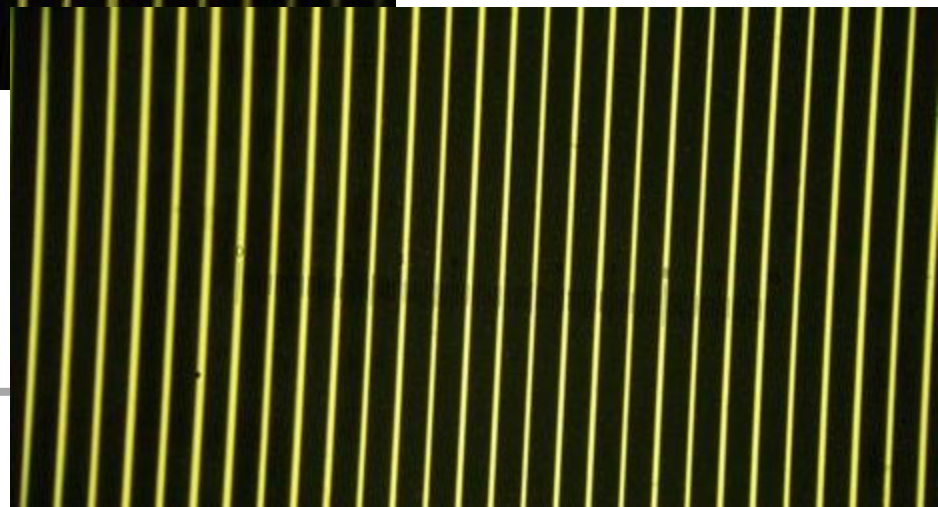
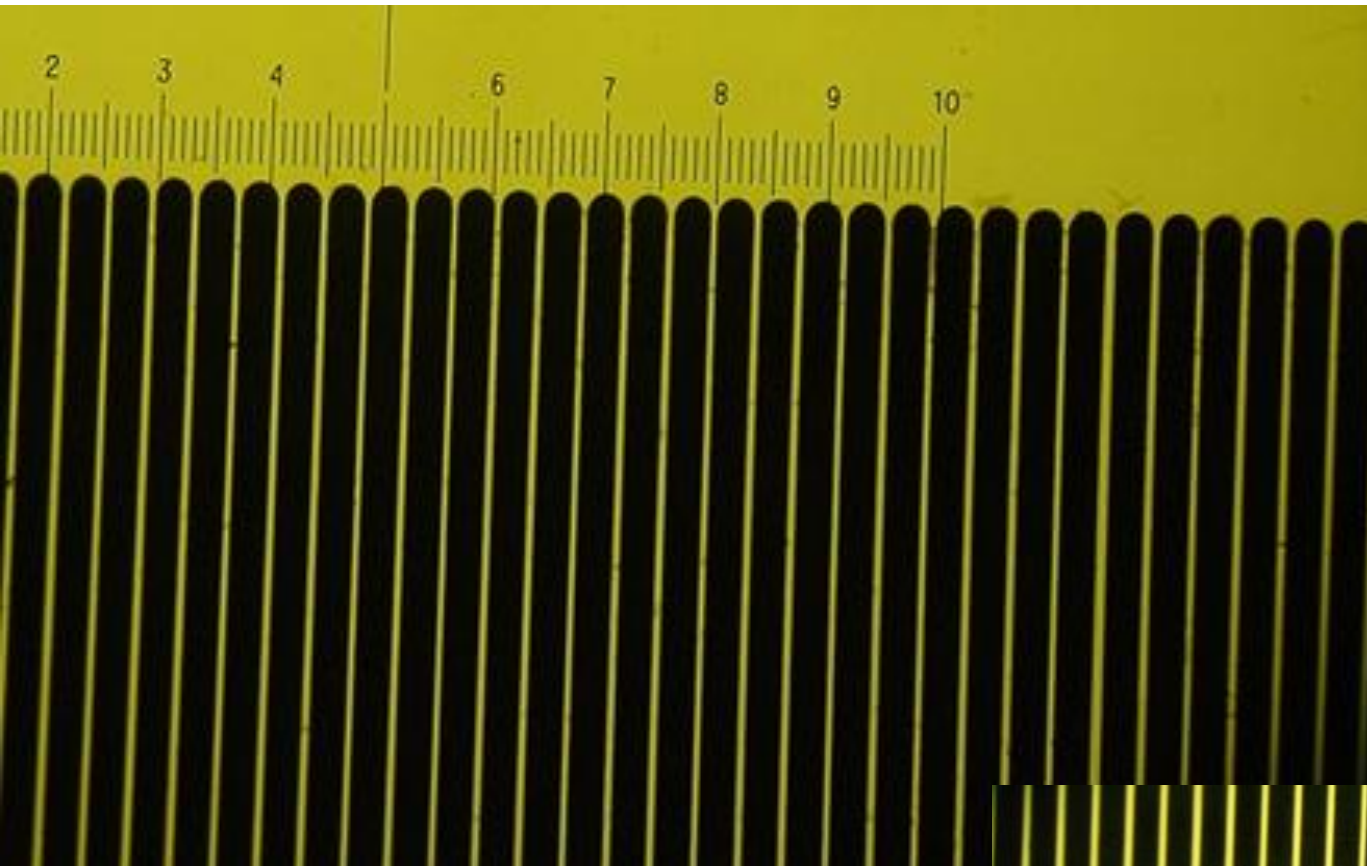
- To ensure to have the right and homogeneous thickness



- Remove the copper between Carbon lines



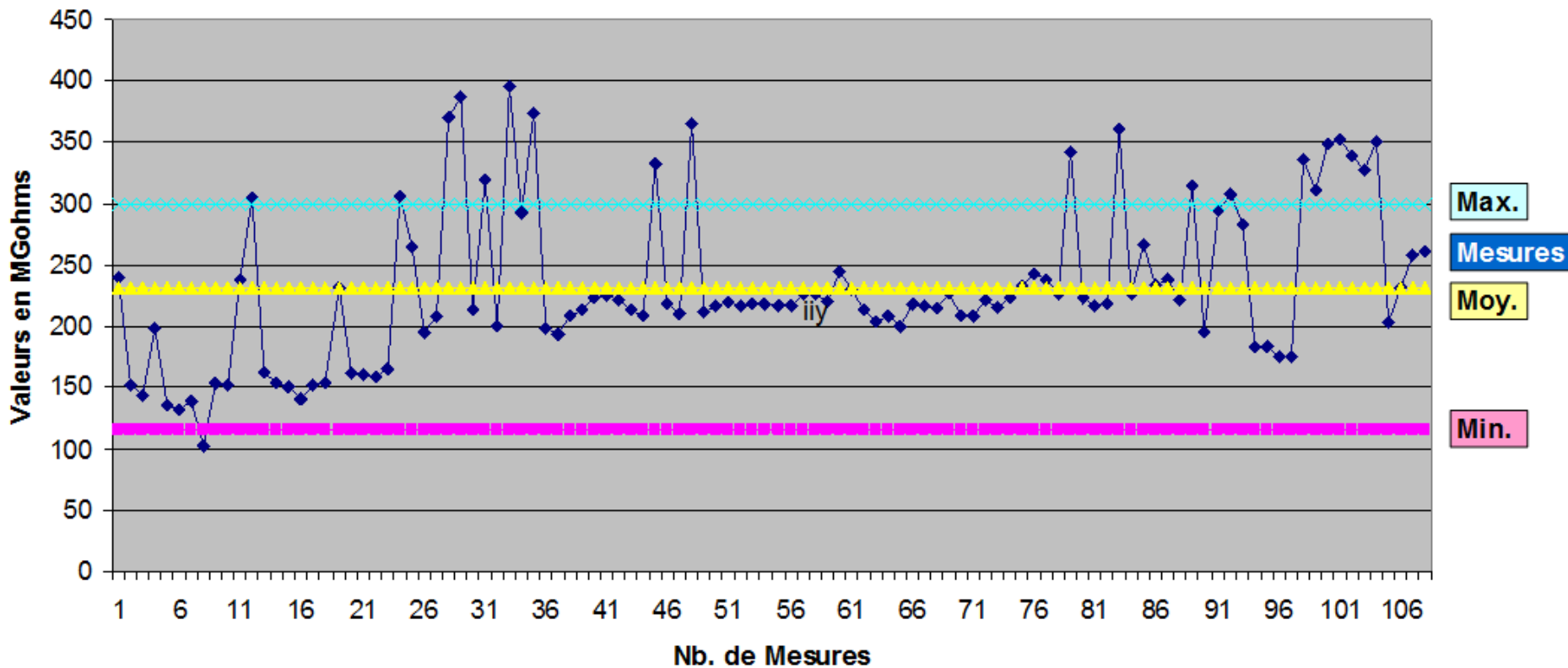
Inspection



Resistance Measurement



Results

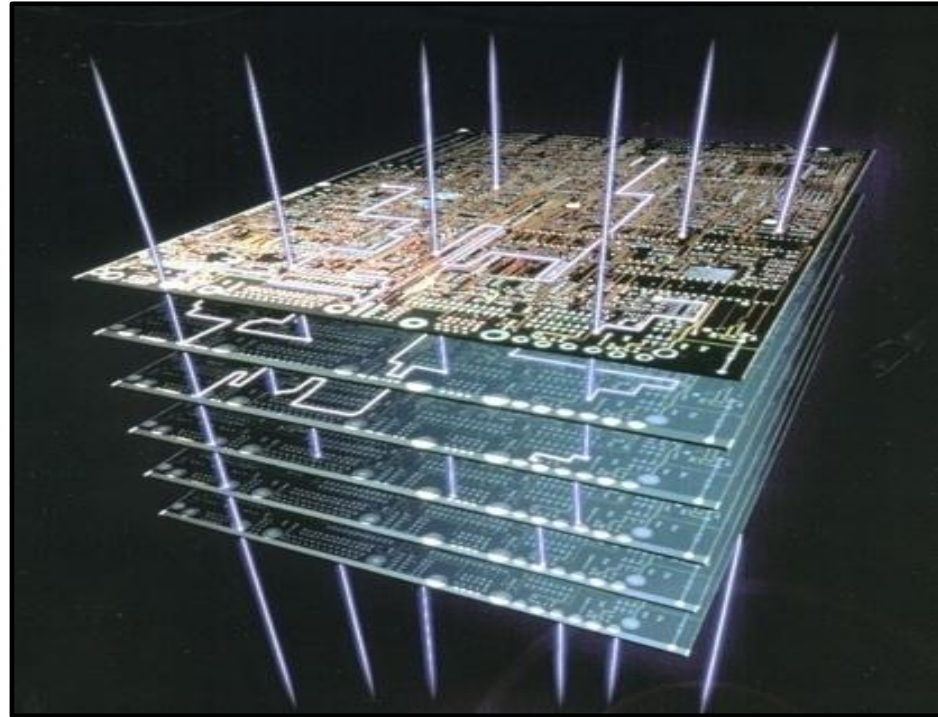


- Could be produce with an industrial way
- No main issue detected at this level
- Increased panel sizes will be produced in September 2012.

- Cirea has now the full knowledge for Bulk Micromegas.
- Resistive layer is starting with good results in small areas.
- The process has to be improved by using industrial processes, to be done this year.

Thanks for

Your attention



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