



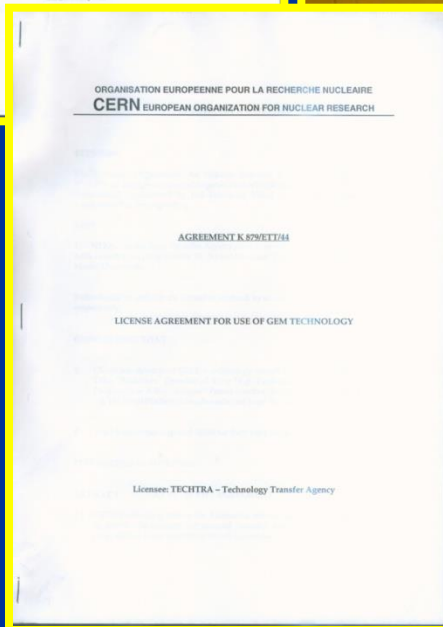
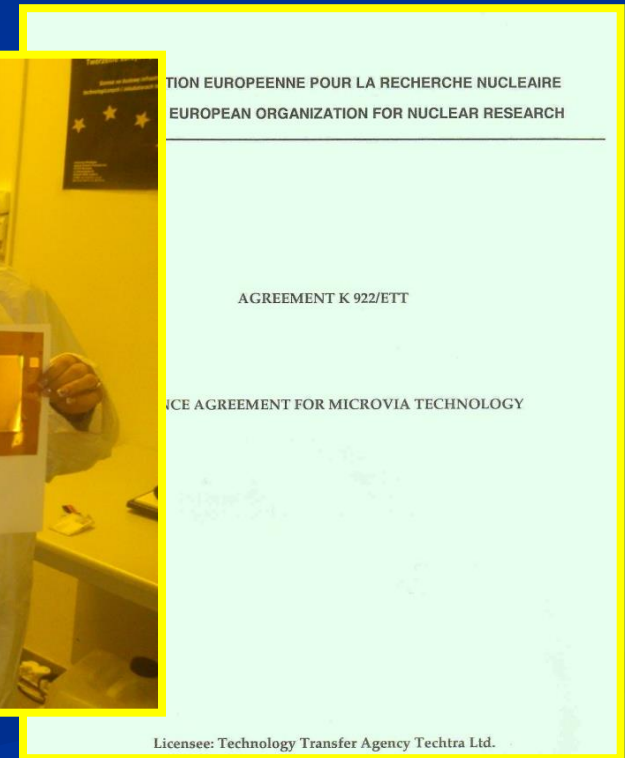
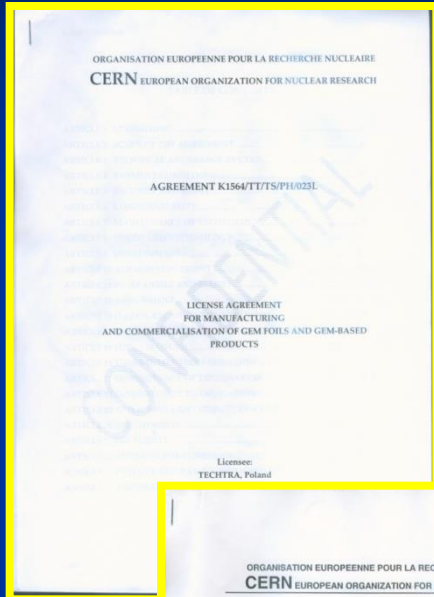
GEM production facility

- update

Piotr Bielówka

400 GEMs delivered
-no quality problems.

The begining: December 2002



GEM manufacturing upon CERN licence

RD51, Kalkota, Oct. 2014

Machinery for big size GEM production: Kapton etching machine

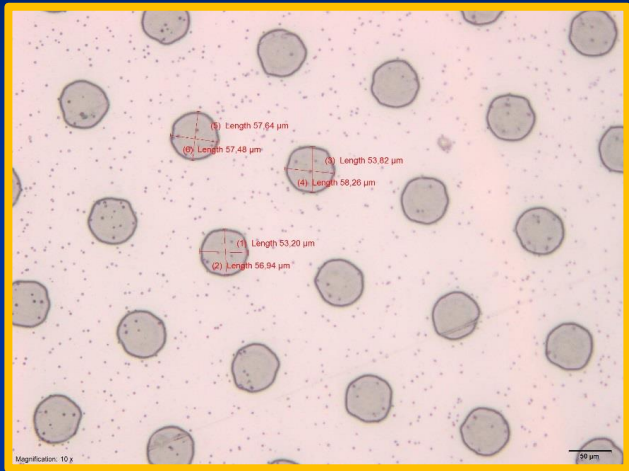


Type: **doublesided**
Maximum panel width: **650mm**
Status: **under commissioning**

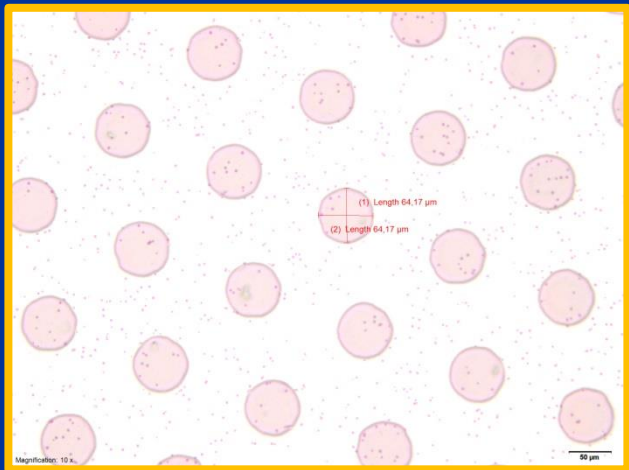
Kapton etching machine - operational



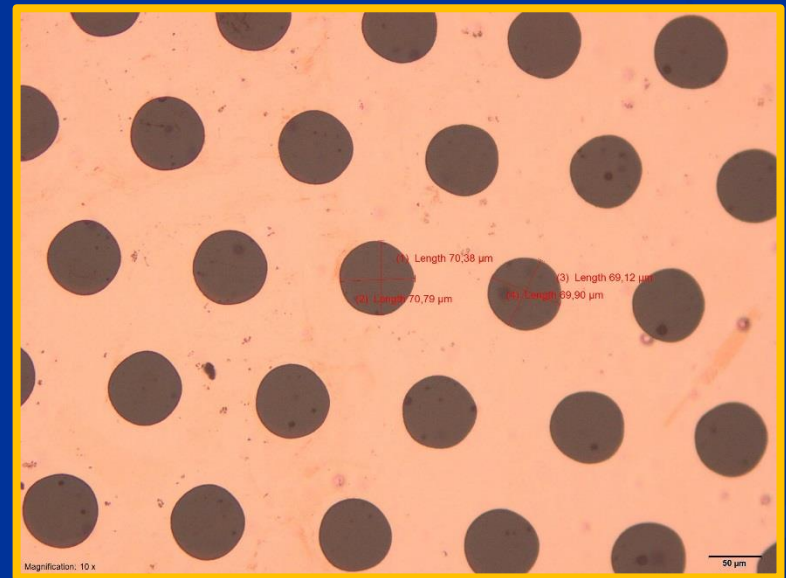
300x300mm² GEMs



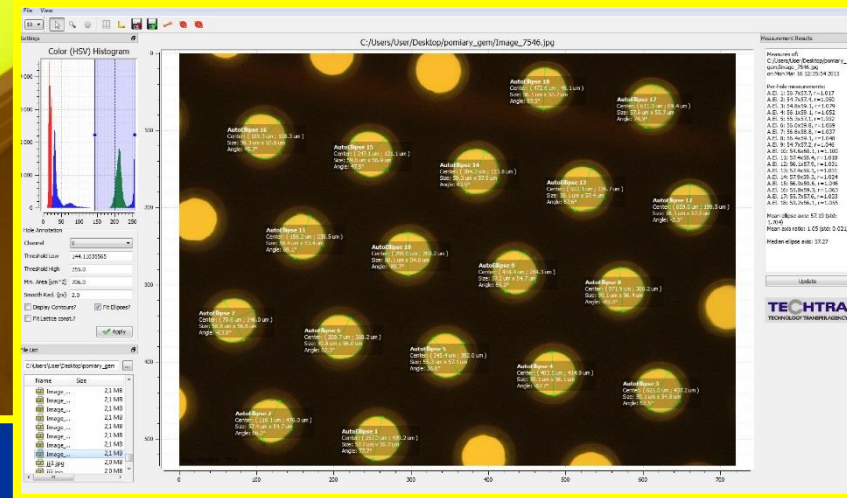
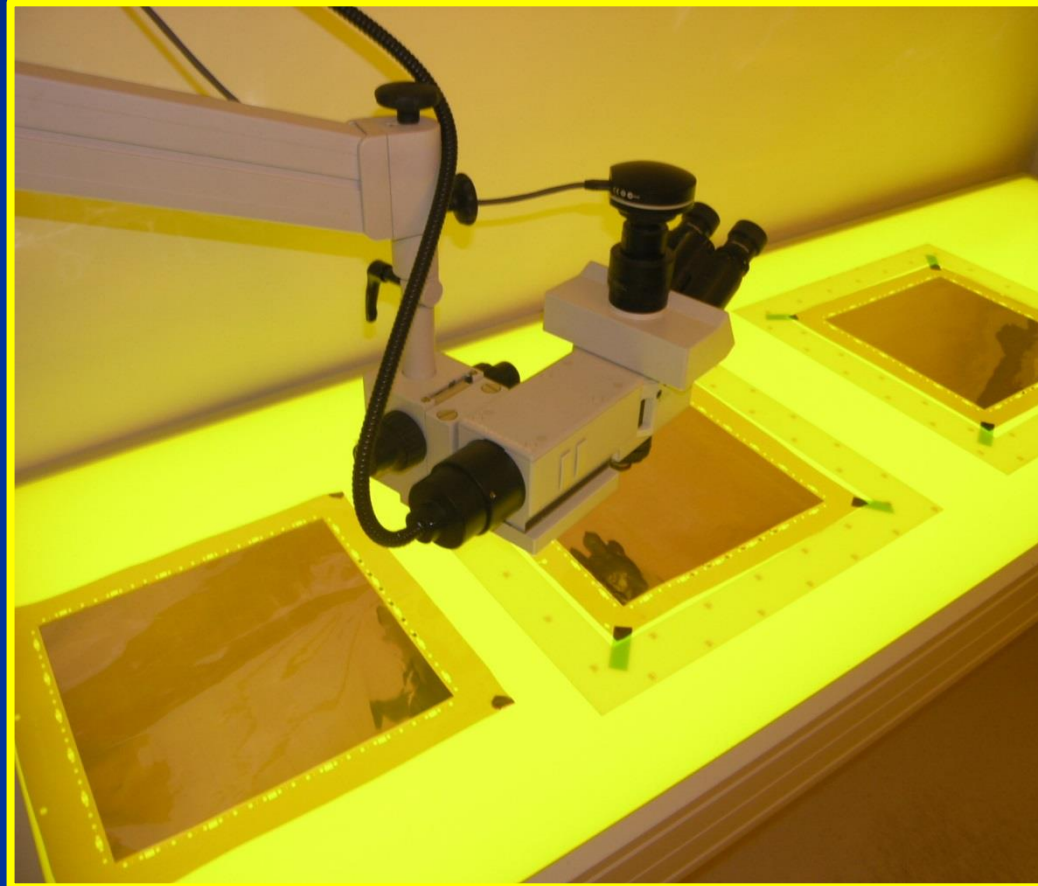
Photolithography films....



A new photomask supplier ??



... and openings in Cu

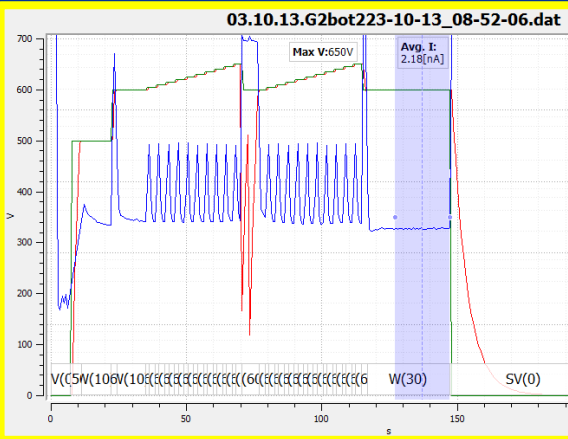


A new hole measurement system

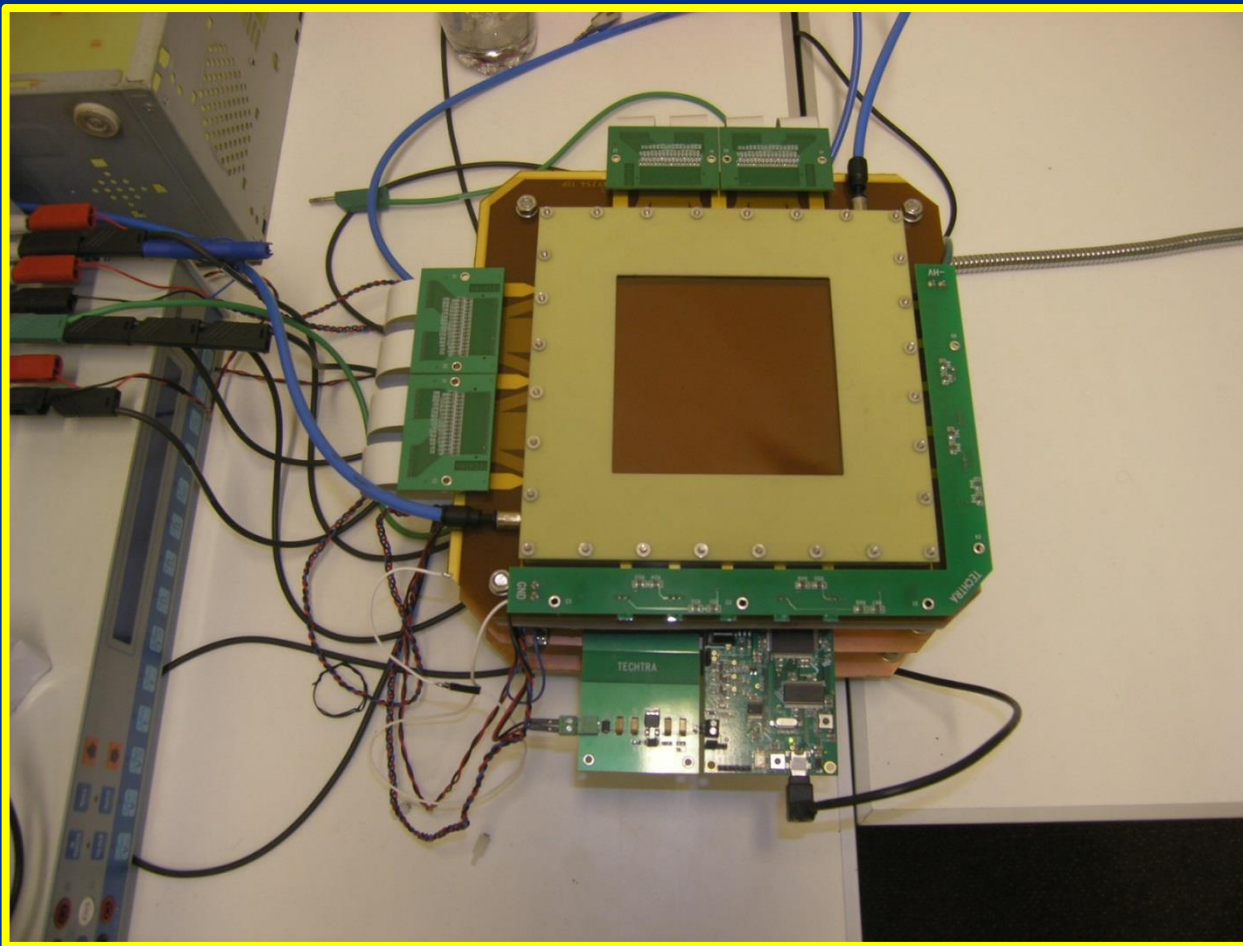
Leakage current:
typically: **below 1nA**
@600V@ 30%HR
@ 100cm² GEM

- improved cleaning
- clenroom

Measurement - 4 HV testing channels



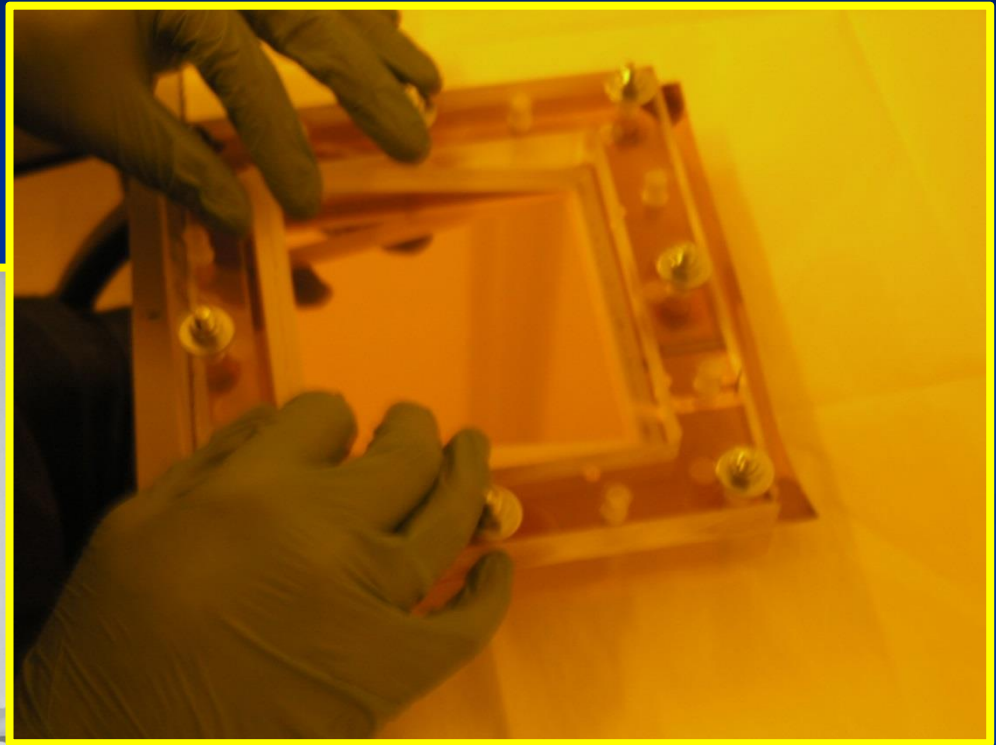
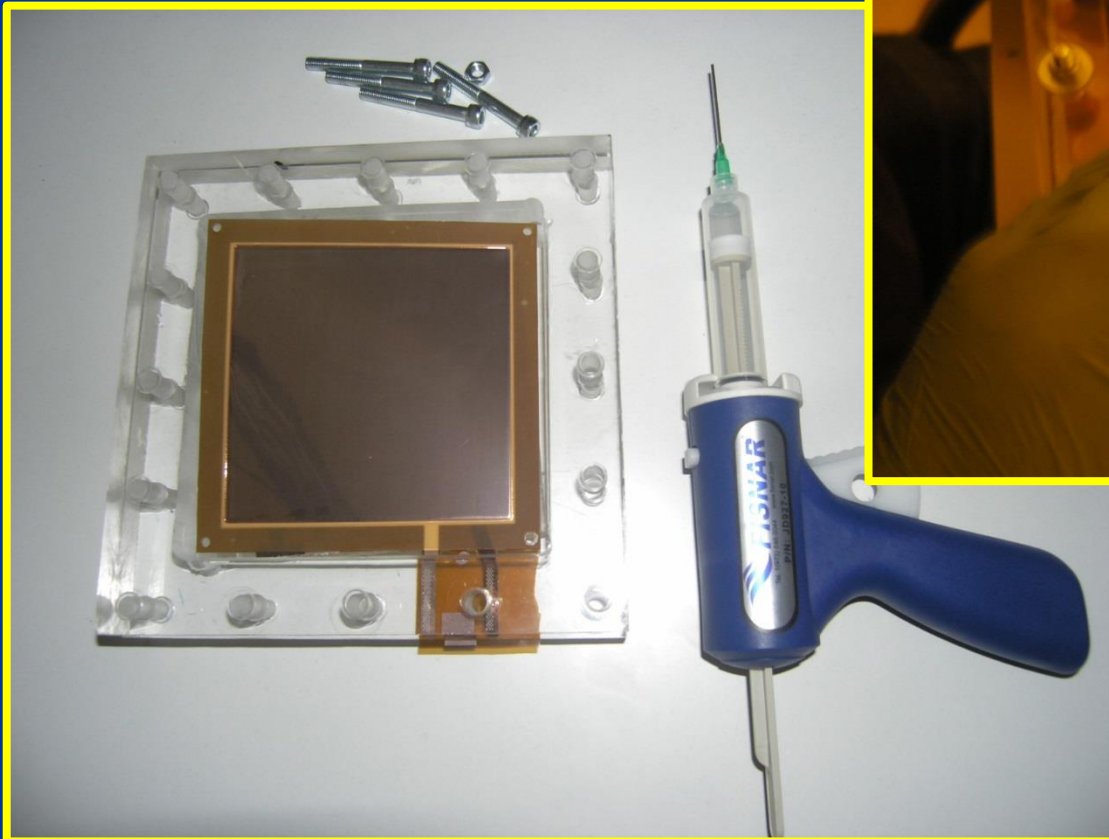
GEM kit detector - under construction



Am²⁴¹
X-ray tube

Readout ?

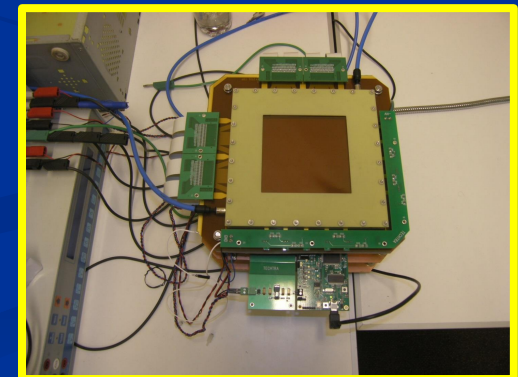
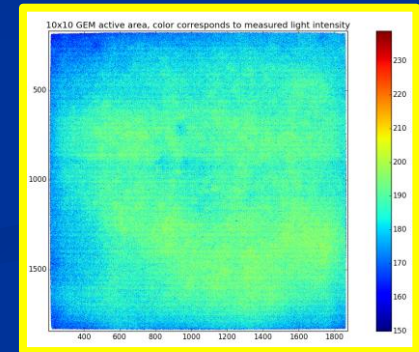
Framing GEMs :



- Adhesive tape
- Epoxy resin glue

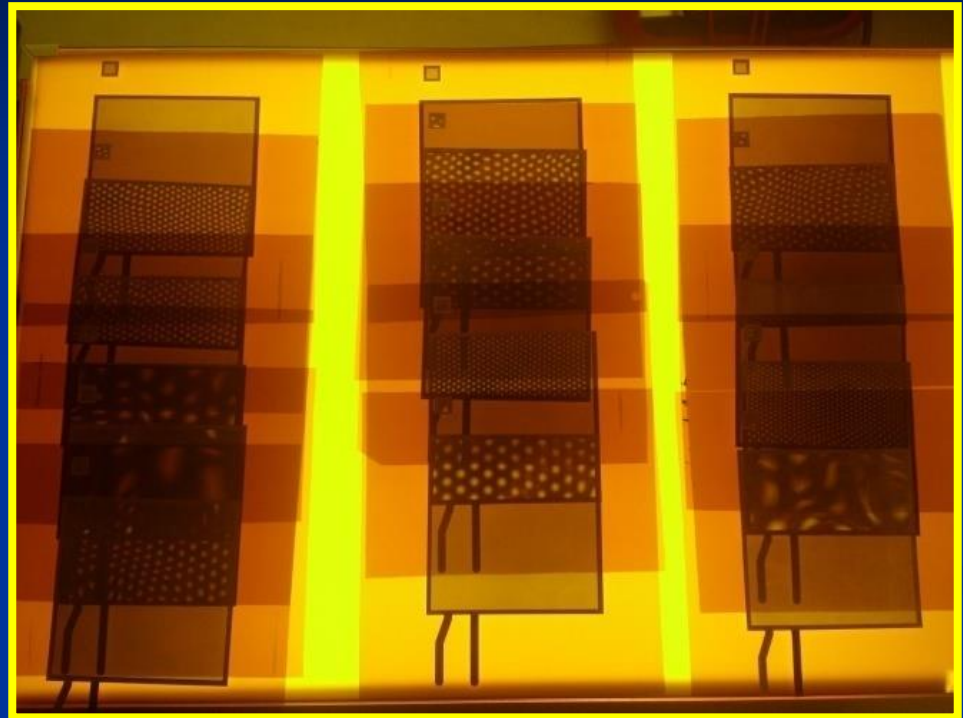
Plans for future ???:

1. Master big GEMs production
 1. Single mask - ok.
 2. Cu & Kapton etching -ok.
 3. Films - minor problem
2. Building and optimazing optical inspection system - **under construction**
3. Building X-ray testing stand - CERN GEM kit
 1. GEM framing - ok.
 2. Under construction



Our Core GEM Team

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- Alicja Sapiszczuk
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Steps towards big GEMs:

- to implement „single mask“ technique - CERN
- to acquire dedicated set of PCB machines - WPT



Access to EU funds through Wrocław Technology Park (WPT) - non profit organization.

Backup line

