

**TECHTRA**  
TECHNOLOGY TRANSFER AGENCY

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## Introduction to Techtra



## GEM production departament in Wroclaw Technology Park



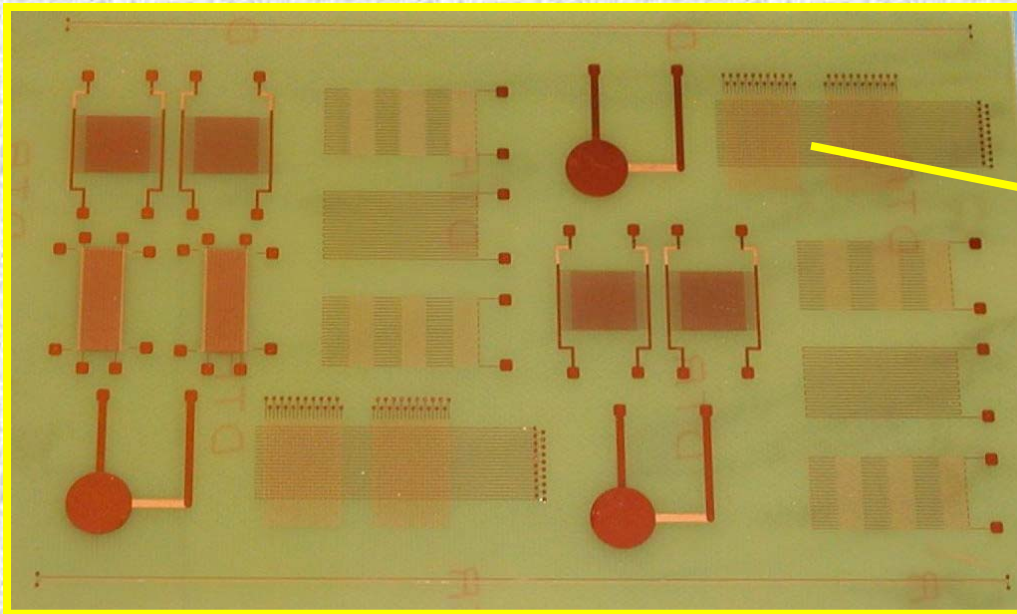
ORGANISATION EUROPEENNE POUR LA RECHERCHE NUCLEAIRE  
**CERN** EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH

AGREEMENT K 922/ETT

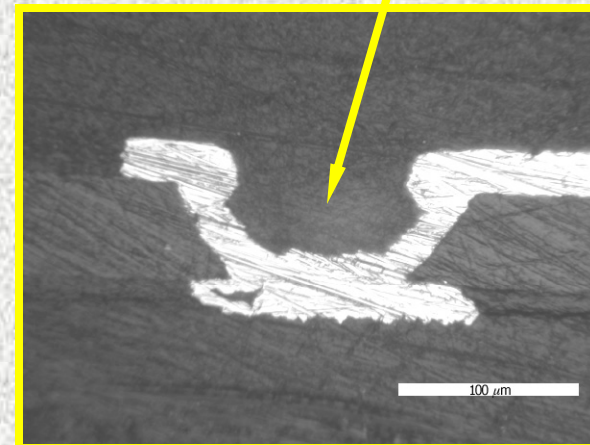
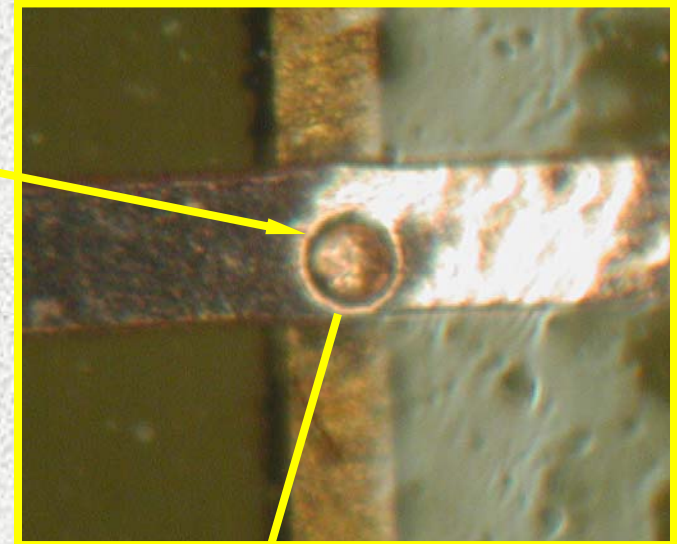
LICENCE AGREEMENT FOR MICROVIA TECHNOLOGY

Licensee: Technology Transfer Agency Techtra Ltd.

"License Agreement for  
Microvia Technology"  
between the European  
Organization for Nuclear  
Research CERN and  
Technology Transfer  
Agency Techtra Ltd.



MCV test board



## Techtra microvias processing facilities



MCV  
production  
line based  
on CERN  
technology

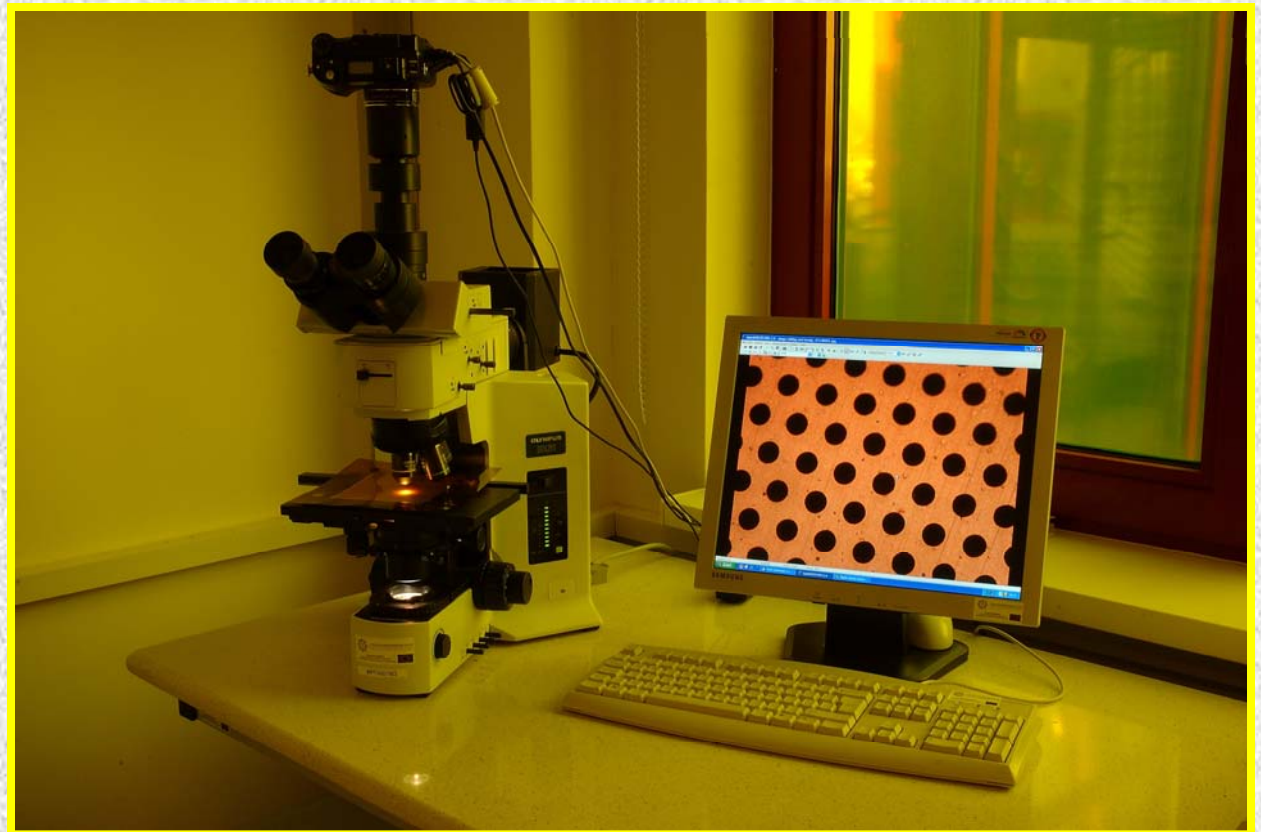


Laminator

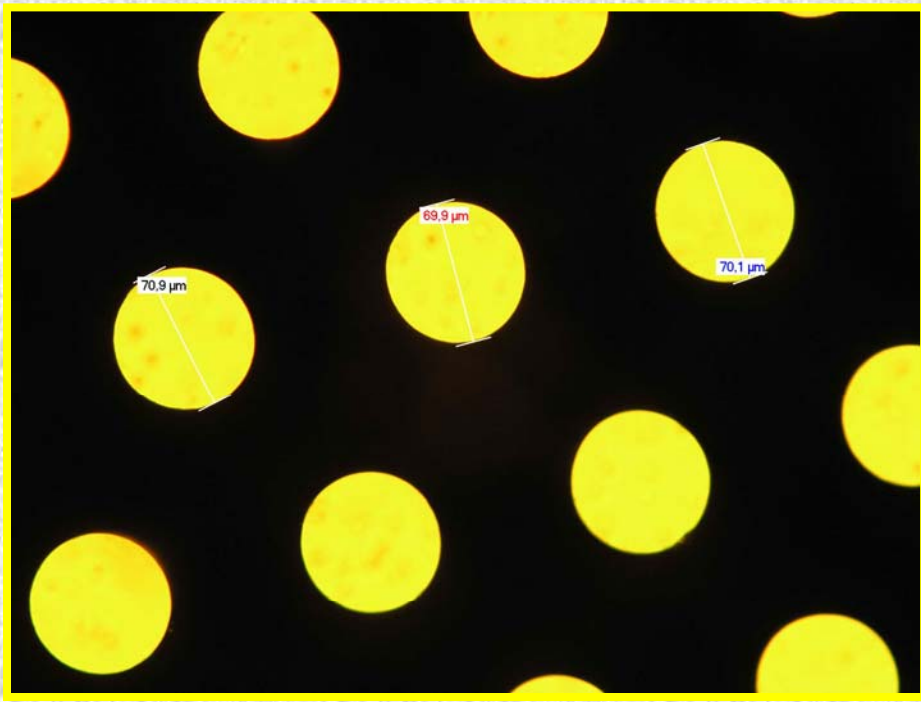


Exposure Unit





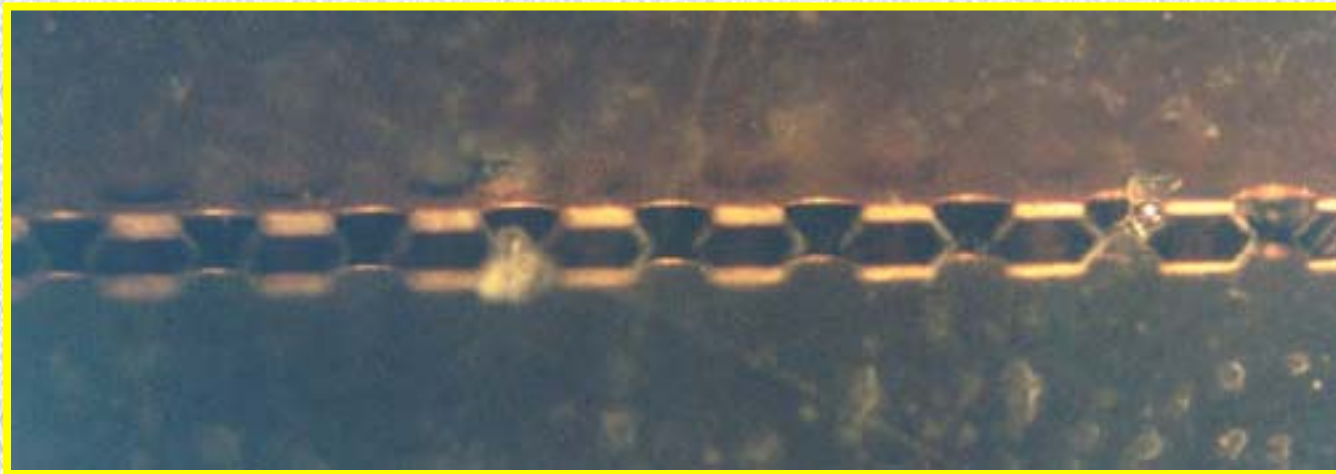
Geometry control



GEM holes. Magnification of 200x

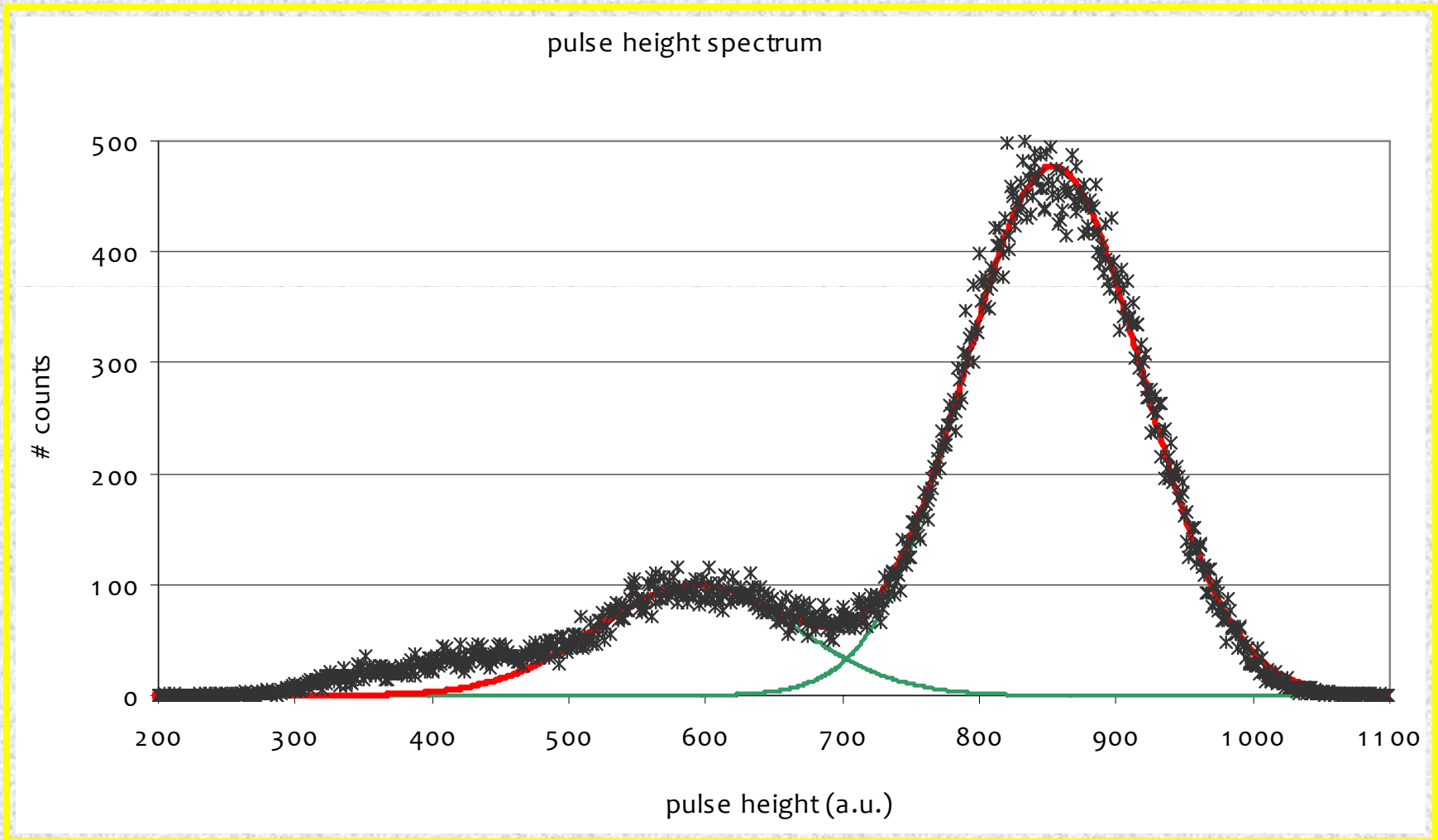


100x100 framed GEM



GEM cross section





Techtra GEM test results and a double Gaussian

## GEM Parameters:

- GEM boards size: 170 x 170 mm ( max. 500x500)
- GEM active area: 100 x 100 mm
- GEM boards thickness : 50  $\mu\text{m}$  + 10  $\mu\text{m}$
- Holes diameter in copper: 70 $\mu\text{m}$  +/-5 $\mu\text{m}$
- Holes diameter in Kapton: 50 $\mu\text{m}$  +/-5 $\mu\text{m}$
- Leakage currents: less than 10 nA at 600V