# LASER CHIP ACCESS

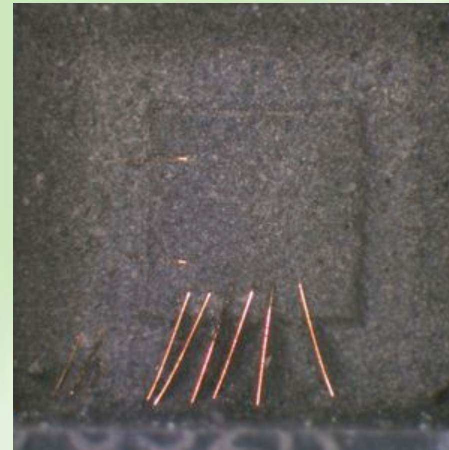
## CHALLENGES:

### CHIP ACCESS WITHOUT DAMAGE

### SAFE, FAST AND REPETABLE PROCESS

DIGITCONCEPT
Microelectronics & HighTech Equipment

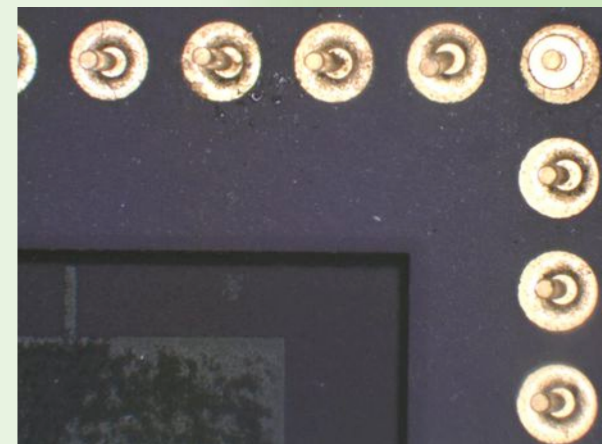
# SQUID/GMR SAMPLE PREPARATION



Goal:
Remove nearly all molding compound above the die down to 100$\mu$m thickness to allow SQUID investigations.

Benefits:
Safe, fast and repetable process.

Very helpfull when some package components are not chemical compatible.



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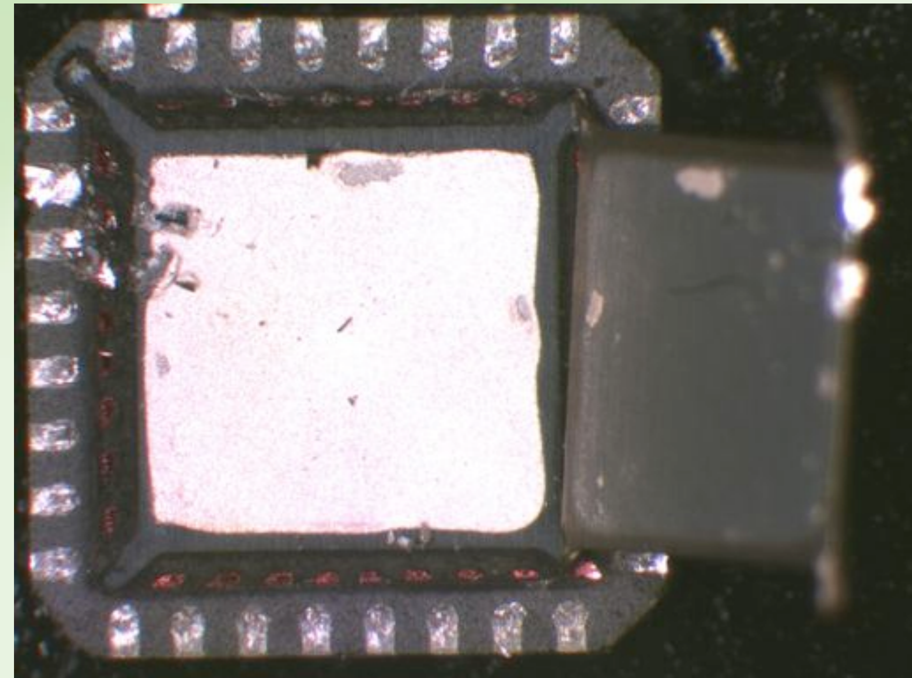
# DIE PADDLE REMOVAL

Goal:
Remove fastly die paddle to obtain backside access.

Benefits:
Fast and repetable process.
No mechanical scratch on die backside.

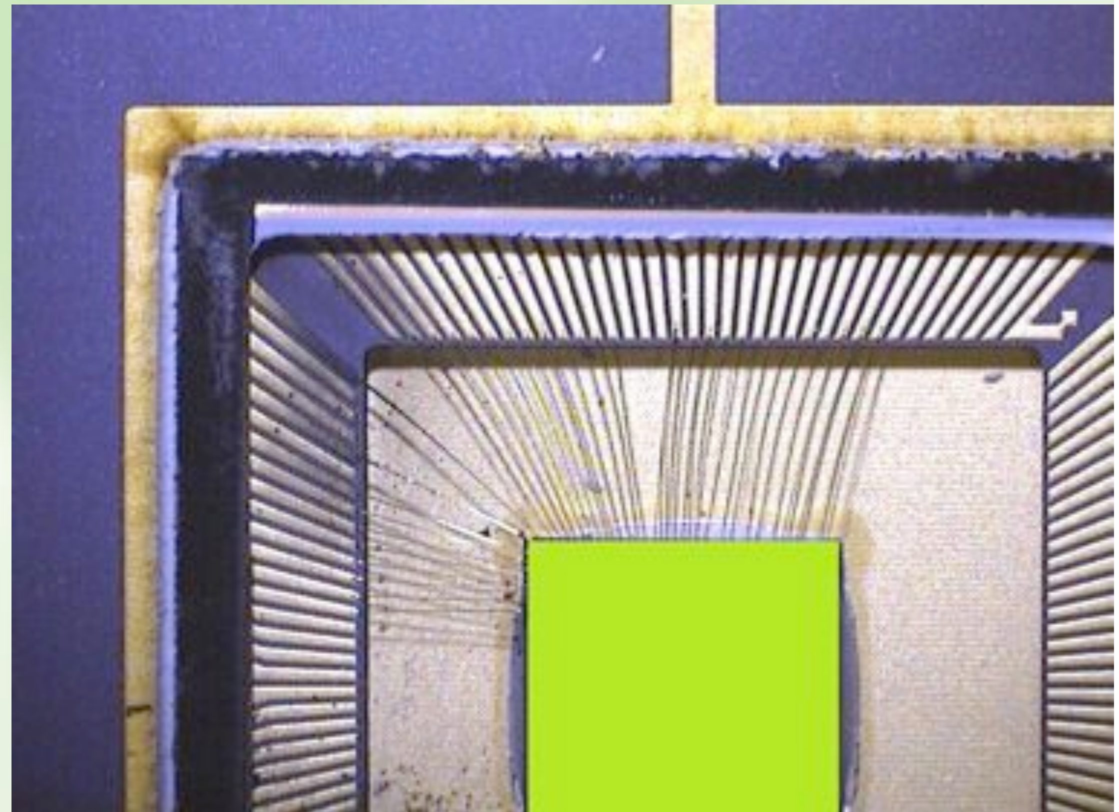
Necessary to remove attach glue with acetone.



Goal:
Remove fastly glass cover .

Benefits:
Safe, fast and repetable process.
No thermal stress on sample.

Necessary to clean sample with a solvent (vaporised glue).



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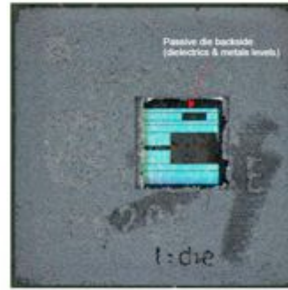
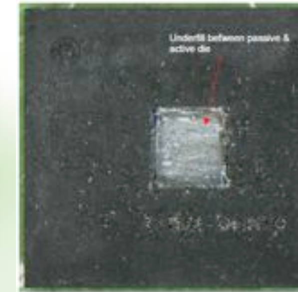
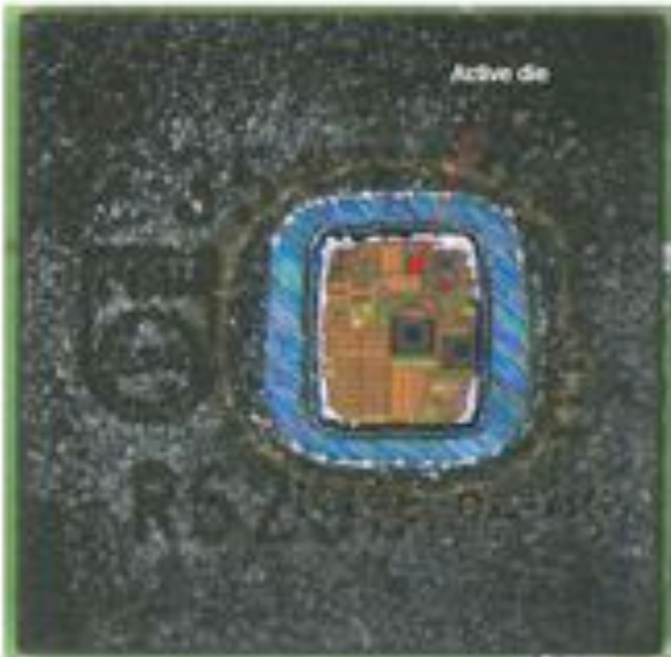
**Laser decapsulation:**
Plastic etching down to passive die backside (silicon).



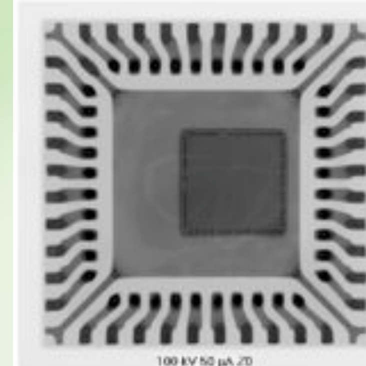

**Plasma etching:**
Silicon etching on passive die backside.



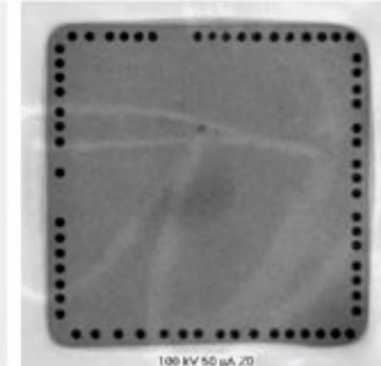

**Wet & dry etching, down to underfill:**
Plasma etching => dielectrics.
Alu etch => metals levels.




Chemical decapsulation:
Undefill etching

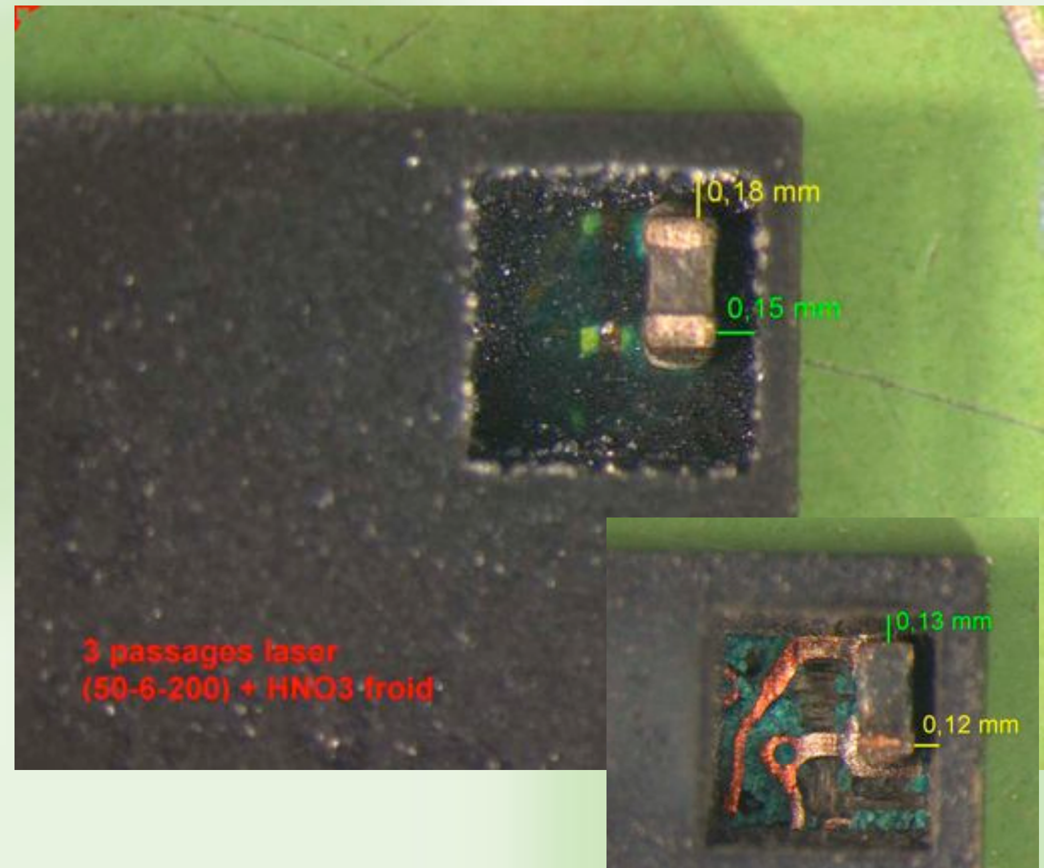



**Xrays analysis – global view:**
No visible damage on 1st & 2nd interconnects.




**Xrays analysis – zoom on active die:**
No visible damage on 1st & 2nd interconnects.

CONCLUSION: the sample was successfully prepared without removing PICS die and connections of active die to Leads.
: This new method was improved during trials and test and is now operational.




LaMIPS
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NXP founded by Philips