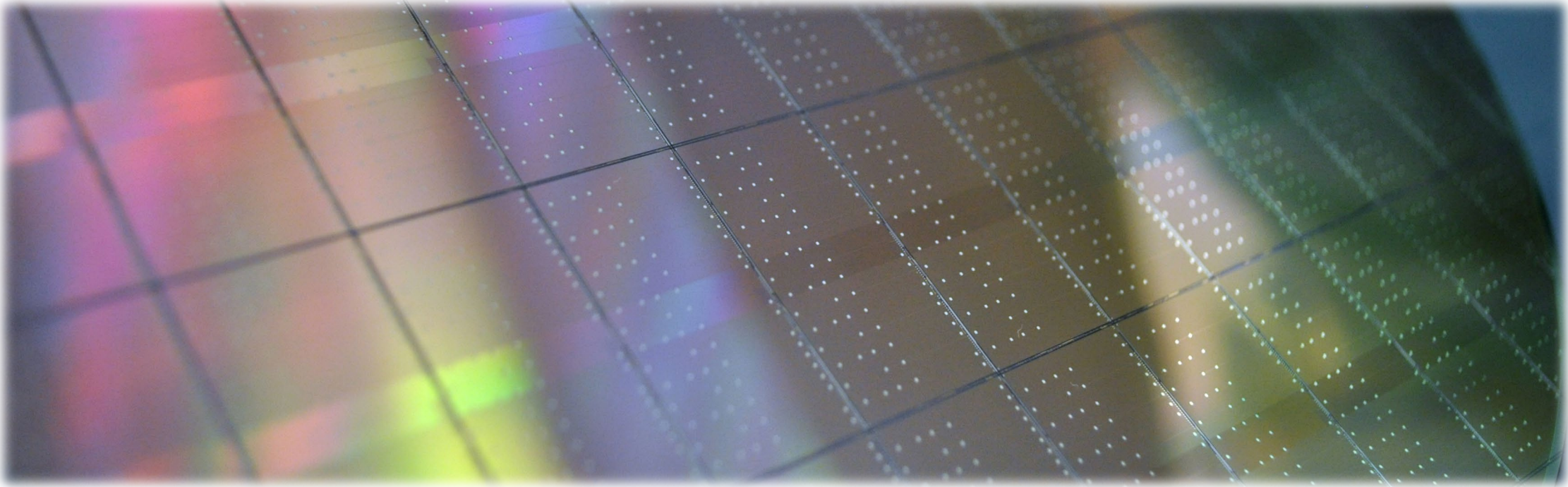


Modules and supermodules assembly readiness at JINR



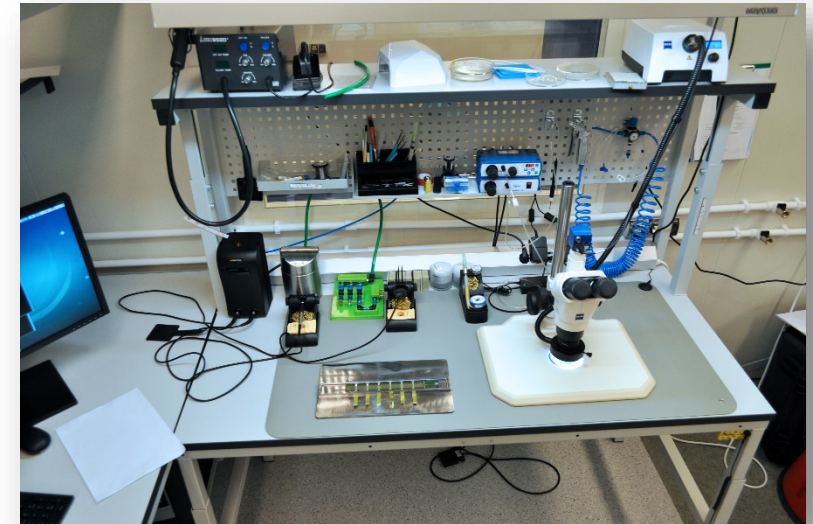
Sheremetev Aleksei

JINR LHEP



Production line for **assembly** of Hybrid Integrated Circuits (HIC):

- Clean room ISO6 ~50 m² (ready);
- Pick and Place machine ALICIA-8 has been installed and configured for assembly and transfer data for LIT data server (need to adjust gripper part of machine);
- F&K Delvotec G5 ultrasonic wire bonding has been configured for bonding HIC (ready).

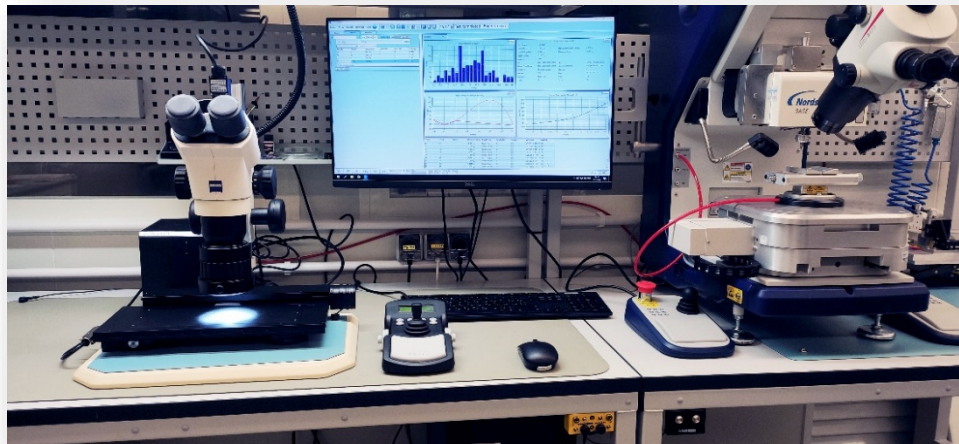


Production line for **testing** of Hybrid Integrated Circuits (HIC):

- Soldering and assembly Flexible Printed Circuit (FPC) (**ready**)

Qualification/endurance test setups:

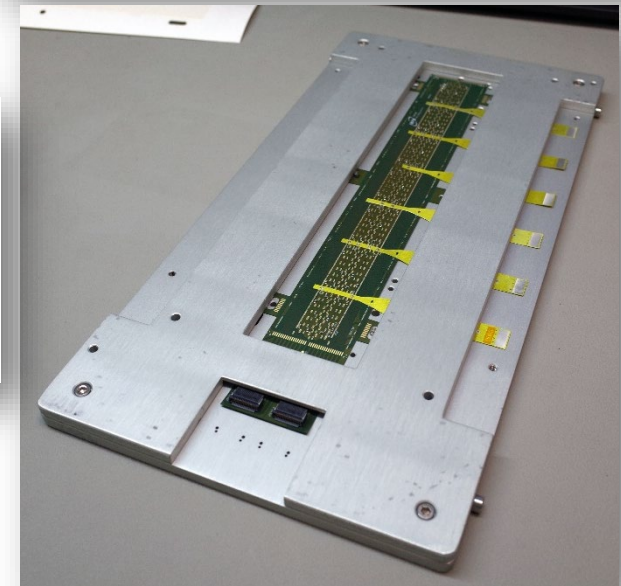
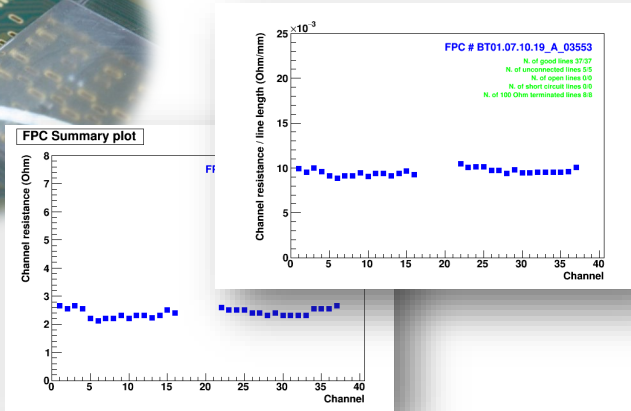
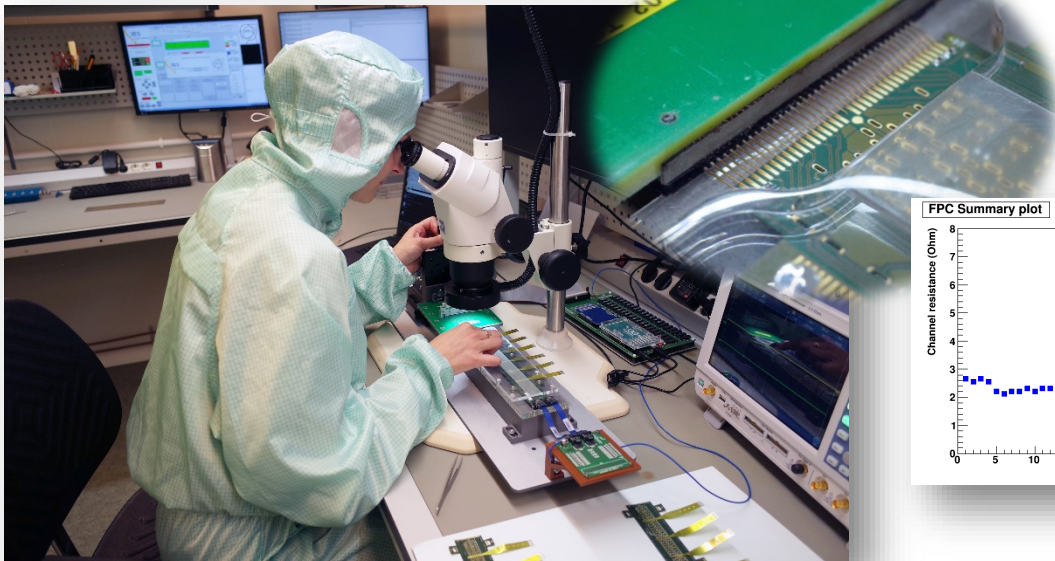
- Pull tester DAGE4000+ (**ready**)
- Peel force tester Multitest i1 (**ready**)



Workflow of preparing the FPC:

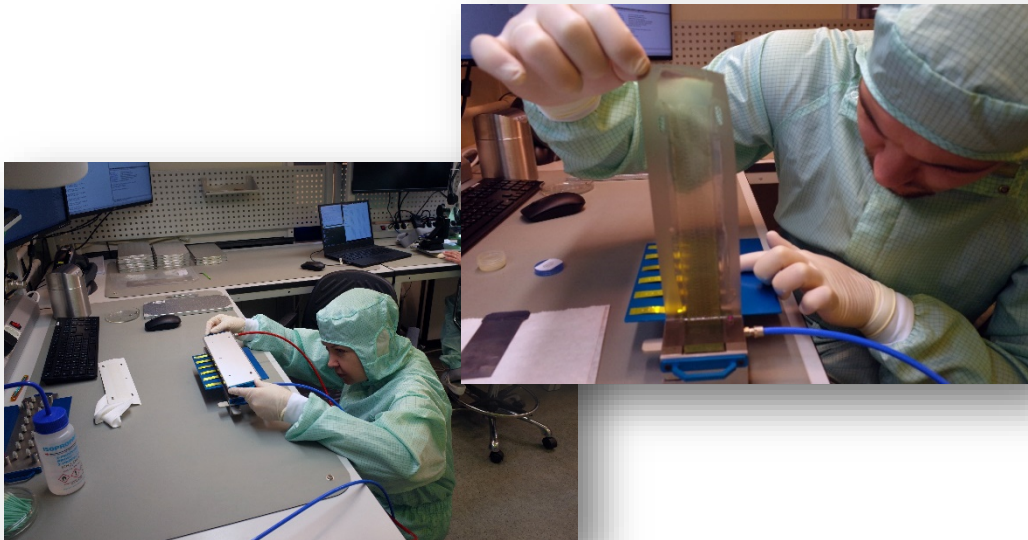
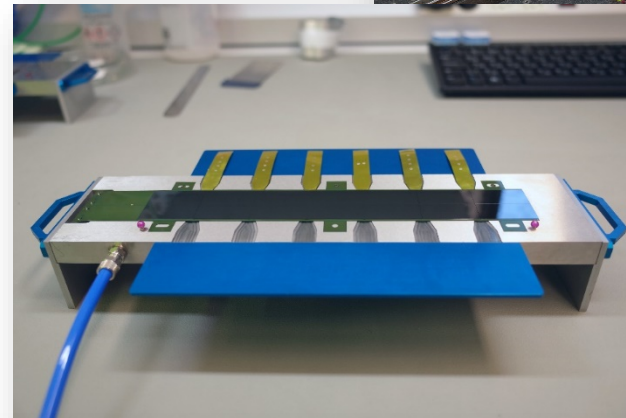
- ✓ Soldering Cross cable to FPC
- ✓ Cleaning the FPC in an ultrasonic bath
- ✓ Electrical test of FPC (impedance)
- ✓ Storage to carrier plates

90 FPC has been ready for assembly



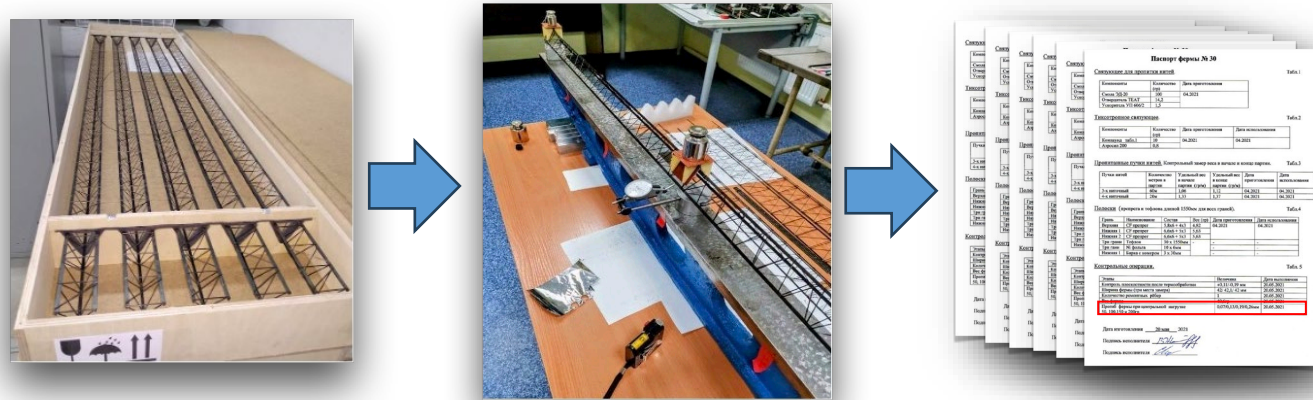
Workflow of assembly MICA chip to FPC:

- ✓ Alignment MICA chips in ALICIA-8
- ✓ Glue chips to FPC
- ✓ Wire bonding on Delvotec G5
- ✓ Pull test some HIC
- ✓ Peel test of wire bonding on HIC



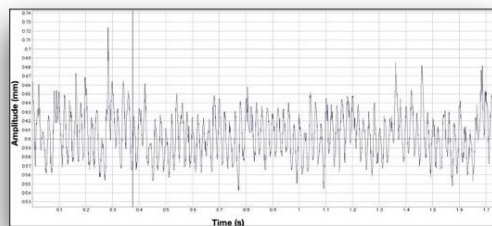
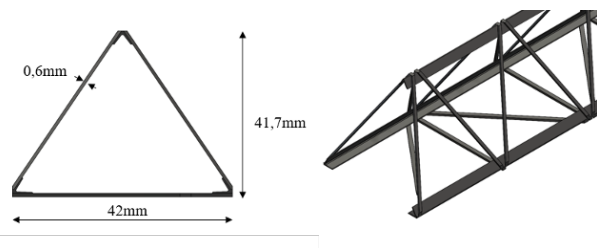
List of FPC's assembly												
#	Box ID	FPC ID	Size	Blank FPC ELTest	Cross cab. ID	Type of FPC	Cleaning FPC	FPC EL.test	Comments	Assembly HIC	Batch	Site
25	9	3808	NOK	OK	CC0007	AR	OK	OK		Assembly dummy HIC (DK)	GSD0Y	JINR
34	10	3848	NOK	OK	CC0021	AR	OK	OK		Assembly dummy HIC (NOK)	GSD0Y	JINR
36	10	3863	NOK	OK	CC0023	AR	OK	OK		Assembly dummy HIC (DK)	GSD0Y	JINR
37	10	3870	NOK	OK	CC0024	AR	OK	OK		Assembly dummy HIC (NOK)	GSD0Y	JINR
283	7	3726	NOK	NOK	CC0003	AR	OK	NOK		Assembly dummy HIC (DK)	GSD2R	JINR

Mechanical test

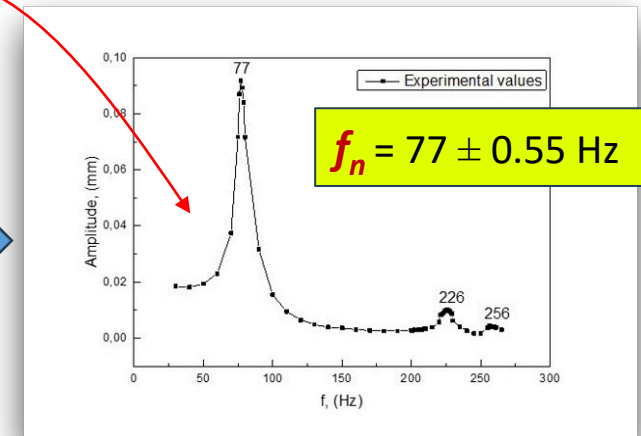
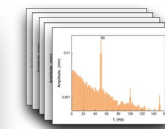
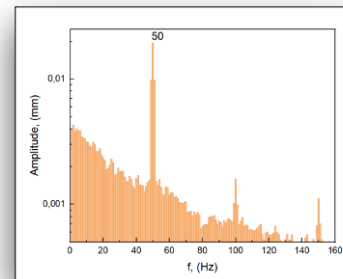


Determination of the 1st natural frequency before and after the irradiation at IBR-2M reactor

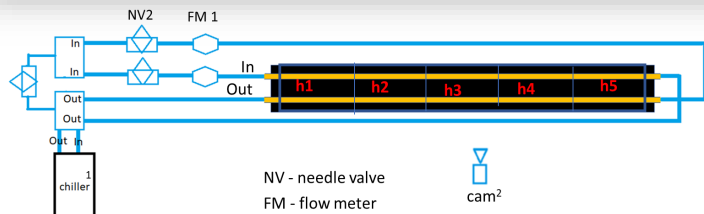
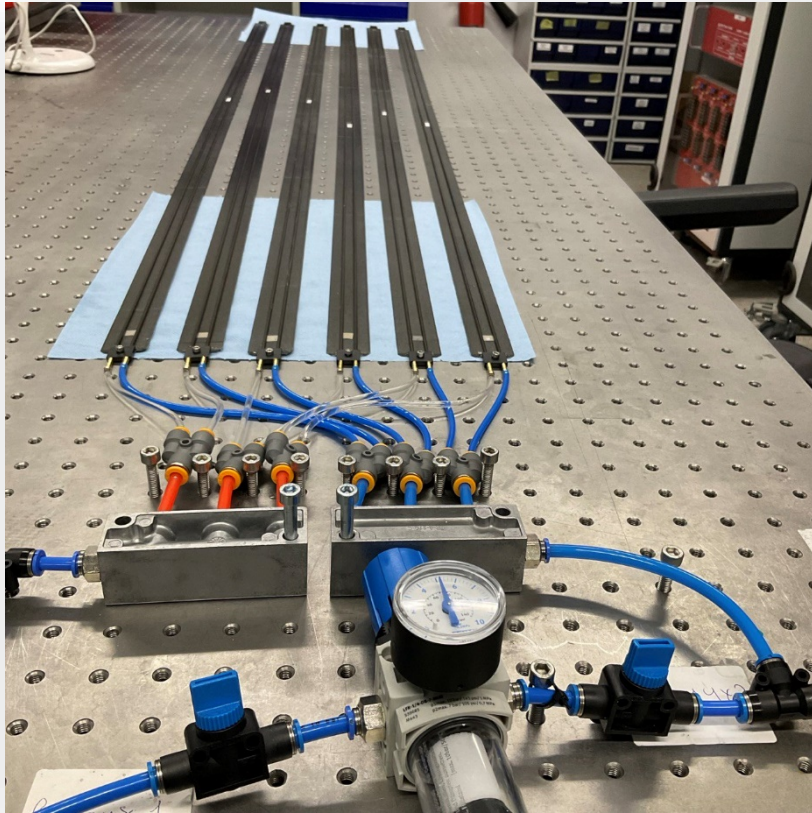
Maribel Herrera
Tuyana Lygdenova



FT



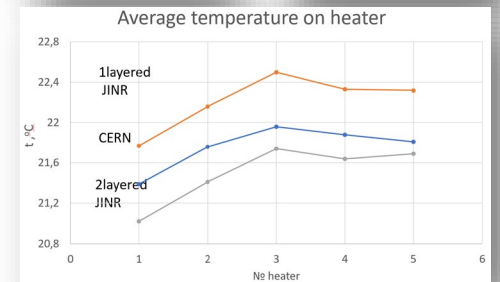
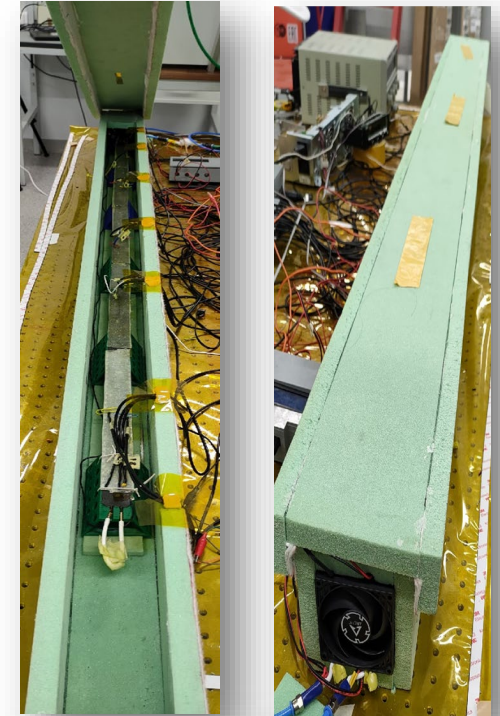
Cooling test



Heat imitators



Thermal test





Workflow of assembly STAVE:

- ✓ Clean room for assembly STAVE (not ready);
- ✓ Mitutoyo Machine (on storage);
- ✓ Set of jig (on storage);
- ✓ Functional test equipment (on storage);



- ✓ Infrastructure for assembly HICs will be ready for production provided the gripper of ALICIA 8 will be replaced
- ✓ Test bench of Electrical test for HIC are scheduled to be ready
- ✓ Technical staff trained in HIC assembly stages
- ✓ Benches of QA test for carbon part of STAVE has been ready
- ✓ Sets of jig for the HIC and STAVE production on storage
- ✓ Infrastructure for assembly STAVE not yet ready

Thank you for the attention !

