Universita' di Trieste and INFN Trieste
Contributions to EIC SC

- Past/current activities within ITS3
- Plans

Giacomo Contin
Università di Trieste and INFN Sezione di Trieste

EIC Silicon Consortium meeting – July 26th 2021

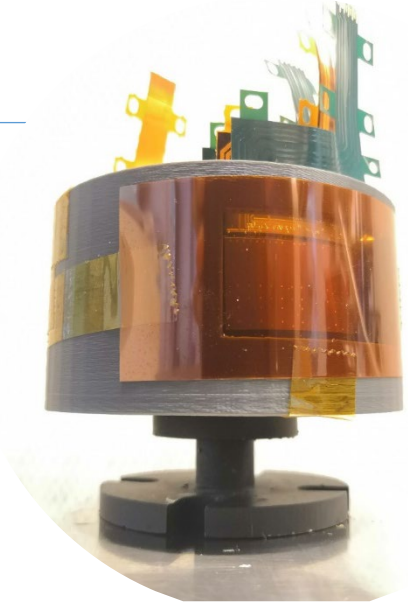
Past/current activities - 1

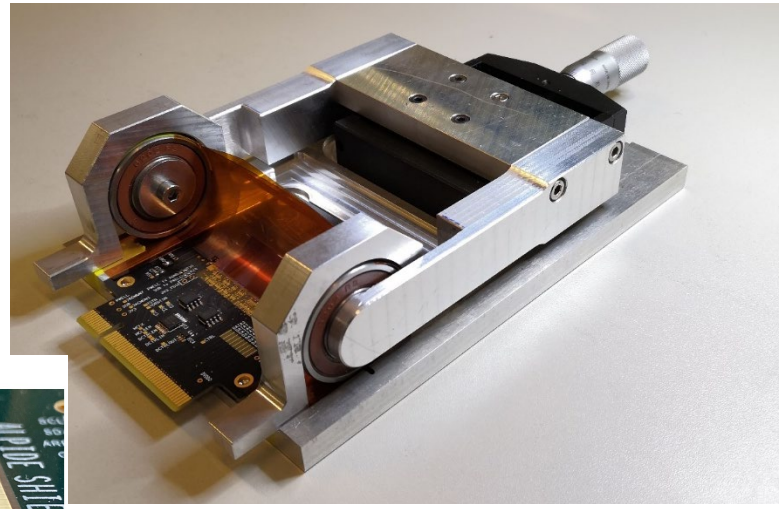
Pixel sensor bending

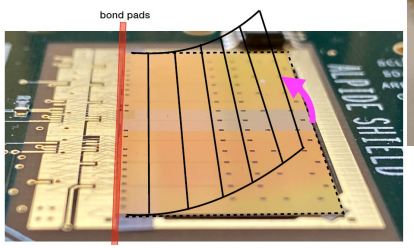
First bending development

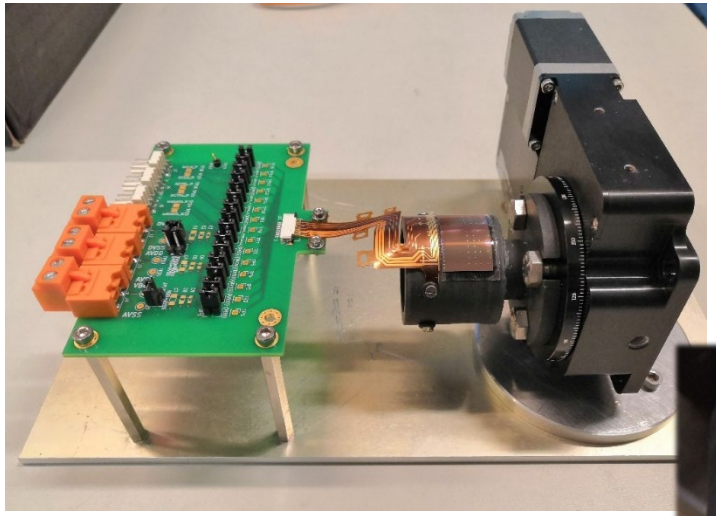
Design and production of sensor bending tools

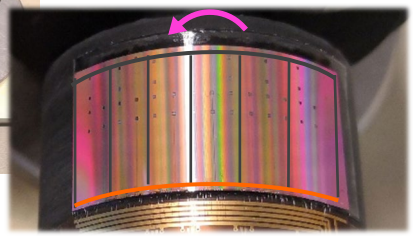
- Prototyping of bending tools for existing sensors
- Bent sensor surface description



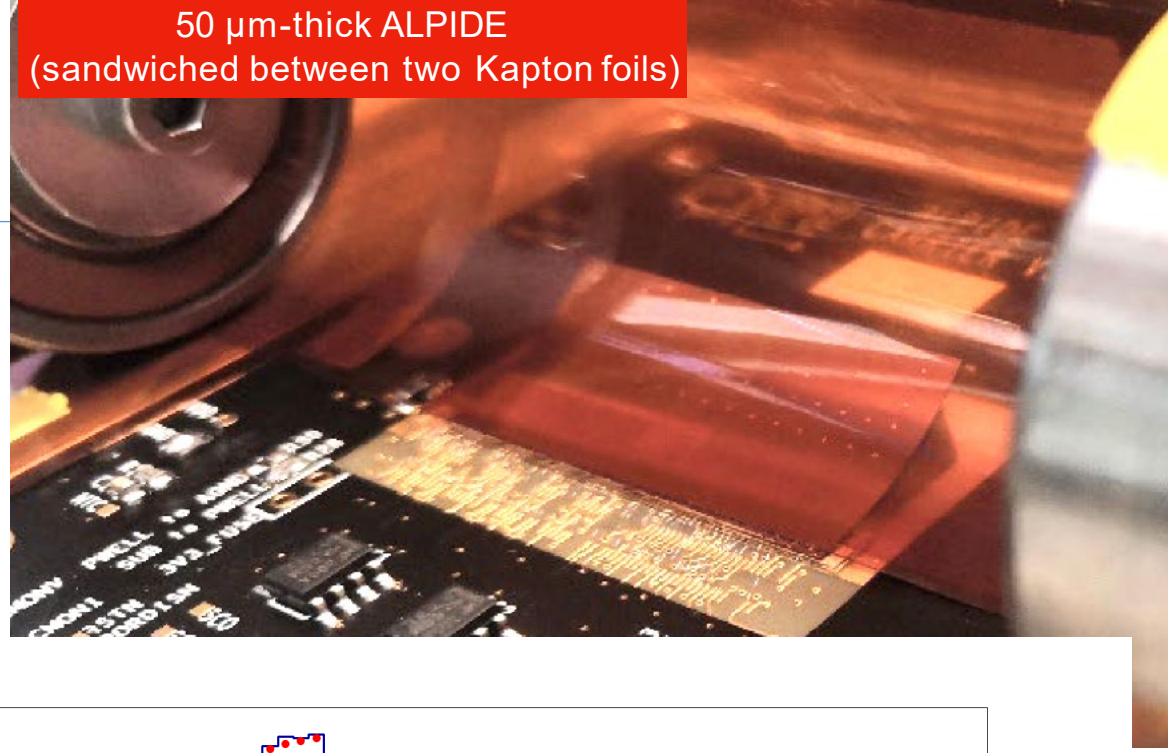








Past/current activities - 2

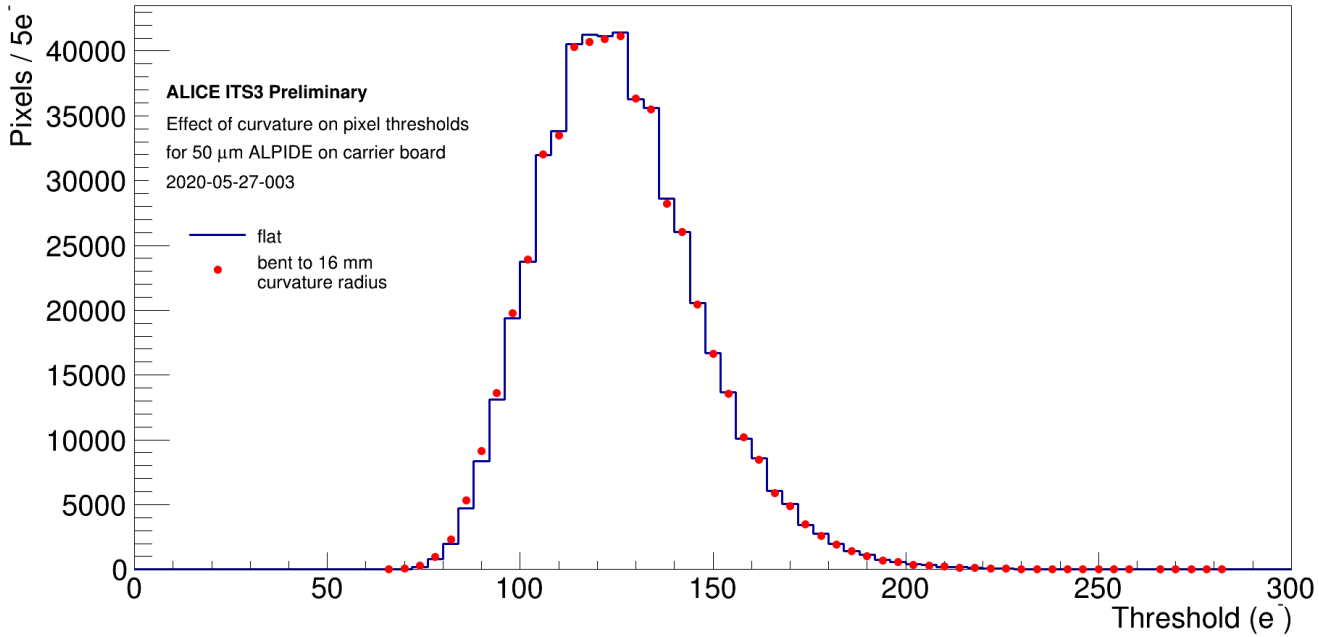


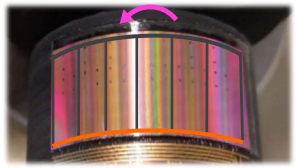
Laboratory tests to characterize bent ALPIDEs

- in terms of thresholds and fake-hit rate
- different set-ups are tried
- experience on handling is gained

- The curvature effect is not noticeable on:
  - pixel thresholds, FHR, pixel responsiveness
  - tested down to below nominal bending radius

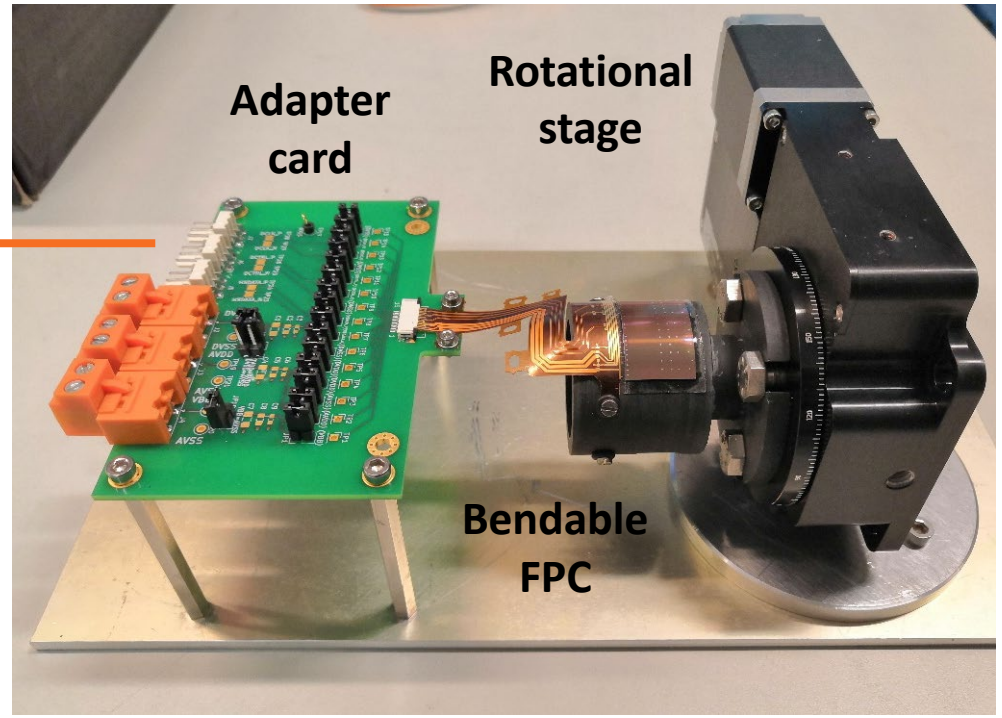
- Multiple chips successfully installed and tested in lab, and sent to testbeams

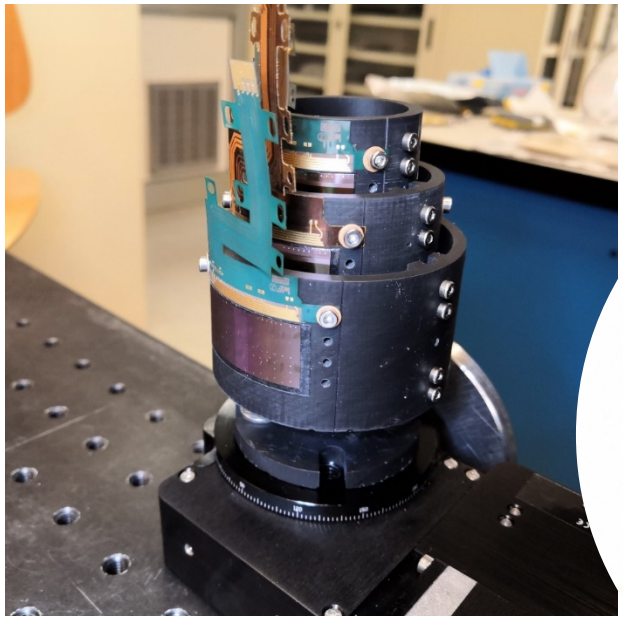




Past/current activities - 3

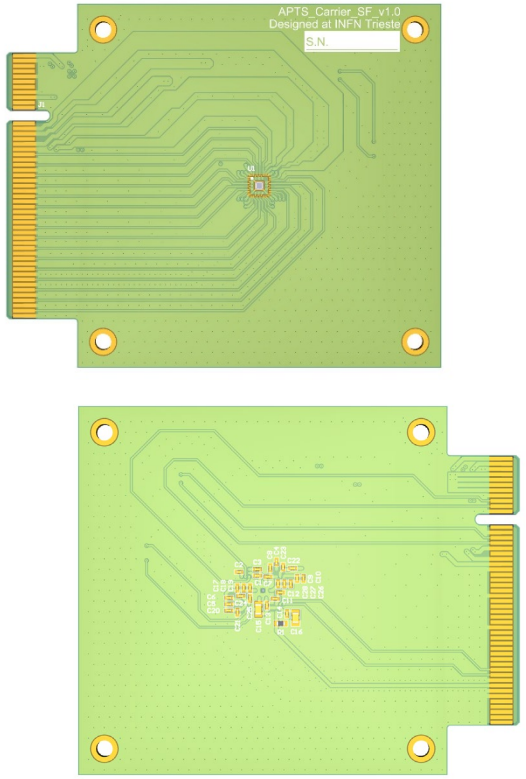
- DUT assembly and lab-characterization



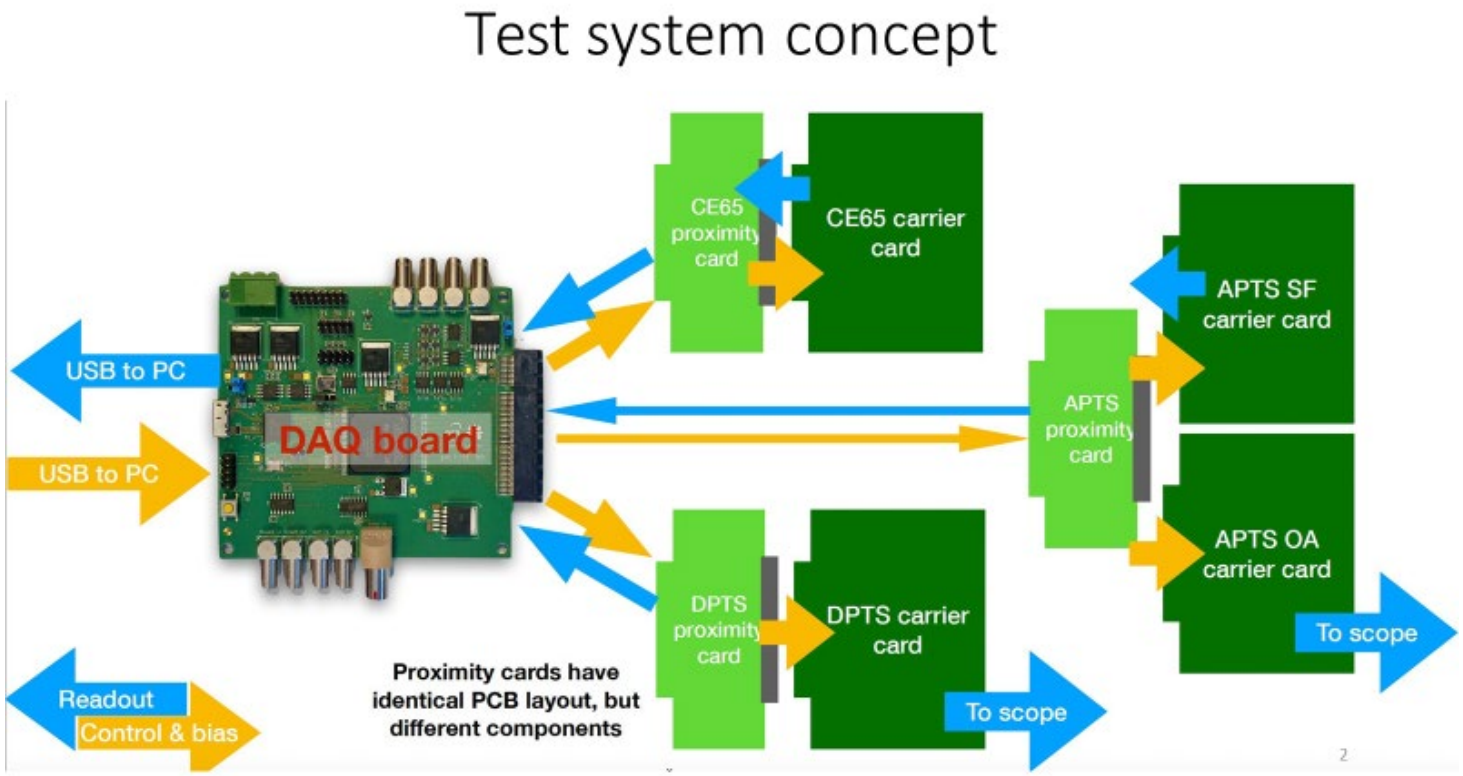


Past/current activities - 4

- Development of APTS Sf carrier board



Carrier board layout



Plans for future R&D in **Trieste**

Future activities within ITS3

- Continue with **ALPIDE DUTs** preparation and lab-testing
- **Test and characterization** of MLR1 test structures
- Development characterization setup for **bent MLR1** structures
- Moving to **larger-size** chips for bending and interconnections

Long term tentative plans for EIC-specific development

- **Characterization** of next submissions **after fork-off**
- Development of **test setups** for EIC-specific chips
- Bending and interconnections at **EIC target radius/dimensions**